

Leveraging AfCFTA for Regional Supply Chain Integration and Competitiveness

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ABSTRACT

The African Continental Free Trade Area (AfCFTA) represents the most ambitious integration project in Africa's contemporary economic history, carrying the potential to reshape regional supply chains and reposition the continent within global trade dynamics. Yet the extent to which the agreement can deliver meaningful competitiveness hinges on how effectively African economies leverage its provisions to deepen productive linkages, harmonise regulatory frameworks, and stimulate cross-border industrial cooperation. This study examines the strategic pathways through which AfCFTA can serve as a catalyst for supply chain integration across the continent, with particular attention to the institutional, infrastructural, and policy foundations required for its success. Drawing on comparative experiences from established regional blocs including the European Union, ASEAN, and the USMCA, the research highlights global lessons that can inform Africa's own integration trajectory. The paper also interrogates the current structure of intra-African trade, identifying persistent fragmentation, limited manufacturing depth, and infrastructural deficits as major impediments to cohesive regional value chains. Within this context, the AfCFTA's core protocols on trade in goods, services, investment, and digital commerce are analysed as critical tools capable of reducing transaction costs, creating market predictability, and fostering cross-border production networks. The study further evaluates the enabling role of trade facilitation, logistics optimisation, digital transformation, and sustainable financing in building resilient supply chains that can withstand global shocks. The paper argues that realising the competitiveness promise of AfCFTA requires coordinated policy alignment, targeted investments in regional infrastructure, and a deliberate shift towards technology-driven industrialisation. By outlining concrete strategic priorities, the study contributes to ongoing debates on Africa's integration agenda and offers actionable insights for governments, private sector actors, and development institutions committed to strengthening the continent's position in global value chains.

Keywords: AfCFTA, Regional Integration, Supply Chains, Competitiveness, Trade, Transport, Transaction, Value Chains, Trade Facilitation, Industrialization.

INTRODUCTION

Over the past two decades, global production has undergone a quiet but decisive transformation. No longer shaped solely by national factories or domestic markets, economic activity increasingly unfolds through sprawling networks of suppliers, processors, logistics corridors, and service providers that cut across national borders. These regional and global supply chains have become the backbone of modern competitiveness, allowing countries to specialise, pool resources, and reach markets with greater efficiency. While regions such as Europe, East Asia, and North America have embedded themselves deeply within these networks, Africa has only recently begun to organise its economies around similar structures. The continent's trade landscape has historically been marked by fragmented markets, parallel regulatory systems, high logistical costs, and a narrow export base dominated by primary commodities. These conditions limited the emergence of integrated supply chains and, by extension, Africa's capacity to compete in global value creation.

The launch of the African Continental Free Trade Area (AfCFTA) in 2018 signalled an important attempt to break away from this pattern. More than a conventional trade agreement, the AfCFTA is conceived as a platform for re-engineering the continent's economic geography by enabling larger markets, coordinated industrial policies, and more predictable trade environments. Its Protocols ranging from trade in goods and services to investment and digital trade present an opportunity to reduce long-standing trade barriers and stimulate the type of cross-border production linkages that underpin competitive regional supply chains. For many African policymakers and development institutions, the AfCFTA is therefore not merely an economic reform initiative; it is a structural instrument for transforming the continent's place in the world economy.

Yet, the existence of the agreement alone does not guarantee automatic integration. Africa's current trade profile is still characterised by low levels of intra-regional trade hovering around 15–17 percent, far below those of the EU or ASEAN. Infrastructure deficits, cumbersome border procedures, policy inconsistencies, and the absence of stable manufacturing clusters continue to weaken the continent's ability to build efficient supply chain systems. Added to this are the systemic vulnerabilities exposed by the COVID-19 pandemic and subsequent global disruptions, which underscored how fragile Africa's production and distribution systems remain. These realities demonstrate that the AfCFTA's aspirations will only materialise if countries adopt deliberate strategies to knit together their productive sectors, harmonise regulations, and invest in shared infrastructure.

The study situates these challenges within a broader comparative and historical context. Other regional blocs, the European Union Single Market, ASEAN's production networks, and North America's integrated manufacturing corridors did not emerge by accident. They evolved through decades of treaty-based cooperation, institutional strengthening, and coordinated policy reforms. Their experiences show that regional competitiveness grows when states create an enabling environment in which firms can operate seamlessly across borders, supported by efficient transport corridors, standardised customs regimes, and specialised production hubs. Africa's efforts under the AfCFTA must therefore be understood as part of a wider global movement towards regional economic spaces that combine trade liberalisation with industrial cooperation.

This introduction also draws attention to the growing importance of digital technologies in shaping contemporary supply chains. From real-time logistics tracking to digital payment systems and automated customs processes, competitiveness today depends as much on the sophistication of data flows as on physical movement of goods. The AfCFTA's emerging Protocol on Digital Trade, alongside existing continental initiatives such as the Malabo Convention on Cyber Security and the Single African Digital Market agenda, provides a framework for leapfrogging some of the structural constraints that have long undermined African value chains. Digital integration offers a path for small and medium-sized enterprises (SMEs), which form the majority of Africa's private sector, to participate more meaningfully in regional trade.

At the heart of this research is a simple but critical proposition: Africa cannot compete globally without first integrating regionally. Supply chains do not function well in environments of fragmented standards, unpredictable regulations, or poor connectivity. By leveraging the AfCFTA as an anchor for policy harmonisation, infrastructure coordination, and industrial collaboration, African states can begin to unlock the scale advantages that other regions have enjoyed for decades. This study therefore seeks to examine how the AfCFTA can be used not just as a trade agreement, but as a strategic instrument for reorganising production across the continent, strengthening regional linkages, and enhancing long-term competitiveness.

In pursuing this objective, the chapter also sets out the analytical lens through which subsequent sections will examine Africa's integration journey. It introduces the conceptual foundations of supply chain integration, outlines the theoretical arguments for regional economic cooperation, and situates the AfCFTA within Africa's long history of integration efforts—from the Lagos Plan of Action and the Abuja Treaty to the more contemporary frameworks of the African Union and the regional economic communities. These historical and institutional layers are essential for understanding both the promise and the constraints of the AfCFTA in shaping a more interconnected continental market.

Conclusively, this introduction establishes the motivation, direction, and relevance of the study. It argues that the AfCFTA arrives at a pivotal moment when geopolitical shifts, global supply chain re-ordering, and technological advancements are redefining economic possibilities for developing regions. Whether Africa harnesses these changes to build resilient and competitive regional supply chains depends on the choices made by governments, private sector actors, and continental institutions in the years ahead. The research is therefore timely, offering insights that contribute to ongoing policy conversations on how Africa can translate its integration ambitions into tangible, continent-wide economic transformation.

CONCEPTUAL, THEORETICAL AND METHODOLOGICAL FRAMEWORK

Understanding how the African Continental Free Trade Area (AfCFTA) can foster regional supply chain integration and competitiveness requires a firm grasp of the underlying concepts and theoretical lenses that shape the discussion. The intersection of these ideas, regional integration, supply chain connectivity, and competitiveness reflects complex economic, political, and institutional processes that define Africa's evolving role in the global economy. This section explores these core concepts and outlines the analytical foundations relevant to the discourse.

