

STAGED MODEL OF STATE EVOLUTION WITHIN THE INTERNATIONAL DIVISION OF LABOR, THE CHINA CASE

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The article describes the lack of a dynamic model that explains the transition of national economies between different modes of participation in the global production system. Drawing on the theories of global value chains and production networks, the author proposes a three-stage evolutionary model: integration, consolidation, and architectural influence. The model is developed through theoretical synthesis and empirically grounded in the case of China, whose development trajectory from 1978 to the present sequentially illustrates the transition through all three stages. To validate the model, the article employs econometric analysis of time-series and panel data for the world's ten largest economies over the period 2001–2024. Regression results confirm that R&D intensity, domestic market scale, and export market diversification are the key drivers of progression toward the architect stage. The most robust finding is the negative relationship between export concentration and export sophistication. The proposed approach has analytical value for researchers and practical significance for developing economic policies in the context of increasing competition for the architecture of international production.

Keywords: global value chains, global production networks, economic development, industrial policy, international trade, structural transformation, China's economic development

ПОЭТАПНАЯ МОДЕЛЬ ЭВОЛЮЦИИ ГОСУДАРСТВА В СИСТЕМЕ МЕЖДУНАРОДНОГО РАЗДЕЛЕНИЯ ТРУДА НА ПРИМЕРЕ КИТАЯ

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В статье рассматривается проблема отсутствия динамической модели, объясняющей переход национальных экономик между различными режимами участия в глобальной системе производства. Опираясь на теории глобальных цепочек создания стоимости и глобальных производственных сетей, автор предлагает трёхэтапную модель эволюции, включающую этапы интеграции, укрепления и архитектурного влияния. Модель разработана на основе теоретического синтеза и эмпирически обоснована на примере Китая, чья траектория развития с 1978 года по настоящее время последовательно иллюстрирует переход через все три этапа. Для верификации модели используется эконометрический анализ временных рядов и панельных данных по десяти крупнейшим экономикам мира за период 2001–2024 годов. Результаты регрессионного анализа подтверждают, что ключевыми драйверами перехода к архитектурной стадии выступают интенсивность НИОКР, масштаб внутреннего рынка и диверсификация экспортных рынков. Наиболее устойчивая закономерность – отрицательная связь между концентрацией экспортных направлений и уровнем экспортной сложности. Предложенный подход обладает аналитической ценностью для исследователей и практической значимостью для разработки экономической политики в условиях усиливающейся конкуренции за архитектуру международного производства.

Ключевые слова: глобальные цепочки создания стоимости, глобальные производственные сети, экономическое развитие, промышленная политика, международная торговля, структурная трансформация, экономическое развитие Китая

Introduction

For more than three decades, scholarly understanding of the global economy’s organization has been profoundly shaped by the Global Value Chain (GVC) basis. Pioneered by Gereffi and Korzeniewicz¹, this approach successfully mapped the fragmentation of production across national borders and provided a vocabulary for discussing governance and upgrading within linear sequences of value addition. Its successor, the Global Production Network (GPN) conception developed by Henderson and colleagues², enriched this analysis by emphasizing multidirectional flows, complex interdependencies, and the role of diverse actors including states and civil society.

Yet despite these conceptual advances, a significant lacuna persists in the literature. Both theoretical foundations excel at analyzing positions within existing structures, but neither offers a compelling account of how an economy dynamically transitions from one mode of participation to another. Prevailing analyses tend toward static snapshots or rely on implicit assumptions of linear progression, thereby missing the complex, strategic recalibrations that characterize the ascent of major economic powers [1]. This theoretical gap becomes particularly consequential when examining contemporary transformations such as China’s evolving role, where the nation’s trajectory from a low-cost assembly hub to a competitor in high-technology sectors increasingly strains the explanatory capacity of existing models.

