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Impacts of Global Trade Environment Changes on Regional Economies and Implications

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Abstract

As Korea has lack of natural resources, all we have to do is increase export oriented policy, which made South Korea within Top 10 trade major countries.

Korea's external trade has achieved remarkable growth. The trade volume more than tripled from $332.7 billion in 2000 to $1.0752 trillion in 2013, elevating the country to the ranks of global trade powerhouses. Notably, except for 2008 during the global financial crisis, it has recorded continuous trade surpluses, making an absolute contribution to Gross Domestic Product (GDP) growth. As a result, South Korea's global trade ranking took a massive leap from 13th in 2000 to 8th as of 2024, solidifying its status in the international community.

Behind this quantitative growth lies the acquisition of overwhelming international competitiveness in a select few major export items.

Strengthened Position of Traditional Major Industries: Semiconductors, passenger cars, and ships have firmly established themselves as South Korea's representative export items, consistently accounting for about one-fourth (approx. 25%) of total exports. These items lead the market based on preemptive, large-scale facility investments and super-gap technological prowess (e.g., the shipbuilding industry's sweep of eco-friendly LNG ship orders, the auto industry's accelerated transition to electric vehicles [EVs], etc.).

Leap of New Growth Engines: Recently, the export share of new growth engine products has significantly increased, attempting to diversify external competitiveness. This includes the ICT industry group, such as mobile phones, wireless communication devices.

Key words: *external trade, export. competitiveness, infrastructure, non-tariff barriers.*

Chapter 1: Introduction

1. Background and Necessity of the Study

The Korean economy has been facing a structural limitation known as 'Jobless Growth,' characterized by worsening employment creation amidst a prolonged low-growth trend since the global financial crisis. Amidst these macroeconomic difficulties, a more pressing concern is the high probability that the unbalanced growth between economic sectors—such as exports versus domestic demand, and manufacturing versus services—will become entrenched. Due to the highly export-dependent nature of the Korean economy, export-driven manufacturing has achieved a certain level of performance in the global market, but the service sector, which is directly linked to domestic demand, remains relatively sluggish.

Furthermore, the recent global trade environment is experiencing unprecedented uncertainty due to the proliferation of Non-Tariff Barriers (NTBs) as a new form of protectionism, trade conflicts between major hegemonic powers, and competition for supremacy in advanced technologies. These macroeconomic changes in the trade environment are crucial issues directly linked not only to the national trade balance but also to the survival of 'regional economies' where specific industries are clustered.

2. Purpose of the Study

Therefore, this study aims to deeply analyze the latest trends in the rapidly changing global trade environment and the policy shifts of major powers, and to identify how these external uncertainties affect domestic regional economies and industrial structures. Furthermore, based on this

analysis, it seeks to explore strategic pathways and implications for regional economies to move beyond simple defensive responses and achieve new industrial structure transformation and innovative growth.

3. Review of Previous Studies

To secure the validity and differentiation of this study, previous studies on the changes in the global trade environment and their ripple effects on regional economies are reviewed in two main branches.

Studies on the Spread of Global Protectionism and Non-Tariff Barriers (NTBs)

Recent trade studies commonly point out that despite the easing of traditional tariff barriers, Technical Barriers to Trade (TBT) and Sanitary and Phytosanitary (SPS) measures are acting as actual means of trade restriction. According to research by institutions such as the Korea Institute for International Economic Policy (KIEP), advanced countries are establishing sophisticated NTBs like the Carbon Border Adjustment Mechanism (CBAM) and supply chain due diligence laws under the pretext of environmental protection and public safety. These previous studies prove that the new protectionism ultimately hinders the growth of highly export-dependent countries by raising export unit prices and increasing compliance costs for individual companies.

Impacts of Trade Environment Changes on Regional and Industrial Ecosystems

Studies dealing with the spatial ripple effects of macroeconomic shocks on regional economies emphasize that regions where specific industries are clustered are more vulnerable to external variables. For instance, regions with industrial complexes centered on traditional manufacturing, such as automobiles or steel, are directly hit by policies of the US or the EU aimed at restructuring supply chains around their own borders (e.g., IRA, CRMA). Existing studies generally have limitations as they focus on macroeconomic response measures at the national level or merely analyze the export and import trends of individual industries.