Regional supply chain integration refers to the systematic coordination and interlinkage of production, distribution, and trade activities across national boundaries within a defined geographical space. It implies that economies within a region align their industrial and logistical processes in ways that create collective efficiencies, minimize transaction costs, and exploit comparative and competitive advantages (Gereffi, 2018). In a deeply interconnected global economy, regional integration goes beyond tariff reduction to include harmonized regulations, infrastructure interoperability, and shared production systems that support industrial upgrading (Baldwin, 2016). In Africa, the idea of supply chain integration carries a developmental dimension. Historically, African economies have been positioned at the lower end of the global value chain, primarily as suppliers of raw materials and importers of finished goods (UNECA, 2019). This structural imbalance has perpetuated dependency, constrained technological diffusion, and undermined industrial diversification. By fostering regional production linkages, the AfCFTA seeks to alter this dynamic through the creation of regional value chains that enable different countries to specialize in specific segments of production such as input manufacturing, processing, assembly, and distribution, while retaining value within the continent (UNCTAD, 2021). Effective regional supply chain integration thus depends on a combination of physical, digital, and institutional infrastructures. These include transportation corridors, logistics hubs, border management systems, harmonized customs procedures, and data-driven trade facilitation mechanisms (World Bank, 2020). Beyond infrastructure, integration also requires political commitment and trust among member states to ensure predictable trade environments and regulatory consistency. When countries align policies and coordinate investment in logistics and production capacity, they collectively strengthen resilience against global disruptions and enhance the continent's industrial competitiveness.

Competitiveness, in economic terms, denotes the capacity of an economy or region to produce goods and services that meet international standards while maintaining or expanding real incomes and employment (Porter, 1990). In a regional context, competitiveness transcends individual firm performance to encompass systemic factors such as institutional quality, innovation, policy coherence, and infrastructural adequacy (World Economic Forum, 2019). It reflects the environment in which industries operate, innovate, and grow in response to both regional and global market dynamics. For Africa, regional competitiveness involves the collective ability of member states to raise productivity and move up the value chain through industrial cooperation, technology transfer, and innovation diffusion. The AfCFTA provides an institutional platform to achieve these goals by harmonizing trade rules, reducing non-tariff barriers, and fostering cross-border investment. It is not merely a trade liberalization instrument but a strategic framework for industrial transformation and economic resilience (Olayiwola & Akinola, 2022). By stimulating economies of scale, enhancing infrastructure connectivity, and promoting the mobility of skills and technology, regional competitiveness can evolve into a shared continental asset rather than a zero-sum competition among nations. Empirical evidence suggests that regional competitiveness is most effectively achieved through collective industrial strategies rather than isolated national

efforts. The experiences of the European Union's single market and the Association of Southeast Asian Nations (ASEAN) production networks demonstrate that regional cooperation in supply chain management significantly improves productivity and export diversification (OECD, 2021). Africa's fragmented markets, if linked under the AfCFTA framework, could similarly leverage regional complementarities in resource endowments, labour availability, and market size to achieve transformative growth.

The African Continental Free Trade Area, established in 2018 and operational since 2021, is designed to create a single market for goods, services, and investment across all 55 African Union member states. Its primary objective is to boost intra-African trade by reducing tariffs and addressing non-tariff barriers that have historically constrained commerce among African nations (African Union, 2018). The AfCFTA also seeks to promote industrialization, sustainable development, and inclusive growth through enhanced economic integration and regional cooperation (UNECA, 2020). Unlike earlier regional trade initiatives, the AfCFTA is comprehensive in scope. It encompasses trade in goods, services, investment, competition policy, and intellectual property rights, thereby aligning with the multifaceted nature of modern supply chains (AfCFTA Secretariat, 2021). By integrating national markets into a unified continental framework, the agreement aims to stimulate the development of regional value chains that can compete globally. The AfCFTA's potential extends beyond trade liberalization; it is a catalyst for structural transformation. It provides opportunities for African countries to diversify exports, attract intra-continental investment, and strengthen industrial clusters. When supported by sound macroeconomic management, efficient logistics systems, and digital trade facilitation, the AfCFTA can enable Africa to reduce its dependence on extra-continental trade partners and instead build self-sustaining regional markets (UNCTAD, 2022).

A critical analytical lens for understanding how regional supply chains function is the “3Ts” framework (*Trade, Transport, and Transaction*). The 3Ts help illuminate the operational foundations of supply chains under the AfCFTA and provide a practical roadmap for assessing implementation challenges.

Trade captures the regulatory and institutional environments that govern access to markets. It includes tariff liberalization, rules of origin, harmonization of standards, customs procedures, and trade facilitation measures. Without predictable and transparent trade rules, regional value chains cannot operate efficiently. Transport represents the physical and logistical infrastructure that connects production centres. This includes roads, rail, ports, air corridors, cold-chain systems, inland dry ports, border crossings, and regional transport corridors. Given that Africa still ranks among the lowest globally in logistics efficiency, the transport pillar is indispensable to supply chain reliability and cost-effectiveness. Transaction refers to the administrative, financial, and digital processes required to complete cross-border exchanges. This includes payment systems, documentation requirements, digital signatures, e-customs procedures, dispute resolution mechanisms, and data-sharing systems. High transaction costs measured in time, money, and administrative burden have long been a major barrier to intra-African commerce.

In conceptual terms, the 3Ts provide a diagnostic tool for understanding why supply chains struggle in Africa. Trade may be liberalized, but without efficient transport and transaction systems, firms cannot take advantage of market opportunities. Conversely, transport networks may exist, but restrictive rules of origin or cumbersome customs procedures can still deter cross-border production. The analytical power of the 3Ts lies in revealing that supply chain integration requires coordinated reforms across multiple domains rather than isolated policy interventions.

The theoretical underpinning of the AfCFTA is grounded in classical and modern theories of regional economic integration. Pioneered by Balassa (1961), integration theory outlines a progressive framework that begins with preferential trade areas and advances toward full economic union. The AfCFTA currently occupies the free trade area stage, with the long-term ambition of establishing a continental customs union and common market. Economic integration enhances welfare by enlarging markets, promoting specialization, and enabling technology diffusion across borders (Viner, 1950).

From a structuralist perspective, regional integration also serves as a mechanism for industrial transformation by correcting the external dependencies that hinder African economies. By coordinating industrial policy, African countries can jointly reduce import dependency, expand productive capacity, and promote regional self-reliance (Ajakaiye & Ncube, 2020).

Global value chain (GVC) and production network theories provide analytical lenses for understanding how AfCFTA can enhance supply chain integration. GVC theory posits that economic value is created through a sequence of interlinked production stages, often dispersed across countries but coordinated through trade, investment, and technology flows (Gereffi & Fernandez-Stark, 2016). Network theory extends this perspective by emphasizing the relational and institutional linkages that facilitate coordination, trust, and learning among participating firms and countries (Coe & Yeung, 2019).

This study adopts a qualitative, policy-oriented research design aimed at examining how the African Continental Free Trade Area (AfCFTA) can be leveraged as a strategic instrument for regional supply chain integration and enhanced competitiveness across Africa. Given the macro-structural nature of the research problem and the continent-wide scope of the AfCFTA, the study does not rely on primary data collection. Instead, it employs a structured and analytically rigorous qualitative methodology that combines narrative literature review, comparative institutional analysis, and secondary data analysis. This approach is particularly appropriate for interrogating regional trade agreements, supply chain governance, and institutional frameworks, where policy coherence, regulatory design, and structural constraints are more decisive than firm-level behavioural variables (Baldwin, 2016; Gereffi & Fernandez-Stark, 2016).