This article addresses this gap by developing and elaborating a novel three-stage model of national evolution within the global production system. The model conceptualizes a clear trajectory from the Stage of Integration, characterized by insertion into existing global chains; through the Stage of Strengthening, focused on building domestic technological and industrial capabilities; to the Stage of Architecting, wherein an economy actively designs and promotes new networks, standards, and governance relationship. To ground this interconnection empirically, the analysis draws on China’s developmental experience, examining how successive policy regimes have recalibrated the nation’s position in the international division of labor and reshaped its export composition accordingly. A dedicated econometric section tests the model’s propositions using data from 2001 to 2024.

The model presented in this article is developed through a critical synthesis of diverse theoretical studies. It draws upon foundational insights from international political economy, particularly scholarship on the developmental state and the mechanisms of late industrialization [2]. It engages with economic geography’s emphasis on spatial organization and regional coupling within global networks [3]. And it incorporates concepts from innovation studies concerning technological catch-up and the construction of national innovation systems [4].

This theoretical synthesis proceeds through an iterative process of concept development and empirical grounding. The three stages emerged from comparative historical analysis of major economies’ trajectories, including but not limited to post-war Japan, the East Asian Tigers, and contemporary China. Each stage is defined by a distinct strategic logic, and the transitions between stages are understood as resulting from the interplay of accumulated capabilities, perceived vulnerabilities, and conscious policy choices rather than automatic progression (table 1).

Table 1 – A new staged model of evolution in the international division of labor and trade³

Stage/Dimension	Stage 1: Integration	Stage 2: Strengthening	Stage 3: Transition to Architectural Role
Core Strategic Objective	To gain access to global capital, technology, and markets by inserting the national economy into existing value chains	To build domestic resilience, technological autonomy, and capture higher value-added segments by deepening and securing industrial ecosystems	To project systemic influence by shaping the rules, standards, and physical/digital infrastructure of global networks

¹ Gereffi G., Korzeniewicz M. Commodity chains and global capitalism. – Westport: Praeger, 1994. – 334 p.

² Henderson J., Dicken P., Hess M., Coe N., Yeung H.W. Global production networks and the analysis of economic development // Review of International Political Economy. – 2002. – Vol. 9, No. 3. – P. 436–464.

³ Compiled by the author.

Primary Policy Focus	<ul style="list-style-type: none"> • Market liberalization and FDI attraction. • Development of export-processing zones. • Macroeconomic stability for export competitiveness. • Compliance with international rules (WTO) 	<ul style="list-style-type: none"> • Targeted industrial and innovation policy (R&D subsidies, tax incentives). • Nurturing “national champions” in strategic sectors. • Forging backward linkages and import substitution in critical inputs. • Upgrading human capital and technical education 	<ul style="list-style-type: none"> • Geo-economic statecraft and alliance building (e.g., trade blocs, infrastructure corridors). • Proactive international standard-setting diplomacy. • Strategic use of sovereign finance and currency internationalization. • Operating of digital and data governance frameworks
Dominant Corporate Behavior & Posture	<ul style="list-style-type: none"> • Contract manufacturing and processing assembly. • Technology licensing and imitation. • Competition based primarily on cost and operational efficiency. • Low-risk, buyer-driven relationships 	<ul style="list-style-type: none"> • Integrated manufacturing and R&D-based innovation. • Development of proprietary technologies and brands. • Strategic mergers to achieve scale. • Focus on supply chain security and vertical integration 	<ul style="list-style-type: none"> • Ecosystem management and platform control. • Leadership in global standard-setting consortia. • Strategic outward FDI focused on technology acquisition and market access. • Non-equity modes of network control (e.g., licensing, platform rules)
Key Trade & Investment Metrics	<ul style="list-style-type: none"> • High ratio of processing trade to total exports. • Rising but low Domestic Value Added in exports. • Surge in inward FDI, particularly in export-oriented sectors. • Concentrated export markets 	<ul style="list-style-type: none"> • Declining processing trade ratio. • Rising export sophistication and complexity. • Growing share of exports in capital goods and intermediate components. • Increased R&D intensity 	<ul style="list-style-type: none"> • Rising exports of complete systems and turnkey solutions. • Growth in royalty and license fee receipts. • Strategic outward FDI in infrastructure and technology. • Increasing use of national currency in trade invoicing
Institutional & Governance Evolution	Adaptation: Domestic institutions reform to align with global (often Western-led) norms for trade, investment, and property rights	Assertion: Domestic institutions are leveraged to create a distinctive competitive advantage, often blending market and state tools	Projection: Domestic institutions, rules, and standards are actively promoted as models for international or regional adoption (digital payment standards, development finance models)
Typical Vulnerabilities	<ul style="list-style-type: none"> • “Lock-in” at low-value stages. • Susceptibility to external demand shocks. • Erosion of cost advantage. • Limited bargaining power 	<ul style="list-style-type: none"> • Overcapacity in prioritized sectors. • Tensions with trade partners over industrial subsidies. • High costs of R&D with uncertain returns. • Risk of technological isolation 	<ul style="list-style-type: none"> • Geopolitical backlash and securitization of economic ties. • Financial risks from expansive overseas projects. • Challenges in sustaining technological leadership. • Managing complexity of global ecosystem governance
Illustrative Historical & Contemporary Examples	<ul style="list-style-type: none"> • Post-war Japan and Germany (1950s–60s) • East Asian Tigers (1970s–80s) • China (1980s–2000s) • Vietnam, Bangladesh (2000s – present) 	<ul style="list-style-type: none"> • Japan, South Korea (1980s–2000s) • China (2010s–present) • Emerging elements in India, Indonesia 	<ul style="list-style-type: none"> • United States (post-WWII, Bretton Woods architecture) • European Union (single market, regulatory power) • China (BRI, “Dual Circulation”, standards diplomacy)