Differentiation of this Study

Therefore, this study differentiates itself from existing research by directly linking the external variable of 'changes in the trade environment' with the internal task of 'industrial structure transformation of regional economies.' In particular, it aims to present a 'Two-Track Strategy' combining the attraction of anchor companies and the advancement of service infrastructure as a specific pathway for the survival of regional economies.

Chapter 2: Trends and Prospects of the Global Trade Environment

1. Superficial Trade Liberalization and the Decline of Applied Tariff Rates

The modern global trade environment has shown a trend where trade liberalization spreads worldwide, paralleling multilateralism represented by the WTO system and regionalism centered on FTAs. In this trend, the applied tariff rates of countries around the world have continuously declined, and global trade volume has also significantly increased. Looking only at superficial indicators, protectionism centered on traditional tariff barriers can be evaluated as being suppressed or maintaining the status quo.

2. The Rise of New Protectionism: The Spread of Non-Tariff Barriers (NTBs)

However, looking behind the actual trade environment, a new form of protectionism is rapidly spreading to fill the void left by tariff reductions. In particular, non-tariff barriers such as Sanitary and Phytosanitary (SPS) measures, Technical Barriers to Trade (TBT), Intellectual Property Rights (IPR) protection, and strict Rules of Origin are recognized as powerful tools to protect domestic industries.

Strategies of Advanced Countries: Advanced countries like the US and the EU are weaponizing their high technological standards and infrastructure to actively utilize TBT or strict IPR measures. This effectively blocks the market entry of latecomer countries at the source.

Strategies of Developing Countries: On the other hand, developing countries tend to use administrative methods that can relatively directly intervene in trade—such as quantitative restrictions, pre-shipment inspections, and complex customs procedures—as protectionist measures.

In this context, it is pointed out that South Korea, which has an export-driven economic structure, is somewhat lagging in responding to increasingly sophisticated non-tariff trade barriers. Therefore, finding systematic response measures that fit the realistic situation, such as globalizing technical standards and strengthening IPR capabilities, is urgently needed.

[Table 1] Trend of TBT Notifications by Major Countries (Unit: Cases)

Year	Total Global TBT Notifications	US	EU	China
2015	1,989	284	102	115
2018	3,065	315	128	152
2021	3,966	385	155	188
2023	4,079	412	171	204

Interpretation: The total number of global TBT notifications is increasing rapidly every year, indicating

that major powers such as the US, EU, and China are actively using technical standards as weapons to protect their domestic industries. (Used as a basis for the rise of new protectionism in Chapter 2)

3. The Other Side of Superficial Trade Liberalization and the Crisis of Multilateralism

Since the launch of the World Trade Organization (WTO) in 1995, multilateralism and regionalism represented by Free Trade Agreements (FTAs) have developed in parallel, spreading trade liberalization worldwide. As a result, the average applied tariff rates of countries around the world have dropped to historic lows, and on the surface, protectionism centered on traditional tariff barriers seems to be suppressed.

However, looking behind the scenes, global trade governance is facing a serious crisis. Due to the paralysis of the WTO Appellate Body, the binding force of multilateral norms to mediate international trade disputes has significantly weakened. Consequently, major powers are stepping outside the multilateral framework and accelerating exclusive economic blocization centered on 'Friend-shoring' or 'Minilateralism,' building supply chains among allies who share similar values.

4. The Proliferation of New Protectionism: The Evolution of Non-Tariff Barriers (NTBs)

To fill the gap left by tariff reductions, countries worldwide are actively utilizing Non-Tariff Barriers (NTBs) as a means to protect their domestic industries, and their forms are becoming increasingly sophisticated and intelligent.