At its core, the research is conceptual but empirically informed. It seeks not to test a single causal hypothesis but to generate analytical clarity on the mechanisms through which AfCFTA provisions interact with infrastructure systems, trade facilitation regimes, institutional capacity, and productive structures to shape regional supply chain outcomes. This methodological orientation aligns with established approaches in international political economy and development studies, where qualitative synthesis and comparative reasoning are widely used to analyse complex regional integration processes (UNECA, 2020; OECD, 2021).

The study is designed as a qualitative policy analysis with a strong comparative dimension. It examines AfCFTA implementation within a broader global context by drawing lessons from established regional trade blocs, particularly the European Union (EU), the Association of Southeast Asian Nations (ASEAN), and North American regional supply chains under USMCA. These comparators were selected deliberately, as they represent distinct models of regional integration ranging from highly institutionalised supranational governance (EU) to flexible, intergovernmental coordination (ASEAN). By situating Africa's integration efforts within these global experiences, the study is able to identify transferable best practices, contextual limitations, and policy trade-offs relevant to the African political economy.

The research design is therefore exploratory and explanatory rather than predictive. It explores how supply chain integration has evolved in different regional contexts and explains why certain institutional, infrastructural, and regulatory arrangements have been more effective in supporting competitiveness. This design choice reflects the reality that AfCFTA implementation is still evolving and that rigid econometric modelling would be premature given the uneven availability of harmonised continental data (UNCTAD, 2021).

The methodological approach of the study rests on three mutually reinforcing pillars: narrative literature review, comparative institutional analysis, and secondary data analysis.

First, the study undertakes a comprehensive narrative review of academic literature, policy reports, and institutional publications relating to regional integration, global value chains, and supply chain competitiveness. Unlike systematic reviews that seek to exhaustively catalogue all available studies, the narrative approach allows for analytical synthesis and thematic interpretation, which are essential for policy-oriented research of this nature (Hart, 2018). The literature reviewed includes peer-reviewed journal articles, books, and working papers from

leading scholars on global value chains and regional integration (e.g., Baldwin, 2016; Gereffi, 2018), as well as reports from international organisations such as the United Nations Conference on Trade and Development (UNCTAD), the World Bank, the African Development Bank (AfDB), and the United Nations Economic Commission for Africa (UNECA). This combination ensures both theoretical depth and policy relevance. Through this review, the study identifies key analytical themes, including institutional readiness, trade facilitation, infrastructure connectivity, standards harmonisation, digital transformation, and productive capacity. These themes structure the subsequent analysis and guide the evaluation of AfCFTA's potential to support regional supply chains.

Second, the study employs comparative institutional analysis to examine how different regional trade arrangements have addressed similar supply chain challenges. This method focuses on institutional design, governance mechanisms, and policy coordination rather than quantitative performance indicators alone (North, 1990; Coe & Yeung, 2019). By analysing treaty frameworks, regulatory harmonisation mechanisms, and implementation practices in the EU, ASEAN, and North America, the study identifies institutional features that facilitate efficient cross-border production networks. These include mutual recognition of standards, simplified rules of origin, integrated transport corridors, and credible dispute-resolution systems. The comparative insights generated are then applied to the AfCFTA context, allowing for a nuanced assessment of what is feasible, what requires adaptation, and what may be constrained by Africa's political and developmental realities. This comparative lens is particularly valuable because it avoids treating AfCFTA as an isolated policy experiment. Instead, it situates the Agreement within a longer global history of regional integration, highlighting that successful supply chain integration is typically the result of incremental institutional learning rather than one-off treaty adoption.

Third, the study draws on secondary quantitative data to empirically ground its conceptual arguments. Data sources include trade statistics, logistics performance indicators, and industrial development metrics published by UNCTAD, the World Bank, the WTO, and the AfDB. These data are used descriptively to illustrate patterns in intra-African trade, sectoral composition, logistics costs, and comparative regional performance. Rather than conducting econometric estimations, the study uses secondary data to contextualise policy claims and avoid purely abstract reasoning. For example, statistics on Africa's low intra-regional trade share, high logistics costs, and limited manufacturing value-added are employed to substantiate arguments about structural fragmentation and competitiveness constraints (UNCTAD, 2021; AfDB, 2022). This empirical anchoring directly addresses common critiques of policy-focused studies as being overly conceptual.

While the study offers a continent-wide perspective, it acknowledges certain limitations. The absence of primary firm-level data means that micro-level behavioural dynamics are not examined in detail. However, this limitation is justified by the study's macro-institutional focus and by the current scarcity of harmonised firm-level datasets covering multiple African countries. Moreover, the study compensates for this limitation through extensive use of institutional data, sectoral illustrations, and comparative insights.

GLOBAL PERSPECTIVES ON SUPPLY CHAIN INTEGRATION AND COMPETITIVENESS

Understanding Africa's emerging position within the global economy requires situating the continent within the wider evolution of regional and international supply chains. Over the last half-century, the organisation of production has become increasingly dispersed, sophisticated, and interdependent. The rise of global value chains (GVCs), regional production networks (RPNs), and integrated logistics corridors has reshaped how manufacturing, services, innovation, and distribution unfold across the world. This chapter traces that evolution, examines comparative experiences from advanced regional blocs, and identifies best practices and treaty frameworks that carry lessons for the AfCFTA.

Evolution of Global and Regional Supply Chains

The emergence of global supply chains is rooted in several overlapping transformations in trade policy, technology, logistics, and international cooperation. During the mid-20th century, production was largely national and vertically integrated. Firms owned most stages of manufacturing and distribution, and cross-border trade consisted primarily of finished goods. By the 1970s and 1980s, however, improved transportation systems, the liberalisation of tariffs under the GATT framework, and technological advances in communication made it viable to relocate different stages of production to multiple countries. As a result, industries such as electronics, textiles, automotive manufacturing, and later pharmaceuticals shifted from national production systems to complex, geographically dispersed value chains.

The 1990s marked a turning point. Containerisation, the automation of inventory management, and the spread of information technologies significantly reduced transaction costs. At the same time, major economies in East Asia embraced export-oriented industrialisation, integrating themselves deeply into U.S. and European markets. Lead firms in Japan, South Korea, Taiwan, and later China began coordinating regional production networks that relied on suppliers scattered across multiple jurisdictions. What emerged was not merely trade in goods, but a global architecture of *tasks*, each located where it could be performed most efficiently.

Parallel to these developments, regional economic blocs began to institutionalise deeper forms of market integration. The EU consolidated its Single Market, ASEAN members progressively harmonised trade rules, and North America established integrated manufacturing corridors. In all these regions, the underpinning logic was similar: by creating predictable regulatory environments, reducing border frictions, and encouraging cross-border investment, countries could build resilient and competitive supply chains capable of competing globally. Africa's experience, by contrast, has been characterised by fragmented markets, infrastructural gaps, and inconsistent policy environments, which limited the continent's participation in the new global production landscape. The AfCFTA represents Africa's first continent-wide attempt to reverse this pattern by providing a unified framework for harmonised trade regimes, investment flows, and regional production linkages.

Global supply chains do not exist in a vacuum; they are heavily shaped by the international treaty frameworks governing trade, services, and border procedures. Three treaties, in particular, have had outsized influence on the way modern supply chains operate.