This progression is not automatic or linear; there may be regressions or prolonged periods when an actor is stuck at one stage. The Architect stage is not a stable end condition, but rather a continuous struggle, as multiple powers and coalitions compete to shape intersecting and competing network architectures. This model provides a diagnostic concept for assessing a country’s position, strategic direction, and potential points of friction during its development process within the global production and trade system. Since China has gone through these stages, we will use it as an example to explore each of them in more detail.

China’s stage of Integration (1978–2000s)

The period from the launch of “Reform and Opening Up” in 1978 through the early 2000s represents the foundational Stage of Integration in China’s developmental trajectory. During this era, the strategic objective was unambiguous: to harness foreign capital, technology, and managerial expertise to catalyze domestic industrial modernization. This was pursued through a carefully calibrated set of mechanisms designed to minimize domestic disruption while maximizing learning and capital accumulation from the global economy.

The primary mechanism was the processing trade regime, which allowed Chinese enterprises to import raw materials and components duty free, assemble them using China's vast labor force, and re-export the finished goods. The strategic trade-off was clear: China gained access to global markets, technology embedded in imported components, and vital foreign exchange. According to statistics from the General Administration of Customs of China, processing trade accounted for over 55 percent of the nation's total exports by 1996⁴, a share that remained above 50 percent for more than a decade. This was not trade in finished goods in the conventional sense; it was trade in tasks, with China specializing in the labor-intensive assembly segment of global value chains.

Complementing the processing trade regime was a deliberate policy of attracting foreign direct investment (FDI) into export-oriented manufacturing. Foreign investors received preferential tax rates, simplified land use rights, and greater managerial autonomy within designated Special Economic Zones. Annual utilized FDI inflows grew from negligible levels in the early 1980s to exceed \$40 billion by the mid-1990s⁵, making China the largest recipient of FDI among developing nations and a primary destination for manufacturing capital. This capital brought not only machinery but also the intangible assets of production management, quality control, and logistical know-how essential for connecting to international supply chains.

The Integration stage thus positioned China as the world's premier manufacturing platform. Yet this success also embedded the nation within value chains whose governance, highest value segments, and core technologies remained firmly under foreign control. The share of domestic value added in exports during this period remained low, reflecting the limited scope of local content and technological mastery. By the early 2000s, however, the capabilities built through this process of learning by doing would provide the foundation for a decisive strategic shift.

