Chapter 10
China's Critical Mineral and EV Exports to the U.S. and Brazil:
Geopolitical and Economic Implications Amid Rising Tariffs

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ABSTRACT

This chapter analyzes the geopolitical and economic implications of China's critical mineral and electric vehicle (EV) exports to the United States and Brazil amidst rising tariffs. Critical minerals are essential for the global green energy transition, particularly for EV batteries and renewable energy infrastructure. China has become the dominant force across the entire critical minerals supply chain, from raw material extraction to high-tech component manufacturing, and is the world's largest exporter of EVs. The U.S. has imposed substantial tariffs on Chinese imports. Brazil, with its significant critical mineral reserves, has adopted a phased import tax system for EVs. The intensifying competition for critical minerals, exacerbated by the U.S.-China trade war, presents a "Green Paradox," where the pursuit of clean energy risks environmental degradation. Ultimately, unilateral trade measures are insufficient to address supply chain vulnerabilities and environmental costs, underscoring the necessity for multilateral cooperation.

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1. INTRODUCTION

Critical minerals form the backbone of an intended global green energy transition, serving as inputs for electric vehicle (EV) batteries, renewable energy infrastructure, and advanced technologies. The geopolitical landscape surrounding these minerals has intensified as nations compete for secure access to resources essential for economic security and technological advancement. Among the world's largest and most resource-rich nations, Brazil, China, and the United States are strategic actors, each grappling with distinct economic challenges in securing their roles across the critical mineral supply chain. This dynamic is increasingly defined by the U.S.-China rivalry, which has evolved into a full-fledged "economic systemic war" aimed at decoupling critical supply chains and establishing dominance in the industries of the future (Global4Cast.org, 2025).

China has strategically positioned itself as the dominant force across the entire critical minerals supply chain, from the initial extraction of raw materials to the final manufacturing of high-tech components. This comprehensive control, which extends to the processing of 60-70% of the world's cobalt, has solidified its major role in the international trade of these vital commodities (Detry et al., 2023; International Trade Centre, 2023b). The Asian country currently controls approximately half of the global critical minerals market value and has emerged as the world's largest exporter of conventional combustion vehicles and electric vehicles (EVs) (Chang & Bradsher, 2024). This dominance has raised significant concerns among international partners about dependency and supply stability. Beijing has shown a willingness to weaponize its control through export restrictions on key minerals, justifying such measures based on national security concerns (Shirley & Svensson, 2023).

In response, the United States actively seeks to bolster domestic production and build resilient supply chains through "friend-shoring" partnerships to diversify its sources. Reliant on imports for essential minerals, the U.S. has enacted legislation like the Inflation Reduction Act (IRA) to enhance national security and promote domestic production by offering substantial tax credits tied to domestic content provisions (Taulli & Busby, 2025). This techno-nationalist approach is complemented by aggressive tariffs on Chinese goods, including a surge to 102.5% on EVs, to shield its domestic industry from what it perceives as unfair competition (Shokri, 2025).

The U.S. and Brazil have imposed different levels of protective measures aimed at bolstering domestic industries while attempting to navigate complex international relations with China. The American government has been enacting substantial tariffs on Chinese imports since early 2018, up to the point of including critical minerals and EVs as part of a strategy to reduce reliance on foreign sources and enhance local manufacturing capabilities. These tariffs are intended to promote domestic industries, particularly in the burgeoning renewable energy sector, which relies