Global Value Chain Integration in Economic Performance: Firm-Level Evidence from China, Japan, Taiwan, and Korea

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This study examines how the disclosure of Bloombergâ€™s environmental, social, and governance-related (ESG) scores is associated with firmsâ€™ financial performance and global value chain (GVC) linkages. We use Bloomberg firm-level data for four major East Asian economiesâ€”Japan, China, Taiwan, and South Koreaâ€”covering Bloombergâ€™s first-level 12 industry sectors. Firm performance is measured primarily by return on assets (ROA), with return on equity (ROE) used in alternative specifications. To capture firmsâ€™ positions in GVCs, we employ two value-added-based indicators constructed from the OECD Inter-Country Inputâ€“Output tables: a backward-linkage index (VAbwdIndex), which reflects foreign value added embodied in production and exports, and a forward-linkage index (VAfwdIndex), which captures domestic value added embodied in other countriesâ€™ exports.

We define the treated group as firms that did not report ESG scores during the pre-treatment period (2016â€“2020) but began to disclose such scores during the post-treatment period (2021â€“2024). The control group consists of firms that did not report ESG scores in either period. Industry classification follows Bloombergâ€™s first-level 12-sector classification. To address selection bias, we first apply inverse probability of treatment weighting (IPTW), which provides weights based on the estimated probability of receiving treatment. We then employ GMM compare with the T-learner and X-learner frameworks proposed by KÃ¼nzel et al. (2019) to estimate heterogeneous treatment effects of BSG-score disclosure on firm-level financial outcomes.

The results show that treated firms are characterized by relatively higher R&D expenditure and G-scores than control firms. While neither VAbwdIndex nor VAfwdIndex shows a statistically significant difference between the two groups, VAbwdIndex appears to be more closely associated with the control group than VAfwdIndex. We also find that, during the COVID-19 period, firms in the control group experienced greater deterioration in performance than those in the treated group, although the magnitude of this gap varies across industries. Overall, the findings suggest that firms initiating ESG disclosure tend to exhibit stronger governance and R&D-related characteristics, while differences in GVC positioning are less pronounced. The results further suggest that firms disclosing ESG scores were more resilient to adverse shocks during the pandemic period.

Keyword: Corporate ESG score, T-leaner, X-learner