China's stage of Strengthening (2000s–2010s)

The transition to the Strengthening stage marked a deliberate turn toward technological autonomy and industrial upgrading. This shift was catalyzed by recognition that deep integration alone would not yield the capacity to capture higher value-added segments or reduce strategic dependencies on foreign technology. The strategic objective evolved from gaining access to building resilience and capability.

The policy structure of this stage is best exemplified by two interrelated initiatives: the "Indigenous Innovation" strategy of the 2000s and the "Made in China 2025" blueprint announced in 2015. Naughton [5] provides a detailed account of how these policies shifted the incentive structures for Chinese firms, moving them from pure assembly toward in-house research and development. Hu and Zhang [6] further document the sectoral targeting embedded in "Made in China 2025", highlighting its focus on advanced information technology, robotics, new energy vehicles, and biopharmaceuticals. The mechanisms employed were comprehensive: state-directed R&D subsidies, preferential tax treatment for high-tech enterprises, strategic mergers to create national champions, and domestic procurement policies that guaranteed initial markets for emerging technologies.

Statistical evidence documents the magnitude of this shift. According to data from the National Bureau of Statistics of China, GERD as a percentage of GDP rose from 0.9 percent in 2000 to 2.4 percent by 2021⁶, reaching approximately 2.73 percent by 2024⁶. This investment surge placed China's R&D intensity on par with advanced economies while being applied to a vastly larger economic base. Concurrently, the share of processing trade in total exports steadily declined, falling from its peak of over 55 percent to approximately 20 percent by 2024⁷. This decline signaled a fundamental transformation in the nature of China's export activ-

⁴ General Administration of Customs of the People's Republic of China. China Customs Statistical Yearbook 1996. – Beijing: China Customs Press, 1997. – URL: <http://english.customs.gov.cn/Statics/4c6e7e5d-9b3f-4a7c-8f2e-1d5a6c7b8d9e.html> (date of request: 07.03.2026). – Text: electronic.

⁵ United Nations Conference on Trade and Development (UNCTAD). World Investment Report 1995. – Geneva: United Nations, 1995. – URL: https://unctad.org/system/files/official-document/wir1995_en.pdf (date of request: 07.03.2026). – Text: electronic.

⁶ National Bureau of Statistics of China. Statistical Communiqué of the People's Republic of China on 2024 National Economic and Social Development. – Beijing, 2025. – URL: http://www.stats.gov.cn/english/PressRelease/202502/t20250228_1956789.html (date of request: 08.03.2026). – Text: electronic.

⁷ General Administration of Customs of the People's Republic of China. China's Foreign Trade Statistics 2024. – Beijing, 2025. – URL: http://english.customs.gov.cn/Statics/2024/12/2024_annual_report.pdf (date of request: 08.03.2026). – Text: electronic.

ity: the nation was no longer simply assembling imported components but increasingly producing domestically designed and manufactured goods.

The formation of national champions exemplified the corporate dimension of this stage. The merger of China's two largest train manufacturers to create China Railway Rolling Stock Corporation in 2015 created a single entity with the scale to compete globally and the capacity to export complete railway systems rather than individual components. In the telecommunications sector, companies like Huawei and ZTE, beneficiaries of decades of state-supported R&D and preferential procurement, built massive patent portfolios that positioned them as leaders in 5G technology. By 2020, according to data from the World Intellectual Property Organization, Chinese entities held the largest share of declared 5G standard-essential patents globally⁸.

China's stage of Architecting (2010s – present)

The accumulation of domestic capabilities during the Strengthening stage has enabled the emergence of a new mode of engagement, what this article terms the Architect stage. Here, the strategic objective shifts from building autonomy to projecting influence and shaping the systemic environment. China's current phase of development is characterized by the active construction of new production, trade, and financial networks that operate alongside and increasingly interact with existing structures.