WTO Agreement on Trade Facilitation (TFA)

The TFA, which came into force in 2017, is arguably the most consequential global treaty for supply chain efficiency. It requires member states to simplify and harmonise customs procedures, adopt risk-based inspections, publish regulations transparently, and modernise border operations using digital systems. For many developing countries, the TFA has reduced the time and cost of cross-border trade, enabling firms to integrate more easily into global value chains. Efficient customs procedures have become just as important as tariff reductions, especially in regions where perishable goods, automotive components, and electronics circulate frequently.

General Agreement on Tariffs and Trade (GATT 1994)

GATT forms the historical backbone of modern international trade law. By reducing tariffs, disciplining quantitative restrictions, and promoting non-discrimination, GATT created the foundations on which global supply chains could expand. Although conceived before the rise of complex value chains, its principles especially most-favoured-nation (MFN) and national treatment continue to shape production decisions, investment patterns, and cross-border sourcing strategies.

General Agreement on Trade in Services (GATS)

Services are indispensable to supply chain coordination from logistics and finance to telecommunications and distribution. GATS provides the rules governing access to foreign service markets. As supply chains become more digitised and service-intensive, GATS plays a central role in guaranteeing fair treatment for transport providers, IT service firms, and financial institutions that operate across borders.

Comparative Experiences from Other Regional Trade Blocs

For Africa to leverage the AfCFTA effectively, it is essential to understand how other regions have built integrated supply chains. The experiences of the EU, ASEAN, and North America reveal the institutional, infrastructural, and treaty-based foundations needed for competitive regional production systems.

European Union (EU) Single Market Integration

Europe's Single Market remains the most advanced experiment in regional integration and arguably the strongest example of successful supply chain coordination. The integration of markets across 27 countries, with harmonised regulations, common standards, and free movement of goods, services, capital, and labour, has enabled the EU to build globally competitive production networks. Industries such as aerospace, automotive manufacturing, pharmaceuticals, and renewable energy operate on cross-border supply chains that spread across several member states. Despite differences in development levels, the EU managed to align technical standards, coordinate investment policies, and create sophisticated logistics corridors. The Schengen Area's removal of internal borders greatly enhanced mobility for labour and transport, reducing friction in the movement of intermediate goods. Over time, the EU Single Market created a competitive environment in which firms could scale production, specialise, and innovate within a unified regulatory space.

Treaties

The EU's success is anchored in several foundational treaties:

- **Treaty on the Functioning of the European Union (TFEU):** This treaty provides the legal foundation for the EU Single Market by defining rules for competition, customs cooperation, transport policy, and the free movement of goods and services.
- **Treaty on European Union (TEU):** The TEU articulates the political and institutional vision of the EU. It reinforces commitments to cohesion, integration, and institutional cooperation, which underpin the functioning of supply chains across the region.
- **Schengen Agreement:** Originally separate but now incorporated into the EU legal framework, the Schengen Agreement eliminated internal border controls among participating states. For supply chains, this meant significantly lower transport costs, quicker delivery times, and a logistical environment conducive to integrated manufacturing.

ASEAN and East Asian Production Networks

East Asia offers one of the most dynamic examples of regional supply chain evolution. Unlike the EU, ASEAN countries pursue a more flexible, intergovernmental model of cooperation, yet they have built production networks that rival those of Europe and North America. Japan, South Korea, Taiwan, China, and ASEAN members specialise in different stages of production from component manufacturing to assembly and distribution.

East Asia's growth has been driven by three factors: openness to foreign direct investment, development of efficient logistics infrastructure, and strong emphasis on export-oriented industrialisation. Lead firms in electronics, automotive manufacturing, and machinery rely on tightly coordinated supplier networks spread

across multiple countries. These networks are supported by harmonised rules of origin, streamlined customs procedures, and deep investment flows.

Treaties

ASEAN's supply chain success rests on several essential treaties:

- **ASEAN Charter:** The Charter formalised ASEAN's institutional framework, setting common objectives for economic cooperation, trade liberalisation, and regional production integration.
- **ASEAN Trade in Goods Agreement (ATIGA):** ATIGA, adopted in 2010, reduces tariffs, streamlines customs procedures, and sets out common rules of origin. It provides the operational foundation for cross-border production in electronics, automotive components, and agricultural goods.
- **Regional Comprehensive Economic Partnership (RCEP):** RCEP, which includes ASEAN states and six major Asia-Pacific economies, is the world's largest trade agreement. It harmonises rules of origin across the region, making it significantly easier for firms to source inputs from multiple countries and still qualify for preferential treatment. This is a major boost for the efficiency of East Asian supply chains.

North American Regional Supply Chains (USMCA)

North America has developed one of the most tightly integrated manufacturing environments globally, especially in the automotive, aerospace, and agricultural sectors. Production is often split across the three countries: design and advanced components in the United States, manufacturing and mid-level assembly in Mexico, and specialised processes or high-value services in Canada. This trilateral arrangement relies heavily on predictable trade rules, efficient border crossings, and harmonised standards.

The region's competitive advantage rests on proximity, infrastructure quality, and decades of investment in cross-border production corridors. For example, automotive manufacturing often involves components crossing borders eight or more times before final assembly. Such a system is only viable within a stable and harmonised regulatory environment. USMCA replaced NAFTA in 2020. It updates rules of origin, strengthens labour and environmental provisions, and modernises digital trade rules. USMCA maintains the core benefits of North American integration while adapting supply chain governance to contemporary realities such as e-commerce, data flows, and technology transfer.

Global Best Practices and Lessons for Africa

A comparative analysis of the European, East Asian, and North American regional experiences reveals several transferable lessons that Africa can adopt under the AfCFTA framework. First, infrastructure connectivity (both physical and digital) is the cornerstone of integrated supply chains. As seen in ASEAN and East Asia, investments in ports, railways, and digital logistics platforms enable cross-border trade to function seamlessly. Without comparable infrastructure, even the most ambitious trade liberalization measures remain underutilized (UNCTAD, 2021).

Second, regulatory harmonization and mutual recognition frameworks are critical for reducing non-tariff barriers. Africa's diversity of customs procedures, product standards, and trade documentation can significantly impede intra-continental trade. Lessons from the EU's Single Market and ASEAN's standards harmonization efforts show that convergence mechanisms can create predictability and foster trust among trading partners (UNECA, 2020).

Third, industrial clustering and specialization should be promoted to enhance productivity and regional competitiveness. The East Asian model demonstrates that regional supply chains thrive when countries specialize based on their relative strengths within a vertically integrated production system. For example,

Malaysia's electronics sector complements Singapore's high-tech R&D capacity, illustrating how differentiated competencies can produce collective gains.

Fourth, institutional coherence and political will are indispensable. Effective governance, transparent enforcement of trade rules, and efficient dispute resolution systems are vital for sustaining private sector confidence and long-term investments. The USMCA's dispute resolution mechanisms and ASEAN's incremental consensus model both emphasize that durable integration depends on stable and credible institutions.

Lastly, digital transformation and green logistics are emerging as key determinants of competitiveness in modern supply chains. Africa's ability to leverage digital trade platforms, e-customs systems, and renewable energy logistics will determine how effectively it integrates into global value chains (World Bank, 2022).

