

# North America's Supply Chain Integration and Implications for Korea

Hyok Jung KIM Associate Research Fellow, North America and Europe Team (hjkim@kiep.go.kr)

## I. Introduction

After remaining suspended during the Trump administration, the North American Leaders' Summit was reconvened under the Biden administration on November 18, 2021. The main agenda items were: health cooperation to end the COVID-19 pandemic, strengthening the competitiveness of the three North American countries and creating conditions for fair growth, and ensuring a secure North America in harmony with migration and development. The second North American Leaders' Summit of the Biden-Harris administration covered an overall agenda similar to that of the first summit but addressed more concrete implementation measures. Examples include the North American Semiconductor Forum, the identification of investment opportunities through supply chain mapping, and a critical minerals mapping program.

Solidarity among the three North American countries centered on the United States is not something newly created under the Biden-Harris administration. Given that the three countries are already closely interconnected through mutual foreign investment and trade, there has long been a recognition that neglecting any one of them would make overall economic development difficult. According to the U.S. Office of the Historian, the countries most frequently visited by U.S. presidents are the United Kingdom, Canada, France, Germany, and Mexico. This shows that, based on geographical proximity and friendly relations, virtually every U.S. president has made regular visits to Canada and Mexico.

Although political exchanges among the three North American countries became somewhat constrained after President Trump took office,

cross-border cooperation in private investment remained consistently active despite such political factors. Both U.S. outbound investment toward Canada and Mexico and inbound investment flows from those countries into the United States have shown a steady upward trend. While Canadian and Mexican investment in the United States stagnated from the mid-Obama years through the Trump administration (2013–2017), it has resumed growth since the launch of the Biden administration in 2021.

However, under the Trump 2.0 administration’s “America First” approach, a series of protectionist policies have become serious obstacles to trilateral cooperation in North America. Invoking the International Emergency Economic Powers Act (IEEPA), the Trump 2.0 administration imposed tariffs on Canada and Mexico, citing illegal drugs and immigration as threats to U.S. national security. Subsequently, the phased introduction of Section 232 tariffs created significant barriers to economic integration through trade among the three countries. That said, the protectionist measures of the Trump 2.0 administration are not directed solely at Canada and Mexico. In fact, the administration has shown respect for the existing United States-Mexico-Canada Agreement (USMCA), and the intensification of U.S. measures to counter China could, paradoxically, deepen U.S. economic interdependence with Canada and Mexico. For this reason, continued attention should be given to economic cooperation among the United

States, Canada, and Mexico. From this perspective, this paper seeks to examine the impact of deepening supply chain integration in North America on Korea and to provide relevant implications.

## II. Policies Related to the North America Supply Chain Linkage

North America pursued cooperation through various channels, though the momentum has weakened in the Trump 2.0 administration. Looking first at the United States and Mexico, the High-Level Economic Dialogue (HLED) is held regularly between the two countries. Although launched in 2013, the dialogue was temporarily suspended under the Trump administration and revived in 2021 with the inauguration of the Biden administration. The HLED alternates between a Mid-Year Review and the full high-level meeting. At the 2023 session, the main agenda items included: (1) strengthening supply chains and crisis management, (2) improving border infrastructure, (3) promoting medical device trade, (4) fostering economic and social development in southern Mexico and across Latin America, (5) securing tools for future prosperity, and (6) investing in the workforce.

Cooperation between the United States and Canada has been focused on critical minerals. The two countries, along with Australia, are advancing the Critical Minerals Mapping Initiative (CMMI), which identifies the global distribution of critical mineral resources. In

the context of trilateral discussions, the key issues include economic cooperation, competitiveness, health and medical collaboration, and regional as well as global challenges. Particularly, semiconductor cooperation has emerged as a central theme, with plans for a trilateral semiconductor forum, as well as collaborative supply chain and critical minerals mapping efforts.

**B**etween Canada and Mexico, cooperation continues through high-level economic talks and the “Canada-Mexico Partnership,” which has been in place since 2004. This partnership has produced annual reports from 2016 to 2021. In 2023, the Canada-Mexico Action Plan was announced, with main themes including: (1) reconciliation with Indigenous peoples, (2) gender equality and women’s empowerment, (3) trade and investment, (4) anti-racism, (5) youth engagement, (6) peace and security, (7) tourism, migration, and labor mobility, (8) environment and climate change, and (9) cooperation in responding to future health crises. However, in the area of trade and investment, the action plan did not outline detailed implementation measures, offering instead general statements about building a community based on the USMCA, achieving sustainable and inclusive economic recovery, and pursuing further discussions.

**A**t the trilateral level, the North American Leaders’ Summit (NALS) is held regularly. During the first Trump presidency (2017–2020), no such summits were convened, but since President Biden took office in 2021, they

have been held at least biennially. As mentioned earlier, while bilateral cooperation mechanisms operate between the three countries, trilateral projects are also actively pursued. The most recent NALS during the Biden administration was held in January 2023 in Mexico, where the agenda focused on: (1) strengthening diversity, equity, and inclusion, (2) addressing climate change and protecting the environment, and (3) enhancing competitiveness.