Weaponization of Environmental and Labor Regulations into Trade Barriers: The most prominent change recently is a new form of trade barrier under the guise of responding to climate change and protecting human rights. The EU's Carbon Border Adjustment Mechanism (CBAM) and the Corporate Sustainability Due Diligence Directive (CSDDD) require environmental and labor standards equivalent to their own for imported goods entering their markets. This acts as a de facto additional tariff, causing a massive cost burden on countries and regional economies with a high proportion of carbon-intensive manufacturing.

Advanced Countries' Sophisticated Technical Barriers to Trade (TBT) Strategies: Advanced countries like the US and the EU are weaponizing advanced technological standards in which they hold a comparative advantage, along with strict Sanitary and Phytosanitary (SPS) measures and Intellectual Property Rights (IPR) protection systems. The high technological standards of advanced countries function as an 'invisible barrier' that fundamentally blocks the market entry of companies from latecomer developing nations.

Developing Countries' Direct Control Strategies: Conversely, developing countries lacking the capacity to establish advanced technical standards are defending their domestic industries by intervening in trade in a more direct and administrative manner, such as through anti-dumping measures, safeguards, quantitative restrictions, Local Content Requirements, and pre-shipment inspections.

5. The Advent of the Economic Security Era and the Weaponization of Global Value Chains (GVCs)

The most core paradigm shift in the recent global trade environment is the advent of the 'Economic Security' era, where the boundary between trade and security is collapsing. Going through US-China hegemonic competition and geopolitical conflicts (e.g., the Russia-Ukraine war), existing Global Value Chains (GVCs) that solely pursued efficiency and cost reduction are rapidly reorganizing around 'stability' and 'resilience.'

Major countries have defined advanced core technologies such as semiconductors, secondary batteries, biotechnology, and AI, as well as critical minerals like lithium and rare earths, as national security assets. Accordingly, they are explicitly combining industrial and trade policies through measures such as export controls, strengthening foreign investment screening, and providing massive subsidies to expand domestic production capacity for core items (e.g., the US IRA and CHIPS Act).

6. Implications of Changes in the Global Trade Environment for Regional Economies This macroeconomic upheaval in the trade environment exerts an asymmetrical shock on the highly export-dependent Korean economy, especially on 'regional economies' where specific major industries are clustered. In the past, individual companies could export simply by securing excellent quality and price competitiveness. Now, however, they must meet global standards across the board, from carbon emissions during the production process and the local content ratio of components to the labor environment within the supply chain. Therefore, the existing regional industrial complex model focused on reducing production costs can no longer survive in the new trade order. Transitioning to an eco-friendly and digital-based industrial ecosystem capable of preemptively responding to global regulations has emerged as a core task that will determine the fate of regional economies.

Chapter 3: Policy Changes in the Trade Environment of Major Countries

Major countries leading the global trade order are deploying multifaceted and strategic trade policies to maximize their economic interests. To formulate our future trade policies, it is necessary to closely analyze the strategies of these countries. Amidst the weakening of the

multilateral system and geopolitical crises, major countries leading the global trade order are moving beyond simply expanding trade volume to making 'protection of domestic industries' and 'securing stable supply chains' the top priorities of their trade policies. This paradigm shift signifies a transition from rules-based free trade to strategic and offensive policies linking industry and trade.

1. The United States: Leading Comprehensive and Strong FTA Norms

The US prioritizes thoroughly securing the interests of its domestic companies. US trade policy goes beyond simple liberalization of goods trade to include investment protection and strong protection of intellectual property rights. Furthermore, it seeks to reorganize global standards around itself by promoting high-level 'comprehensive FTAs' that encompass promoting stability in the international trade environment, pressing for substantial market opening from FTA partners, drafting clear and binding trade rules, and applying and enforcing fair laws and regulations.

Moving away from its past position of leading the global free trade system, the US has pivoted toward strict America First policies and a 'Worker-Centric Trade Policy.' The US strategy focuses on checking China's technological rise and rebuilding its collapsed domestic manufacturing base.