THE AFCFTA AND AFRICA'S REGIONAL SUPPLY CHAIN LANDSCAPE

AfCFTA Structure, Goals, and Implementation Status

The African Continental Free Trade Area (AfCFTA) represents a watershed in Africa's economic history, marking the most ambitious effort to unify the continent under a single trade and investment framework since the formation of the African Union (AU). Officially launched in 2021, the AfCFTA brings together 54 of Africa's 55 countries, creating a market of over 1.3 billion people and a combined GDP of more than \$3.4 trillion (World Bank, 2020). Its overarching goal is to accelerate intra-African trade, stimulate industrialization, and strengthen Africa's bargaining position within global value chains.

The AfCFTA Agreement is structured around several key protocols, including Trade in Goods, Trade in Services, Investment, Competition Policy, Intellectual Property Rights, and Digital Trade; the last being negotiated as part of the Agreement's Phase II and III components (UNECA, 2022). The Trade in Goods Protocol provides for progressive elimination of tariffs on at least 90% of goods, complemented by commitments on rules of origin, customs cooperation, and trade facilitation. Meanwhile, the Trade in Services Protocol seeks to liberalize five priority sectors, business, communications, financial, transport, and tourism services (AU, 2018).

Implementation has advanced unevenly but steadily. By 2023, more than 44 countries had submitted their tariff offers, and pilot trade under the AfCFTA's Guided Trade Initiative (GTI) had commenced, involving small-scale cross-border exchanges among seven pioneer states. Despite logistical and institutional challenges, this initiative signaled the operationalization of the AfCFTA beyond mere policy declaration (Tralac, 2023).

Core AfCFTA Treaties and Protocols

The AfCFTA's institutional strength derives from its extensive treaty framework, which outlines rights, obligations, dispute settlement procedures, and sector-specific commitments.

1. Agreement Establishing the AfCFTA

This foundational treaty sets out the objectives, institutional arrangements, and implementation modalities of the AfCFTA. It defines the scope of cooperation and forms the legal basis for all subsequent protocols. Article 3 of the Agreement identifies key goals, including the creation of a single market, the promotion of sustainable and inclusive socio-economic development, and the expansion of intra-African trade through the reduction of tariff and non-tariff barriers.

2. Protocol on Trade in Goods

This protocol governs the movement of goods across the continent. It sets the framework for tariff liberalisation, rules of origin, customs cooperation, transit, trade facilitation, and non-tariff barrier elimination. In practical

terms, the protocol is critical for supply chains because it establishes predictable conditions for sourcing inputs, transporting goods across borders, and ensuring that products meet continental standards.

3. Protocol on Trade in Services

Modern supply chains rely heavily on services including logistics, finance, telecommunications, and business services. This protocol provides market-access commitments and national treatment obligations that allow service providers to operate more freely across the continent. It also introduces disciplines intended to enhance regulatory transparency and promote the development of competitive services markets.

4. Protocol on Investment

The Investment Protocol seeks to harmonise investment rules and provide predictable environments that attract cross-border capital. It focuses on investor protection, facilitation, and dispute settlement, while encouraging sustainable and responsible investment. This protocol is expected to play a central role in shaping regional manufacturing clusters, as investment decisions hinge on regulatory certainty.

5. Protocol on Digital Trade

Adopted in 2024, the Digital Trade Protocol recognises that digitalisation has become integral to supply chain efficiency. It addresses issues such as cross-border data flows, cybersecurity, digital payments, e-commerce regulations, and consumer protection in the digital marketplace. For Africa, where digital systems remain uneven, the protocol provides a framework for leapfrogging traditional infrastructural constraints.

6. Protocol on Rules and Procedures for Dispute Settlement

A functioning dispute settlement mechanism is essential for supply chain confidence. This protocol establishes a continental system resembling the WTO's model, enabling states to resolve trade disputes through consultations, panels, and appellate review. Predictability in dispute resolution is especially important for investors and firms coordinating multi-country production.

Current State of Intra-African Trade and Industrial Linkages

Despite Africa's rich endowment of natural and human resources, intra-African trade remains relatively low, averaging around 15% of the continent's total trade compared to 60% in Europe and 50% in Asia (UNCTAD, 2021). This limited integration reflects a structural dependence on external markets, with most African exports consisting of raw commodities and unprocessed materials. The consequence is a fragmented production base with minimal inter-country industrial linkages.

Regional Economic Communities (RECs) such as ECOWAS, SADC, COMESA, and EAC have achieved moderate success in promoting regional trade integration, but overlapping memberships and policy inconsistencies have constrained their effectiveness. The lack of infrastructure connectivity, roads, railways, and energy networks further hinders the movement of goods, services, and production inputs (UNECA, 2020).

In industrial terms, African economies have not yet fully transitioned into regional manufacturing ecosystems comparable to East Asia's production networks. Most industries operate on a national rather than regional scale, leading to duplication, inefficiency, and limited specialization. However, a few promising developments have emerged, such as automotive and textile value chains in Southern and North Africa, and pharmaceutical manufacturing clusters in West Africa.

The current landscape thus presents both a challenge and an opportunity: while structural fragmentation persists, the AfCFTA offers the institutional mechanism to consolidate disparate regional markets into an integrated continental economy that supports industrial interlinkages and cross-border production (IMF, 2022).

General African Integration Treaties

Africa's efforts under the AfCFTA are part of a longer historical trajectory of continental integration initiatives. Two foundational treaties are particularly relevant.

1. Abuja Treaty (African Economic Community)

Signed in 1991, the Abuja Treaty lays out a roadmap for establishing an African Economic Community through six stages of integration, including the strengthening of Regional Economic Communities (RECs), establishing a continental customs union, and ultimately creating a common market. The treaty emphasises industrial cooperation, trade liberalisation, and infrastructure development principles that later informed the AfCFTA.

2. Constitutive Act of the African Union

The Constitutive Act, adopted in 2000, provides the institutional foundation for the African Union (AU). It reinforces commitments to economic integration, development cooperation, and the harmonisation of policies across member states. The Act also underscores the AU's mandate to coordinate continental trade initiatives, making it central to the political legitimacy of the AfCFTA.

Emerging Regional Value Chains in Africa

Africa's manufacturing sector is gradually undergoing structural transformation, with regional production hubs emerging in selected economies. South Africa, Egypt, Morocco, and Kenya have established themselves as industrial anchors, each specializing in particular industries such as automotive assembly, fertilizers, cement, and fast-moving consumer goods (UNIDO, 2022). For example, Morocco's automotive industry has become the largest in Africa, driven by investment from global firms like Renault and Stellantis. Its success is attributed to targeted industrial policies, free zones, and regional trade agreements that facilitate backward and forward linkages (OECD, 2021). Similarly, Ethiopia's industrial parks such as Hawassa and Bole Lemi, have created cross-border textile and apparel linkages, sourcing raw materials from neighboring countries while exporting finished products to international markets. These hubs indicate that industrial clustering, supported by coordinated trade and investment policies, can catalyze the formation of regional manufacturing value chains. The AfCFTA provides the regulatory foundation for scaling such clusters across borders through harmonized rules of origin and liberalized investment frameworks.