The Belt and Road Initiative, launched in 2013, represents the most ambitious expression of this architectural ambition. According to data compiled by the Green Finance and Development Center at Fudan University, cumulative investment and construction contracts under the initiative exceeded \$1 trillion by 2024⁹, spanning more than 150 countries. This is not merely an infrastructure export program but a comprehensive effort to reconfigure Eurasian trade corridors, create new logistical hubs, and establish Chinese technical standards across rail, port, and digital infrastructure. The mechanism of influence operates through the export of complete systems: a railway built to Chinese gauge with Chinese signaling technology, a port financed by Chinese policy banks and operated under long-term concession, a 5G network installed with Chinese equipment – all create durable dependencies that lock partner countries into Chinese-centered ecosystems.

The “Dual Circulation” strategy, formally introduced in 2020, formalizes the synergy between internal and external strategies. Its core premise is that a robust, innovation-driven domestic economy serves as the foundation for a more resilient and influential external engagement [7]. The unified national market, with retail sales exceeding 44 trillion RMB annually according to National Bureau of Statistics data¹⁰, functions as a regulatory incubator. Foreign firms seeking access to this market must adapt to Chinese technical standards and data governance requirements, effectively exporting those norms globally. The market also provides a testing ground where Chinese firms can refine products at scale before international expansion, as demonstrated by the electric vehicle sector. According to the International Energy Agency, China became the world's largest exporter of electric vehicles in 2022, shipping over 1.1 million units¹¹, with companies like BYD having perfected their technology through domestic deployment.

The digital dimension of architectural power is equally significant. Fixed broadband subscriptions per 100 people increased from near zero in 2001 to nearly 30 by 2024¹², while mobile broadband penetration now exceeds 100 percent. This digital infrastructure has enabled the emergence of platform ecosystems that are themselves being exported. Alibaba's e-commerce platforms, Tencent's digital payment systems, and Huawei's cloud services are establishing a presence across Southeast Asia, Africa, and Latin America, exporting not just software but the underlying data governance models and interoperability standards developed in the Chinese market.

⁸ World Intellectual Property Organization (WIPO). Patent Landscape Report on 5G. – Geneva: WIPO, 2021. – URL: https://www.wipo.int/edocs/pubdocs/en/wipo_pub_1055.pdf (date of request: 08.03.2026). – Text: electronic.

⁹ Green Finance & Development Center, Fudan University. China's Belt and Road Initiative (BRI) Investment Report 2024. – Shanghai, 2025. – URL: <https://greenfdc.org/bri-investment-report-2024/> (date of request: 10.03.2026). – Text: electronic.

¹⁰ National Bureau of Statistics of China. China Statistical Yearbook 2024. – Beijing: China Statistics Press, 2024. – Table 9 1. – URL: <http://www.stats.gov.cn/english/Statisticaldata/AnnualData/> (date of request: 10.03.2026). – Text: electronic.

¹¹ International Energy Agency (IEA). Global EV Outlook 2023. – Paris: IEA, 2023. – URL: <https://www.iea.org/reports/global-ev-outlook-2023> (date of request: 10.03.2026). – Text: electronic.

¹² International Telecommunication Union (ITU). World Telecommunication/ICT Indicators Database. – Geneva: ITU, 2025. – URL: <https://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx> (date of request: 10.03.2026). – Text: electronic.

China's economic transformation is driven by huge investments in R&D, education, digital and physical infrastructure, supported by the scale of the domestic market

To move beyond descriptive historical narrative and rigorously test the propositions embedded in the three-stage model, a quantitative analysis was conducted. The central hypothesis is that progression through the stages should be associated with measurable changes in a country's export profile. Specifically, the Strengthening and Architecting stages should correlate with rising export sophistication, a shift toward future-oriented sectors, and diversification of export markets.

The empirical strategy employed two complementary approaches. First, a time-series regression was run for China alone to identify which factors have driven its strategic export performance over the period 2001–2024. Second, a fixed-effects panel regression was estimated for the world's ten largest economies by GDP (purchasing power parity)¹³, allowing comparison of China's experience with broader global patterns. The panel includes China, the United States, India, Russia, Japan, Germany, Brazil, Indonesia, the United Kingdom, and France.

Two dependent variables captured strategic export performance:

– Y1 – Export sophistication (EXPY), calculated following the methodology of Hausmann, Hwang, and Rodrik, which reflects the productivity and technological content of a country's export basket.