Internalization of High-Tech Industries and the Revival of Industrial Policy:The CHIPS and Science Act and the Inflation Reduction Act (IRA) demonstrate that US trade policy has been combined with robust industrial policy. Armed with massive subsidies, the US is reshoring production facilities for core industries such as advanced semiconductors, secondary batteries, and electric vehicles (EVs) back to the US mainland.

Friend-Shoring Centered on Value-Sharing Countries: The US has halted the pursuit of traditional tariff-elimination-focused FTAs and is leading new economic consultative bodies like the Indo-Pacific Economic Framework (IPEF). Through this, the US is reorganizing new trade norms—such as labor, environment, digital trade, and supply chain resilience—centered around itself, and is employing a strategy to lower external dependence (especially on China) through solidarity with allies.

2. The EU: The 'Europe 2020' Strategy for Overcoming Crises

In the past, the EU announced 'Europe 2020' as a mid-to-long-term strategy to overcome the global financial crisis and the structural fiscal crisis within the Eurozone. This strategy presents three main goals: Smart Growth, Sustainable Growth, and Inclusive Growth. Trade policy is also deployed to support the achievement of these goals, showing a characteristic of emphasizing value-oriented trade norms by linking eco-friendly standards, labor rights, and human rights with trade agreements.

Going a step further from the 'Europe 2020' strategy for overcoming past financial crises, the EU has established the 'European Green Deal'—aimed at climate neutrality and digital transformation in Europe—as its core vision. In the trade sector, it advocates 'Open Strategic Autonomy,' maintaining an open stance externally while defending its core interests itself.

Weaponization of Environment and ESG Regulations in Trade:The EU is enforcing strong environmental and human rights standards, in which it has a comparative advantage, as global standards. Through the Carbon Border Adjustment Mechanism (CBAM), it imposes carbon costs on imported goods from outside the region, and by introducing the Corporate Sustainability Due Diligence Directive (CSDDD), it strictly controls whether human rights and environmental violations occur throughout global supply chains.

Improving Self-Reliance in Critical Raw Materials and Technologies: By enacting the Critical Raw Materials Act (CRMA) and the Net-Zero Industry Act (NZIA), the EU is strengthening defensive trade measures to reduce resource dependence on specific countries and build an eco-friendly technology and parts production ecosystem within the region.

3. China: Building an Open Economic System and a Greater China Economic Bloc

China's external economic policy sets the 'establishment of an open economic system' through the expansion of FTAs as a core goal. In particular, it is taking defensive yet offensive strategies to counter the reorganization of the new trade order led by the US, such as the Trans-Pacific Partnership (TPP), the Transatlantic Trade and Investment Partnership (TTIP), and the Trade in Services Agreement (TiSA). As a direct response, China is actively pursuing a Greater China FTA encompassing Hong Kong, Macau, and Taiwan, and is emphasizing securing economic hegemony in the Asia-Pacific region against the US TPP by taking a leading role in utilizing the Regional Comprehensive Economic Partnership (RCEP).

In response to the US's omnidirectional technology control and supply chain exclusion strategies, China is adopting the 'Dual Circulation' strategy—which promotes 'international circulation' based on 'domestic circulation'—as the foundation of its external economic policy. That is, it intends to achieve self-reliance in advanced technologies based on its massive domestic market while strategically utilizing external opening.

Strengthening Regional Economic Hegemony and Leading Multilateral Agreements: To fill the void left by the US withdrawal from multilateral trade agreements, China took the lead in bringing the Regional Comprehensive Economic Partnership (RCEP), the world's largest mega-FTA, into effect. Furthermore, it is positioning itself as a defender of free trade by actively seeking accession to the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the Digital Economy Partnership Agreement (DEPA).

Weaponization of Critical Minerals and Building Alternative Supply Chains: China is utilizing export controls on critical minerals that act as choke points in the global supply chain, such as gallium, germanium, and graphite, by legislating them as a counterattack card. At the same time, it is bypassing the US economic encirclement by upgrading the Belt and Road Initiative (BRI) and accelerating economic blocization with 'Global South' countries in ASEAN, the Middle East, and Africa.

