East Asia's Innovation Frontier: The Interplay of Emerging Technology, Taxation, and Institutional Corruption

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Abstract

This thesis investigates the governmental factors contributing to ecosystems of domestic innovation for specialized and emerging technology sectors in East Asian economies. The innovation metrics are compiled based on yearly patent data from 2012 to 2023 from the following industries: semiconductor components, digital advanced telecommunications, biotechnology, solar energy components, digital communications, computing technology, fuel cell technology, and artificial intelligence. By creating a viable comparison of multiple East Asian countries, the study employs Poisson and negative binomial regressions to analyze the impact of fiscal and institutional variables. These factors include VAT rates, corruption, business startup costs, and bureaucratic delays. This enabled a cross-model comparison that weighted the per capita data to incorporate smaller nations such as Hong Kong and Singapore. Findings indicate mixed significance for VAT rates and corruption, but highlight significant correlations between innovation outcomes and institutional factors such as startup days and per capita startup costs. The analysis categorizes government interventions into broader schools of thought: Tax and Spend, Market-Driven (Neoclassical), and the Chinese hybrid BT to VAT model, revealing how differing economic strategies influence technological advancement. Country comparisons yielded difficulty in comparing East Asian governments due to the lack of uniformity and China's economic anomalies. Broadly, the results offer policy implications that underscore the importance of institutional efficiency and cost structures in supporting innovation.