Agriculture remains Africa's largest economic sector, employing over 60% of the workforce and contributing approximately 23% of GDP (FAO, 2021). Yet, its value chains are largely disjointed and export-oriented, with minimal intra-African processing or trade in intermediate agricultural goods. The AfCFTA could transform this by incentivizing regional agro-industrial corridors that integrate farmers, processors, and distributors across borders. For instance, the Abidjan–Lagos Corridor has shown potential for regional agribusiness cooperation, linking coastal economies through logistics infrastructure and market access. The development of regional processing zones for commodities such as cocoa, palm oil, and cashew nuts could enable value addition within Africa before export, boosting incomes and competitiveness (AfDB, 2022). Moreover, the liberalization of agricultural inputs and services, such as fertilizers, machinery, and extension services, could promote efficiency and innovation. With climate change intensifying production risks, cross-border coordination in climate-smart agriculture and agritech services will become increasingly vital.

The services and digital sectors are emerging as the most dynamic components of Africa's new value chains. Logistics, finance, telecommunications, and digital trade platforms are enabling new modes of production and

distribution that transcend traditional barriers. According to the World Bank (2022), services already account for over 50% of Africa's GDP and are growing faster than goods trade. The rise of e-commerce platforms such as Jumia, Kobo360, and TradeDepot demonstrates how technology can bridge supply chain inefficiencies by linking producers, retailers, and consumers across multiple countries. Similarly, fintech innovations in countries like Nigeria and Kenya have reduced transaction costs, improved payment systems, and facilitated cross-border commerce. The AfCFTA's forthcoming Protocol on Digital Trade aims to institutionalize these developments by harmonizing digital taxation, cybersecurity, and data governance frameworks. Such measures will support the integration of logistics and service networks essential for 21st-century supply chain competitiveness (UNECA, 2023).

REC Treaties Supporting Regional Supply Chains

Regional Economic Communities (RECs) have long served as building blocks of continental integration. Several REC treaties contain provisions that directly support the development of regional supply chains.

1. ECOWAS Revised Treaty (1993)

The ECOWAS Treaty promotes the free movement of goods, persons, and capital across West Africa. It establishes a customs union, sets common external tariff schedules, and encourages industrial cooperation among member states. ECOWAS has been particularly active in harmonising standards and improving regional infrastructure.

2. Southern African Development Community (SADC) Treaty (1992)

The SADC Treaty focuses on economic integration, industrialisation, and infrastructural development. SADC's Protocol on Trade, implemented in the 2000s, has fostered tariff liberalisation and facilitated cross-border production, particularly in the automotive and mining sectors.

3. East African Community (EAC) Treaty (1999)

The EAC is one of Africa's most advanced integration blocs. With a customs union, common market provisions, and ongoing discussions on monetary union, the EAC has established an enabling environment for regional value chains in agriculture, textiles, and light manufacturing. The EAC's commitment to regulatory harmonisation has reduced logistical and administrative burdens for firms.

Opportunities Presented by AfCFTA for Supply Chain Integration

The AfCFTA offers several strategic opportunities to reconfigure Africa's production and trade architecture. First, by reducing tariffs and non-tariff barriers, it enables firms to source inputs regionally, thereby lowering costs and diversifying supply risks. Second, its rules of origin provisions encourage local content development, fostering industrial upgrading and technology transfer. Third, the AfCFTA's investment protocol can attract intra-African and foreign investors seeking scale and stability in a unified market (Songwe & Moyo, 2022).

Moreover, the Agreement supports the creation of regional value chains in sectors such as pharmaceuticals, automotive components, and renewable energy, where African economies can specialize and integrate vertically. The establishment of the Pan-African Payment and Settlement System (PAPSS) further enhances trade efficiency by reducing dependence on foreign currencies and facilitating faster cross-border payments.

Finally, the AfCFTA's potential lies not merely in trade expansion but in its ability to stimulate structural transformation, to shift Africa from a consumption-driven to a production-based economy. With appropriate infrastructure investment, human capital development, and institutional reforms, the AfCFTA could transform Africa into a competitive and resilient regional supply base.

STRATEGIC PATHWAYS FOR LEVERAGING AfCFTA TO ENHANCE REGIONAL COMPETITIVENESS

Realizing the full potential of the African Continental Free Trade Area (AfCFTA) depends on translating its ambitious objectives into concrete actions that can strengthen Africa's regional competitiveness and industrial base. While the AfCFTA provides the institutional framework for a unified continental market, success will rely on a set of interlinked strategic pathways encompassing policy harmonization, infrastructure development, digital transformation, innovative financing, and resilience-building mechanisms. These pathways are mutually reinforcing and collectively form the foundation of Africa's integration into regional and global value chains.

Policy Harmonization and Trade Facilitation Mechanisms

Policy harmonization lies at the heart of any functional regional integration process. Across Africa, overlapping regional economic communities (RECs) have generated multiple regulatory regimes, diverse tariff schedules, and inconsistent standards that often constrain the seamless flow of goods and services. For the AfCFTA to be transformative, it must consolidate and align these fragmented policy landscapes into a coherent continental framework (UNECA, 2022). The implementation of mutual recognition agreements (MRAs) for standards, certifications, and customs procedures can reduce transaction costs and facilitate cross-border trade. The establishment of one-stop border posts, as successfully demonstrated between Kenya and Uganda at the Busia and Malaba borders, has reduced clearance times by up to 70% (World Bank, 2021). Extending such trade facilitation models across the continent could significantly enhance regional supply chain efficiency.

Equally critical is the harmonization of investment, competition, and intellectual property policies, which will foster a predictable business environment. Fragmented policies often deter investors who must navigate inconsistent rules across multiple jurisdictions. The AfCFTA's Protocols on Competition Policy and Investment, currently being operationalized, provide a framework for transparency, investor protection, and fair market competition (African Union, 2023). Furthermore, efficient customs digitization and risk management systems can modernize trade operations. Countries such as Rwanda and Mauritius have pioneered paperless customs systems, which reduce bureaucratic delays and enhance compliance. Adopting similar digital solutions continent-wide under AfCFTA coordination would be a major step toward a truly integrated trade facilitation regime.

Infrastructure Connectivity and Logistics Optimization

Africa's competitiveness is inseparable from its physical and digital infrastructure. Inadequate transport corridors, unreliable power supply, and inefficient ports collectively account for some of the highest logistics costs in the world estimated at 30% to 40% higher than global averages (African Development Bank [AfDB], 2022). Without addressing these deficits, regional supply chains cannot function efficiently. Infrastructure connectivity must therefore become the backbone of AfCFTA implementation. Priority investments in transcontinental road and rail networks, such as the Lagos–Abidjan Corridor, the Trans-African Highway, and the Lamu Port–South Sudan–Ethiopia Transport (LAPSSET) Corridor, are vital for linking production centers to regional markets. Similarly, modernization of seaports in Mombasa, Durban, and Tema, along with inland dry ports in landlocked countries, will facilitate multimodal logistics integration (UNCTAD, 2021).

Energy and telecommunications infrastructure are equally essential. Reliable electricity supply and affordable broadband access underpin industrial productivity and digital trade. Initiatives like the Programme for Infrastructure Development in Africa (PIDA) and the Africa Power Vision offer regional frameworks that can be aligned with AfCFTA priorities to ensure coordinated investment and maintenance. Improving logistics optimization also requires adopting advanced supply chain management tools. The deployment of real-time data analytics, satellite tracking, and predictive logistics systems can enhance visibility and reduce inefficiencies in cargo movement. Developing regional logistics service providers (3PLs and 4PLs) with continental reach will further strengthen Africa's position as a cohesive production hub.