4. Japan: Promoting Economic Revitalization through the 'International Expansion Strategy'

In 2013, Japan formulated the 'International Expansion Strategy' as one of its three core action plans for economic revitalization. This strategy focuses on building strategic trade relations and promoting Economic Partnership Agreements (EPAs), strategic thinking to secure overseas markets, and preparing infrastructure related to funding and human resources to support national growth. In particular, to preempt the foundation of Free Trade Area of the Asia-Pacific (FTAAP) norms in the future, Japan is actively participating in TPP negotiations and pursuing RCEP, the Korea-China-Japan FTA, and TiSA negotiations from various angles, aiming to restore its influence on the international trade stage.

In response to increasing geopolitical risks, Japan enacted the 'Economic Security Promotion Act' (2022) faster than any other major advanced country. This goes beyond the past 'International Expansion Strategy' (2013) for economic revitalization and redesigns trade and industrial policies from a national security perspective.

Securing Critical Materials and Protecting Advanced Technologies: To secure stable supply chains for crucial materials such as semiconductors, batteries, and rare earths, Japan is injecting massive national budgets to attract investments from global companies like TSMC into Japan. In addition, it is strictly enforcing a patent non-disclosure system and an essential infrastructure pre-screening system to prevent sensitive technologies from leaking overseas.

Securing Leadership in Establishing Mega-FTA Norms:Japan led the revival of the TPP, from which the US withdrew, into the CPTPP. Based on its 'Free and Open Indo-Pacific (FOIP)' vision, it is actively voicing its position on setting next-generation trade rules, such as digital trade and data flow norms (DFFT: Data Free Flow with Trust).

5. Implications of Major Countries' Policy Changes on Our Regional Economies

The recent trade policies of the US, EU, China, and Japan commonly combine 'security motives' with 'revitalization of domestic production facilities (regional economies)'. This means that the global trade environment has transformed from an efficiency-centric 'level playing field' to a bloc-oriented 'tilted playing field.'

Consequently, the regional economies that support Korea's major industries stand at a critical crossroads where they must simultaneously overcome the dual hardship of pressure from major powers to restructure supply chains around themselves (e.g., demands to enter the US market) and stringent environmental regulations (e.g., the EU's carbon regulations). Therefore, at the regional level, it is urgent to monitor changes in global trade norms in real-time and accelerate a corresponding transition of the industrial ecosystem (e.g., adopting eco-friendly processes, diversifying supply chains).

Chapter 4: Analysis of the Structure and External Competitiveness of Regional Economies and Industries

1. Imbalance in Industrial Structure: Manufacturing vs. Services

As the low-growth trend has become entrenched since the financial crisis, the growth structure of domestic industries is showing a distinct polarization. This is the unbalanced growth between 'export-oriented manufacturing' targeting the global market and the 'service sector,' which is directly affected by domestic economic conditions.

While the export sector has maintained an overwhelming growth trend, the domestic demand sector, including consumption and investment, has fallen into a swamp of prolonged stagnation. Statistically, the growth gap between the service sector and the manufacturing sector slightly narrowed from 2.4% before the financial crisis to 1.8% after the crisis. This alleviation of the growth gap can be interpreted as a positive factor maintaining the service sector's proportion across all industries to some extent. However, compared to the advanced industrial structures of developed countries, the current growth of our service sector is blocked by the massive wall of economic recession and the resulting domestic demand slump, preventing it from achieving structural transformation.

Amidst the prolonged low-growth trend following the financial crisis, South Korea's industrial growth structure is

epitomized by an extreme imbalance between "export-oriented manufacturing" and a "service sector directly tied to domestic economic conditions."

Jobless Growth in Manufacturing: The export sector has driven economic growth by maintaining an overwhelming upward trend, but its job-creation effect continues to decline due to advanced automation and capital-intensive characteristics. This is a primary cause for the severing of the trickle-down effect, where 'growth' fails to lead to 'income increases' for local residents.