**T**he USMCA, which succeeded NAFTA, can be regarded as an important instrument for strengthening ties among the three North American countries. Unlike a typical trade liberalization agreement, the USMCA includes considerations of labor standards, measures addressing forced labor with China in mind, and restrictions on pursuing future agreements with non-market economies. In this sense, it promotes not just economic integration, but also the alignment of economic and national security objectives, as well as solidarity based on shared values. The Trump 2.0 administration, through the inclusion of special provisions granting exemptions for imports under the USMCA from various reciprocal tariffs and Section 232 tariffs, has also acknowledged the agreement’s distinctive character, setting it apart from other trade agreements.

**I**n addition, the Clean Vehicle Tax Credit under the Inflation Reduction Act, enacted during the Biden administration, applies primarily to vehicles assembled in North America and requires that battery components and critical

minerals be sourced from North America or designated partner countries. Such measures can be seen as reflecting the unique characteristic of North America taking shape as a kind of single economic bloc.

### III. Trend of Supply Chain Linkage in the North America and Relations with Korea's Exports

#### 1. Trend of Linkage

This paper employs the input–output analysis methodology to measure the contribution arising from trilateral linkages among the three North American countries within North America's exports and examines its evolution over time.

Looking at the trend of the supply chain linkage index, it peaked in 2011 and then continued to decline until 2016, just before the Trump administration began. However, starting in 2017, with the launch of the Trump administration, it rose slightly. At the same time, the value-added ratio within North American exports increased until 2016, dipped slightly between 2017 and 2018, and then resumed an upward trend beginning in 2019.

An industry-level examination of the supply chain linkage index reveals significant heterogeneity. The coke and petroleum refining industry is expected to experience significant fluctuations in various supply chain indices depending on crude oil prices. From the perspective of the supply chain linkage index,

when WTI crude oil prices are low, the upstream influence of the United States and Canada—both key players in the upstream supply chain—diminishes, which in turn raises the likelihood of relatively higher supply chain linkage index values. Indeed, 2020 was a period when WTI crude prices fell sharply.

In the case of automobiles, the supply chain linkage index has been steadily increasing since 2016, and this trend continued even under the Trump administration, when the US-MCA was revised. Basic metals and construction, by contrast, did not exhibit significant changes in their trends.

For the electrical equipment industry (ISIC 2790), which includes batteries, the supply chain linkage index dipped slightly during the Trump administration but then rose by 0.8 percentage points from 8.5% in 2019 to 9.3% in 2020. The computer, electronics, and optical products industry, which includes semiconductors, stands out as the sector with the most pronounced upward trend. In this industry, the supply chain linkage index increased significantly from just 4.8% in 2011 to 7.6% in 2020. Notably, the index began to rise sharply starting in 2017, when Trump took office.

#### 2. Relationship with Korea's Exports

On average, a 1% increase in supply chain linkages within North America in a given industry leads to approximately an 11.7% increase in Korea's value-added exports in that same industry. In other words, the expansion

of value-added exports through North American linkages also contributes to the growth of Korea's value-added exports. Moreover, when the total value-added exports generated through North American supply chain linkages in other industries (outside the same industry) increase by 1%, Korea's exports in those industries rise by 5.2%. This indicates not only a positive correlation between North American supply chain linkages and Korea's exports in the same industry, but also a significant relationship in which linkages in different industries within North America still contribute meaningfully to the growth of Korea's value-added exports. However, when comparing the magnitude of the effects, it can be observed that Korea's value-added exports increase more substantially when North American supply chain linkages expand within the same industry.

At the industry level, however, the impact of North American supply chain linkages on Korea's exports varies. Industries in which value-added exports rise as intra-industry North American supply chain linkages strengthen include wholesale and retail trade (which covers automobile sales), electrical equipment (including batteries), chemicals, and rubber and plastics. By contrast, for computers, electronics, and optical products (which include semiconductors), the effect of stronger intra-industry linkages was relatively limited.

Instead, Korea's semiconductor industry experienced a pronounced increase in value-added exports when North American supply

chain linkages were strengthened in other industries. A similar pattern is observed in petroleum refining. This can be explained by the fact that when an industry functions as an input supplier to other industries, its role as an upstream sector makes it more sensitive to supply chain linkages occurring elsewhere rather than within its own sector.

#### IV. Policy Implications

Although the three North American countries form a vast economic bloc, as discussed earlier, they cannot achieve complete supply chain self-sufficiency on their own. Accordingly, Korea must continue to devise complementary cooperation strategies with North America. Based on the findings in this paper, the industries most closely linked to Korea's value-added exports when North American integration deepens include wholesale and retail trade, electrical equipment (batteries), and chemicals. The computer, electronics, and optical products sector—including semiconductors—also contributes to Korea's value-added exports, particularly through its upstream and downstream linkages. Therefore, cooperation strategies should focus on these forward and backward linkages. **KIEP**