Digital Transformation and Smart Supply Chains

In the twenty-first century, digital transformation is the most critical enabler of competitive regional supply chains. Africa's digital economy is expanding rapidly, with e-commerce, fintech, and logistics platforms reshaping traditional trade patterns. According to the World Bank (2022), digital trade could contribute over \$180 billion to Africa's GDP by 2025 if properly leveraged. The AfCFTA's forthcoming Protocol on Digital Trade presents an opportunity to institutionalize the digital transformation agenda. It aims to harmonize data governance, digital taxation, e-signatures, and cybersecurity frameworks, creating the foundation for cross-border digital interoperability (UNECA, 2023). Such harmonization will enable the growth of smart supply chains, characterized by real-time tracking, automation, and blockchain-enabled transparency.

For instance, blockchain applications in supply chains can improve traceability in agricultural exports, ensuring compliance with international quality standards and reducing fraud. Similarly, the adoption of artificial intelligence (AI) for demand forecasting and Internet of Things (IoT) devices for asset monitoring can enhance efficiency and reduce wastage. Moreover, digital platforms such as TradeDepot, Kobo360, and Twiga Foods have already demonstrated Africa's capacity for innovation in logistics and market integration. These firms connect farmers, distributors, and retailers through cloud-based systems that minimize friction and improve coordination. Encouraging public-private partnerships (PPPs) to scale such solutions across the continent can accelerate the AfCFTA's objectives of inclusion and competitiveness. To fully benefit from digital transformation, Africa must bridge the digital divide through investments in broadband infrastructure, affordable devices, and digital literacy. Without such foundations, smart supply chains may exacerbate inequality rather than promote inclusive growth (OECD, 2021).

Financing Regional Supply Chain Development

Access to adequate and sustainable financing remains one of the greatest constraints to Africa's regional integration and industrial development. The scale of investment required to upgrade infrastructure, expand manufacturing capacity, and deploy new technologies is immense estimated at over \$150 billion annually (AfDB, 2022). To close this gap, a multipronged financing strategy is essential. Development finance institutions (DFIs) such as the AfDB, the Africa Finance Corporation (AFC), and the Trade and Development Bank (TDB) play a pivotal role in mobilizing long-term capital for regional projects. In addition, sovereign wealth funds, pension funds, and green bonds can provide alternative sources of financing for supply chain infrastructure and industrial corridors.

The Pan-African Payment and Settlement System (PAPSS) also enhances financial integration by enabling cross-border payments in local currencies, reducing reliance on foreign exchange and lowering transaction costs (African Export-Import Bank, 2022). This innovation supports small and medium enterprises (SMEs) that often struggle to access foreign currency for regional transactions. Public-private partnerships (PPPs) must also be leveraged more effectively. Governments can de-risk large infrastructure projects through guarantees and co-financing mechanisms that attract private capital. Additionally, regional development banks could issue infrastructure bonds backed by AfCFTA member states to fund priority corridors and industrial clusters.

Building Resilient and Sustainable Supply Chains

The COVID-19 pandemic, global geopolitical disruptions, and climate change have revealed the fragility of global supply networks. For Africa, building resilient and sustainable regional supply chains under the AfCFTA requires rethinking both structural and environmental vulnerabilities. Resilience begins with diversification. African economies must reduce dependence on a narrow range of exports and suppliers by developing regional production networks capable of absorbing shocks. This involves relocating critical industries, such as pharmaceuticals, fertilizers, and food processing, to ensure continuity during global disruptions (World Bank, 2022).

Sustainability, on the other hand, demands that industrialization be aligned with environmental, social, and governance (ESG) principles. Africa's manufacturing growth should prioritize renewable energy adoption, resource efficiency, and low-carbon logistics. The AfCFTA can integrate sustainability standards into its regulatory framework by promoting green supply chain initiatives and carbon border adjustment measures that encourage cleaner production (UNIDO, 2022). Furthermore, capacity-building for risk management and adaptive planning will be essential. Establishing regional centers for supply chain analytics and forecasting can enhance preparedness for disruptions. Likewise, expanding insurance instruments such as trade credit insurance and catastrophe bonds can protect businesses from unforeseen shocks. Importantly, Africa's supply chain resilience must also be inclusive, ensuring participation by SMEs, women, and youth entrepreneurs. Supporting local innovation ecosystems, start-ups, and clusters around regional logistics hubs will foster distributed resilience rather than concentration in a few dominant economies.

The 3Ts in Trade (Trade, Transport, and Transaction) for Effective AfCFTA Supply Chain Performance

A critical determinant of whether the African Continental Free Trade Area (AfCFTA) can deliver on its promise of building competitive regional supply chains is the operational strength of what development economists increasingly refer to as the "3Ts"-Trade, Transport, and Transaction. Although referenced frequently in policy circles, the 3Ts framework provides a deeper analytical lens through which to assess Africa's readiness to support integrated value chains capable of competing globally. In essence, the 3Ts capture the institutional, infrastructural, and administrative foundations that allow goods, services, information, and capital to move across borders with efficiency, predictability, and minimal friction. Without these pillars functioning seamlessly, regional integration remains aspirational rather than transformative. This section explores the logic of the 3Ts in detail, emphasizing how they shape supply chain performance under the AfCFTA and the specific reforms required to unlock the continent's production potential.

The first pillar, *Trade* remains central to the AfCFTA's broader ambitions. Trade, in this context, extends beyond tariff liberalization to include the regulatory ecosystem that governs cross-border commerce. At the heart of the AfCFTA's Trade pillar are tariff schedules, rules of origin, mutual recognition of standards, customs cooperation, and trade facilitation commitments. While the Agreement's mandate for the progressive elimination of tariffs on 90% of goods is significant, global experience demonstrates that tariff reduction alone cannot stimulate supply chain integration unless supported by predictable regulations that lower uncertainty for firms (Baldwin, 2016).

In many African economies, diverse regulatory regimes, overlapping trade blocs, and inconsistent customs procedures have historically imposed high trade costs, making intra-African trade more difficult than extra-African trade (UNECA, 2020). For supply chains, such fragmentation disrupts the sourcing of inputs, weakens regional specialization, and increases production costs. Under the AfCFTA, therefore, the harmonization of product standards, the simplification of customs documentation, and the establishment of continent-wide rules of origin become indispensable. Rules of origin, in particular, hold enormous implications for regional industrialization. When clearly defined, consistently applied, and simple to comply with, they encourage firms to source inputs within Africa, strengthening backward and forward linkages. In contrast, restrictive or ambiguous rules undermine the very logic of regional manufacturing integration.

Furthermore, the AfCFTA's Protocol on Trade in Services contributes to supply chain efficiency by liberalizing key enabling sectors such as finance, transport, telecommunications, and logistics. These services are integral to production and distribution processes and can significantly reduce structural costs when opened to regional competition (World Bank, 2020). Seen in this light, the Trade pillar of the 3Ts is not an isolated policy variable but the strategic anchor that shapes the incentives, rules, and institutional coherence necessary for AfCFTA-driven supply chains to emerge.

The second pillar, *Transport*, is arguably the most visible bottleneck affecting supply chain performance across Africa. Transport refers to the physical infrastructure and logistics systems that enable the movement of goods,

people, and services within and across borders. Effective transport systems reduce the cost of moving inputs, accelerate delivery times, expand market reach, and improve production reliability. Conversely, poor transport networks increase inventory costs, discourage investment, and make regional manufacturing uncompetitive relative to global suppliers (AfDB, 2022).