Low Value-Added and Stagnant Service Sector: In contrast, the service sector, which has high employment absorption capacity, is taking a direct hit from sluggish domestic demand, including consumption and investment. The growth gap between the service and manufacturing sectors narrowed slightly from 2.4% before the financial crisis to 1.8% afterward; however, this is closer to an optical illusion caused by overall economic stagnation rather than innovative growth in the service sector.

Absence of Producer Services: Particularly when compared to advanced nations, South Korea's regional economies have a very low proportion of 'high value-added producer services' (such as finance, legal, R&D, and design) that support manufacturing competitiveness. Instead, they are heavily skewed toward small-scale consumer services like retail, wholesale, accommodation, and food, acting as a fundamental limitation to the advancement of the industrial structure.

2. Changes in South Korea's External Trade Competitiveness

South Korea's external trade has achieved remarkable growth. The trade volume more than tripled from $332.7 billion in 2000 to $1.0752 trillion in 2013, elevating the country to the ranks of global trade powerhouses. Notably, except for 2008 during the global financial crisis, it has recorded continuous trade surpluses, making an absolute contribution to Gross Domestic Product (GDP) growth. As a result, South Korea's global trade ranking took a massive leap from 13th in 2000 to 8th as of 2024, solidifying its status in the international community.

Behind this quantitative growth lies the acquisition of overwhelming international competitiveness in a select few major export items.

Strengthened Position of Traditional Major Industries: Semiconductors, passenger cars, and ships have firmly established themselves as South Korea's representative export items, consistently accounting for about one-fourth (approx. 25%) of total exports. These items lead the market based on preemptive, large-scale facility investments and super-gap technological prowess (e.g., the shipbuilding industry's sweep of eco-friendly LNG ship orders, the auto industry's accelerated transition to electric vehicles [EVs], etc.).

Leap of New Growth Engines: Recently, the export share of new growth engine products has significantly increased, attempting to diversify external competitiveness. This includes the ICT industry group, such as mobile phones, wireless communication devices, and displays, as well as secondary batteries and K-bio (pharmaceuticals).

3. Advancement and Concentration of Major Export Items

Analyzing the trade structure by item, South Korea's traditional major export items—semiconductors, passenger cars, and ships—firmly maintain about a 25% (1/4) share of total exports.

Traditional Major Industries: Since 2000, semiconductors, passenger cars, and ships have secured overwhelming international competitiveness through preemptive, large-scale facility investments and relentless technological innovation. Particularly in shipbuilding, during the global boom of 2010, the export of ships as a single item accounted for a staggering 10% of total exports.

New Growth Engines: Recently, the rapid advancement of the ICT (Information and Communication Technology) sector, including wireless communication devices like mobile phones, has been prominent.

While securing competitiveness centered on specific major industries has the positive aspect of driving the national economy, it also makes the economy vulnerable to external shocks, making industrial diversification at the regional economy level essential at this juncture.

[Table 2] Proportion of South Korea's Major Export Items and Regional Concentration (As of 2023)

Major Export Items	Share in Total Exports	Major Clustered Regions	Uncertainty Risk Factors in Trade Environment
Semiconductors	18.5%	Gyeonggi (Yongin, Pyeongtaek, Icheon), Chungcheong	US CHIPS Act, Export controls to China
Automobiles / Parts	11.2%	Ulsan, Gyeonggi, Gwangju	US IRA, Strengthened EU carbon emission regulations
Secondary Batteries	5.8%	Chungcheong (Ochang), Gyeongbuk (Pohang), Jeonbuk	Mineral supply chain regulations, Strengthened domestic production requirements

Interpretation: South Korea's exports are concentrated in a few items like semiconductors and automobiles, and these industries are highly clustered in specific regions. Therefore, changes in global trade regulations (IRA, CHIPS Act, etc.) inflict direct shocks on the survival of the corresponding regional economies. (Used as the basis for the external competitiveness analysis in Chapter 4)

The improvement of export competitiveness at the national level does not translate into the even development of all regional economies. Rather, the advancement of specific industries is deepening "Spatial Polarization" between regions.