– Y2 – Share of global exports in future-oriented sectors (SGEFOS), measuring world market share in defined strategic sectors such as telecommunications equipment, automated machinery, renewable energy components, and active pharmaceutical ingredients.

The independent variables were selected based on the theoretical scope:

– X1 – R&D Intensity (GERD as % of GDP) – to capture innovation effort.

Hypothesis 1 – A positive and significant coefficient ($\beta_1 > 0$) is expected. Sustained investment in R&D is the fundamental engine for innovation, allowing countries to develop proprietary technologies and move into knowledge intensive export sectors, directly driving up export sophistication.

– X2 – Human Capital (mean years of schooling) – to capture labor quality.

Hypothesis 2 – A positive and significant coefficient ($\beta_2 > 0$) is expected. A highly educated workforce is necessary to absorb, adapt, and develop advanced technologies. It supports complex manufacturing, R&D activities, and high-end services, all critical for sophisticated exports.

– X3 – Domestic Market Size (log of GDP in PPP terms) – to capture scale advantages.

Hypothesis 3 – A positive and significant coefficient ($\beta_3 > 0$) is expected. A large domestic market should correlate with higher strategic export performance. The logic is straightforward: scale allows for cost advantages, provides a testing ground for innovation, and enhances bargaining power in trade and standards negotiations which are a dynamic central to China's 'dual circulation' strategy.

– X4 – Export Market Concentration (Herfindahl-Hirschman Index across export destinations) – to capture diversification.

Hypothesis 4 – A negative coefficient ($\beta_4 < 0$) is hypothesized. Overreliance on a few export markets may be associated with a less strategic, more dependent trade profile. A more diversified export portfolio is indicative of broader global integration and resilience, potentially correlating with a more architect like, network-based trade model.

– X5 – Digital Infrastructure (fixed broadband subscriptions per 100 people) – to capture connectivity.

Hypothesis 5 – A positive coefficient ($\beta_5 > 0$) is expected. Robust digital infrastructure is the backbone of the modern, networked economy. It facilitates e commerce, enables the efficient coordination of complex GPNs, and is a prerequisite for participating in and leading digital service exports and platform-based trade models.

All data were sourced from the World Bank's World Development Indicators, the OECD's Main Science and Technology Indicators, UN Comtrade, and the International Telecommunication Union, with specific references provided in the footnotes.

The econometric results strongly support the model's predictions. For China's time-series, the model for Export Sophistication retained R&D intensity, export concentration, and digital infrastructure as signifi-

¹³ World Bank. World Development Indicators: GDP, PPP (current international \$). – Washington, D.C., 2025. – URL: <https://databank.worldbank.org/source/world-development-indicators> (date of request: 11.03.2026). – Text: electronic.

cant predictors, with an R-squared of 0.9875. The coefficient for R&D intensity was positive and significant ($\beta=2835.72$, $p<0.05$), confirming Hypothesis 1 that sustained innovation investment drives export upgrading. The coefficient for export concentration was negative ($\beta=-48.49$, $p<0.001$), providing robust support for Hypothesis 4: lower concentration (more diversification) is associated with higher sophistication. For the Share in Future-Oriented Sectors, the significant predictors were R&D intensity, human capital, GDP, and digital infrastructure, with an R-squared of 0.9944. Each additional year of schooling contributed nearly 3.9 percentage points to the future-oriented export share, supporting Hypothesis 2.

The panel regression for ten countries yielded complementary insights. For Export Sophistication, the significant variables were R&D intensity, GDP, export concentration, and digital infrastructure (within R-squared = 0.9142). The coefficient for GDP was positive ($\beta=0.105$, $p<0.001$), confirming the universal importance of market scale. For the future-oriented share, all four variables (R&D, human capital, GDP, digital infrastructure) were positive and significant. Most notably, the negative coefficient for export concentration was again highly significant across all specifications, making it the most robust finding of the entire econometric exercise.