Africa's transport landscape remains highly uneven. While some countries have modernized seaports, airports, and rail systems, the majority struggle with dilapidated roads, congested ports, inefficient border stations, and limited multimodal connectivity. According to the African Development Bank, logistics costs in Africa remain among the highest in the world, up to 40% more expensive than in other developing regions which significantly undermines the competitiveness of African firms attempting to participate in regional or global value chains. For the AfCFTA to function as a platform for synchronized production networks, these infrastructural constraints must be addressed comprehensively.

Transport integration under the AfCFTA requires more than new roads or ports; it demands corridor-based planning that recognizes the cross-border nature of modern supply chains. Corridors such as the Abidjan–Lagos coastal route, the Northern Corridor linking East Africa to the Great Lakes region, and the Maputo Development Corridor in Southern Africa serve as critical arteries for moving goods across multiple countries. However, many of these corridors suffer from inconsistent maintenance, lengthy border delays, and fragmented regulatory regimes. Establishing harmonized axle load limits, synchronized border controls, coordinated transport regulations, and joint infrastructure investments are essential steps for improving corridor efficiency.

Equally important is the modernization of logistics systems through digital innovations. Platforms for real-time cargo tracking, integrated transport management systems, and harmonized port community systems can reduce delays, enhance visibility, and strengthen trust between supply chain actors. The expansion of regional aviation networks, cold-chain logistics for agriculture, and rail modernization projects such as the Standard Gauge Railway in East Africa also hold great potential for lowering transport costs and increasing the reliability of supply chains.

The third pillar, *Transaction*, is often the least visible yet the most influential factor shaping supply chain performance. Transaction refers to the administrative, regulatory, and financial interactions required to complete cross-border exchanges. These include customs procedures, documentary requirements, digital signatures, inspection systems, payment mechanisms, and dispute resolution processes. High transaction costs—whether measured in time, money, or administrative complexity—have historically constrained African supply chains more severely than tariffs (Hartzenberg, 2021).

In many African economies, firms experience long clearance times, unpredictable documentation demands, inconsistent enforcement of standards, and difficulties accessing foreign exchange. These challenges create delays, raise uncertainty, and deter regional investment. The AfCFTA seeks to address these bottlenecks by promoting digital trade facilitation, customs automation, and paperless processes. One of the most significant innovations in this regard is the Pan-African Payment and Settlement System (PAPSS), designed to enable instant, cross-border payments in local currencies. PAPSS reduces reliance on third-party currencies, lowers transaction costs, and accelerates the speed at which firms can settle trade obligations.

Digital integration also plays a major role in strengthening the Transaction pillar. Electronic certificates of origin, single-window customs systems, blockchain-enabled verification of documents, and harmonized digital standards can drastically reduce the bureaucratic burden on firms. Countries such as Rwanda, Mauritius, and Kenya have pioneered digital customs systems that have reduced clearance times from days to hours. Scaling such innovations across the continent would transform the administrative environment in which African supply chains operate.

Furthermore, dispute resolution mechanisms and regulatory predictability form an essential part of the Transaction environment. When firms have confidence in the consistency of regulations, the transparency of

enforcement, and the fairness of administrative procedures, they are more likely to invest in regional production. Strengthening institutions, customs agencies, standards bodies, competition authorities, and cross-border inspection units is therefore a core requirement for operationalizing the AfCFTA.

Although each pillar of the 3Ts framework has independent significance, their true value emerges from their interdependence. Trade liberalization cannot stimulate regional manufacturing if transport systems remain inefficient. Transport upgrades cannot attract investment if transaction costs remain high. Transaction reforms cannot achieve scale without harmonized trade policies and predictable market rules. The success of the AfCFTA therefore rests on a synchronized approach that treats the 3Ts as complementary pillars rather than standalone interventions.

In practical terms, this means aligning tariff schedules with corridor development plans; coordinating customs modernization with digital payment platforms; linking investment promotion initiatives to logistics hubs; and integrating service sector liberalization with manufacturing and agriculture strategies. When implemented collectively, the 3Ts form the operational backbone of competitive supply chains and enable African firms to operate with the speed, reliability, and cost efficiency required in modern production networks.

POLICY INSIGHTS AND STRATEGIC RECOMMENDATIONS

The implementation of the African Continental Free Trade Area (AfCFTA) presents a rare opportunity to reposition Africa within regional and global production systems. However, achieving meaningful supply chain integration requires deliberate policy coordination and institutional reform across member states. Several strategic insights emerge from the preceding analysis.

First, regulatory coherence remains central to the AfCFTA's success. Persistent differences in standards, customs procedures, product regulations, and investment rules continue to raise transaction costs and limit cross-border industrial cooperation. Member states must therefore strengthen the alignment of national laws with AfCFTA protocols, expand mutual recognition arrangements, and support the development of continent-wide model regulations, especially in digital trade, transport, and competition policy.

Second, infrastructure and logistics modernisation is indispensable. Africa's high transport and logistics costs continue to undermine its competitiveness. Priority should be given to regional transport corridors, improved border management systems, multimodal logistics platforms, and digital infrastructure. Coordinated regional investment supported through PPPs and continental development finance will be critical for lowering costs and improving supply chain reliability.

Third, industrial cooperation and regional specialization must guide production planning. Instead of fragmented national strategies, African economies should identify complementary strengths and develop regional manufacturing hubs. Coordinated policies in automotive assembly, pharmaceuticals, agro-processing, and digital services can foster deeper regional value chains and create economies of scale.

Fourth, trade facilitation and customs modernization must accelerate. The adoption of digital customs systems, single-window platforms, risk-based inspections, and electronic certificates of origin will significantly reduce delays and enhance predictability for firms operating across borders.

Finally, strengthening the transaction environment, including payment systems and administrative processes, is essential. The Pan-African Payment and Settlement System (PAPSS), if fully integrated, will reduce reliance on foreign currencies and improve liquidity for intra-African trade. Complementary reforms such as digital signatures, e-invoicing, and transparent dispute-resolution mechanisms will further ease cross-border business operations.

CONCLUSION

The African Continental Free Trade Area (AfCFTA) represents a pivotal moment in Africa's long pursuit of economic integration and structural transformation. While the Agreement has generated considerable optimism, its real significance lies in its ability to support the emergence of connected, competitive, and resilient regional supply chains. The analysis in this paper shows that tariff reduction alone will not deliver this outcome. Instead, progress depends on the continent's capacity to strengthen the broader ecosystem in which trade occurs, harmonized regulations, efficient transport networks, predictable administrative systems, and coherent industrial strategies. A recurring theme across global and African experiences is that regional supply chains flourish only where governments commit to coordinated investment, modern logistics, and policy alignment. The AfCFTA provides the institutional framework for such cooperation, but implementation will determine its success. By operationalizing the 3Ts (Trade, Transport, and Transaction), Africa can reduce longstanding structural barriers, support regional specialization, and expand the participation of firms, including SMEs, in cross-border production. The AfCFTA's promise is not simply to increase trade volumes but to reshape the continent's economic landscape. If supported by sustained political will, targeted reforms, and inclusive capacity development, the Agreement can help Africa transition from fragmented markets to a coherent production space capable of competing globally. The task ahead is demanding, but the potential gains in productivity, employment, innovation, and continental self-reliance make the effort indispensable.

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