Concentration of High-Tech Industries in the Seoul Metropolitan and Chungcheong Regions: High value-added high-tech industries driving the Fourth Industrial Revolution, such as semiconductors, displays, bio, and IT services, are rapidly being sucked—like a black hole—into the Seoul metropolitan area (southern Gyeonggi) and parts of the Chungcheong region, where top-tier talent and R&D infrastructure are concentrated.

Crisis in Traditional Manufacturing Hubs like the Southeast Region: In contrast, traditional heavy and chemical industries and machinery/parts manufacturing hubs that drove South Korea's rapid economic growth in the past—such as the Buulgyeong (Busan, Ulsan, Gyeongnam) and Daegu-Gyeongbuk regions—are facing restructuring pressure due to China's pursuit and a slowdown in global demand.

This spatial concentration of industries accelerates the outflow of the youth population from local areas and forms a vicious cycle that drastically weakens the self-sustainability of non-metropolitan regional economies.

4. External Vulnerability of Regional Industrial Ecosystems Due to Changes in the Trade Environment (Additional Analysis)

"Global economic security" and the "spread of non-tariff barriers (NTBs)" discussed in Chapters 2 and 3 clearly expose the structural vulnerabilities of highly externally-dependent regional industrial ecosystems.

Chain Shocks from Global Value Chain (GVC) Disruptions: Regional economies often exhibit a vertical "subcontracting structure," where a few large corporations (automakers, steelmakers, shipbuilders, etc.) at the top are linked with numerous tier 1, 2, and 3 small and medium-sized suppliers. If the import of intermediate goods (e.g., core raw materials for Chinese batteries, automotive semiconductors, etc.) is cut off due to US-China trade conflicts or homeland-centric critical mineral laws (like the CRMA), the shock is transferred much more harshly to the small parts companies in the region.

Lack of Capacity to Comply with Environmental and ESG Regulations: The EU's Carbon Border Adjustment Mechanism (CBAM) and the US Inflation Reduction Act (IRA) demand strict carbon emission reductions and RE100 (100% renewable energy use) right from the product's manufacturing stage. While large anchor companies can respond with massive capital, small and medium-sized regional manufacturing companies absolutely lack the financial resources and information to transition to eco-friendly processes.

Concluding Implications: Ultimately, global trade regulations exacerbate the cost burden on regional subcontracting firms, which may lead large corporations to exclude regional suppliers that fail to meet regulatory requirements from their supply chains. In other words, external trade uncertainty translates directly into a "threat of collapse for region-level industrial clusters," suggesting an urgent need for structural transformation across the entire ecosystem to overcome this.

Chapter 5: Regional Economic Growth Path Strategies in Response to Changes in the Trade Environment (Economic Policy Uncertainty)

Amidst changes in the trade environment where global economic policy uncertainty is maximized, regional economies must seek "optimized long-term fostering and innovative growth strategies" beyond mere survival. It is urgent to move away from uniform support from the central government and implement a region-led transformation of the industrial structure.

1. Two-Track Industrial Fostering Strategy

For the innovation of regional economies, the following Two-Track approach is required:

Track 1: Innovation of the Growth System and Smart Specialization: Actively foster mid-sized enterprises and induce convergence between heterogeneous technologies to improve the constitution of existing major industries.

Track 2: Enhancement of Service Infrastructure Efficiency: Expand producer service infrastructure (finance, logistics, legal, etc.) by strengthening broad-based center functions where capital, talent, goods, and information are clustered.

Consequently, this will serve as a core driver for a grand transformation of the industrial structure across the regional economy by attracting private investment based on frameworks like the "Special Act on High-Tech Industries."

2. Region-Led 6-Step Innovative Growth Strategy and Ecosystem Building

The fundamental problems currently facing regional economies are the absence of 'Anchor Companies' to promote industrial development and create jobs, weak

industrial ecosystems and supply chains, and a lack of linkage between wide-area economic zones. These are the limitations of past top-down strategic industry policies. To overcome this, a 6-step strategic industry fostering plan must be established by concentrating the capabilities of industry, academia, research, and government.

Restoration and Strengthening of Central City Functions: Transitioning from a dependent position regarding capital, people, goods, and information to functioning as a network hub.