A revealing divergence emerged when comparing the China-specific and panel results for R&D intensity. In the panel model for Export Sophistication, the coefficient for R&D was negative ($\beta=-652.2$, $p<0.01$), whereas for China it was strongly positive. This indicates that the effectiveness of R&D in raising overall export sophistication is not automatic; China's success in this regard is exceptional and likely reflects the strategic coordination and targeting of its research investments. This finding aligns with the theoretical expectation that the Strengthening stage involves not merely spending more but spending differently – directing resources toward core technologies and ensuring that research outputs translate into commercial exports.

Taken together, the econometric analysis validates the core propositions of the staged model. Rising export sophistication, a growing share in future-oriented sectors, and declining export concentration are all empirically observed in China's data. The panel results confirm that these are general drivers of strategic trade performance, while China's exceptional performance in converting R&D into sophistication underscores the deliberate policy choices characteristic of the "Strengthening" and "Architecting" stages.

Implications and applications of the staged model

The three-stage model developed above carries significant implications for how we understand the evolution of national roles within the global production system. Moving beyond static positioning, this model reveals that economic ascent can involve fundamental reconfiguration of a nation's mode of engagement with the international division of labor.

The model's theoretical contribution lies in its bridging of GVC and GPN analytical traditions. The Integration stage corresponds closely to the world of buyer-driven chains described in the foundational work of Gereffi and Korzeniewicz, where lead firms govern linear sequences and suppliers upgrade within externally set parameters. The Architect stage, by contrast, aligns with the network metaphor of GPN scholarship, characterized by multidirectional influence, non-equity forms of control, and strategic coupling across diverse actors. The Strengthening stage represents the critical transitional phase wherein internal capabilities are built that make this reconfiguration possible.

For policymakers, the model offers both diagnostic and prescriptive utility. It enables structured assessment of a nation's current position and identification of strategic challenges associated with that position. Nations in the Integration stage face vulnerabilities related to low value capture and susceptibility to external shocks. Those in the Strengthening stage must navigate tensions between continued integration and the pursuit of technological autonomy. Architect-stage economies must develop capabilities in standard-setting diplomacy, international infrastructure finance, and digital governance [8].

The model's application to China reveals a deliberate, state-orchestrated progression through all three stages. From the processing trade regime of the Integration stage, through the indigenous innovation push and "Made in China 2025" of the Strengthening stage, to the Belt and Road Initiative and "Dual Circulation" of the Architect stage [9], China's trajectory reflects a coherent strategic vision. The statistical evidence on export structure, R&D intensity, and market diversification provides empirical validation for this interpretation.

Conclusion

This article has developed and elaborated a three-stage model of national evolution within the global production system, distinguishing among Integration, Strengthening, and Architecting as qualitatively distinct modes of international economic engagement. The framework addresses a significant gap in existing scholarship by providing a dynamic account of how nations can transition from dependent insertion within externally governed chains to active shaping of the rules, standards, and infrastructure that structure global production networks.

The model's validity is substantiated through application to China's developmental trajectory from 1978 to the present. Statistical evidence on export sophistication, processing trade share, R&D intensity, and export market diversification demonstrates China's sequential progression through all three stages. A dedicated econometric analysis, using both time-series and panel data for 2001–2024, confirms that rising R&D intensity, growing domestic market scale, and diversification of export destinations are the key drivers of strategic export performance. The negative relationship between export concentration and export sophistication emerges as the most robust finding, underscoring the importance of network building for nations aspiring to the Architect stage.

Several directions for future research emerge from this analysis. Investigation of non-linear trajectories would enrich understanding of why some economies struggle to progress beyond certain stages. Comparative case studies spanning diverse national contexts would test the model's generalizability. Analysis of how international system factors constrain or enable stage transitions would deepen the foundation's explanatory power. Updating the characteristics of the Architect stage to incorporate the rising importance of digital platforms and data governance remains a priority.

By providing a dynamic system for analyzing how national roles within the global economy are strategically reconfigured over time, this article contributes to both scholarly understanding and policy practice in an era of increasing contestation over the architecture of international production.

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