Fostering Service Infrastructure Industries: Creating an industrial ecosystem for the convergence of producer services (finance, logistics, tourism, digital ICT).

Strategic Selection and Concentration: Concentrating regional capabilities on high-tech industry sectors expected to experience hyper-growth globally, such as secondary batteries, future mobility, biotechnology, semiconductors, robotics, and digital fields.

Developing National Advanced Strategic Industry Complexes: Eliciting full government support to create specialized clusters.

Attracting Anchor Companies and Clustering Linked Companies: Attracting large-scale private investments and establishing R&D hubs.

Grand Transformation of the Industrial Structure: Ultimately restructuring the regional economy fundamentally by ensuring productivity growth and securing the global scalability of industries.

We will demonstrate how the 'Region-Led Innovative Growth and Anchor Company Attraction Strategy' presented in Chapter 5 can actually be implemented through specific domestic and international case studies.

Case 1: The Rise of the US 'Battery Belt' and Regional Economic Restructuring

Background: The Midwestern 'Rust Belt', formerly the center of the US steel and internal combustion engine automobile industries, experienced industrial decline and regional economic collapse amid the trend of global free trade.

Changes in the Trade Environment: Recently, the US government implemented the Inflation Reduction Act (IRA) to restructure supply chains around its own borders, deploying a powerful trade policy.

Changes in the Regional Economy: As a ripple effect of this legislation, global automakers and secondary battery companies (including South Korea's LG Energy Solution and SK On) are establishing massive joint venture plants in traditional Rust Belt areas like Ohio, Tennessee, and Michigan to receive subsidy benefits.

Implications: This is a representative case where a macroeconomic trade policy shift injected massive capital (anchor companies) into a declining regional economy, leading to a grand transformation of the regional industrial structure from internal combustion engines to an electric vehicle (EV) supply chain.

Case 2: Success Story of Pohang, South Korea's Transition to a 'Secondary Battery Specialized Complex'

Background: Pohang, Gyeongsangbuk-do, was the heart of South Korea's steel industry centered around POSCO. However, it faced a crisis of long-term growth stagnation due to a deteriorating external trade environment, such as global steel oversupply originating from China and global carbon regulations (e.g., the EU's CBAM).

Innovation Strategy (Application of Two-Track): Pohang City set out to improve its industrial constitution based on its existing steel infrastructure and research capabilities (POSTECH, etc.). In particular, it preemptively attracted large-scale investments from core 'anchor companies' like EcoPro and POSCO Future M.

Result: The city was designated by the central government as a 'National Advanced Strategic Industry Secondary Battery Cathode Material Specialized Complex,' receiving extensive regulatory deregulation and infrastructure support.

Implications: This demonstrates that the region-led new industry ecosystem building strategy through 'selection and concentration' emphasized in Chapter 5 is the optimal path to overcoming the crisis in the trade environment. It proves the virtuous cycle where the entry of anchor companies attracts the clustering of numerous materials and parts-linked companies, ultimately leading to the creation of high-quality local jobs and the expansion of R&D functions.

Chapter 6: Conclusion

The global trade environment is rapidly evolving, harboring new uncertainties of non-tariff barriers and technological hegemony behind the superficial liberalization of tariff elimination. Major countries like the US, EU, China, and Japan are already moving swiftly to establish trade norms centered on their own nations.

The South Korean economy, particularly its regional economies that are heavily dependent on exports and skewed toward specific industries, is highly vulnerable to these changes. To resolve the continuous imbalance between manufacturing and services since the financial crisis and to overcome external uncertainties, region-led structural innovation is essential. Moving beyond existing fragmented support measures, there must be a focus on building a wide-area ecosystem centered on anchor

companies, advancing high value-added service infrastructure, and executing 'selection and concentration' (e.g., secondary batteries, semiconductors, future mobility) through the 6-step innovative growth strategy. Through this, regional economies can be reborn not merely as production bases, but as core hubs for national advanced strategic industries equipped with global competitiveness.

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