

Vertical Integration Depth and Supplier Opportunism Mitigation: An Empirical Analysis of Transaction Cost Governance in Tier-1 Automotive OEM Supply Chains

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Abstract. This study investigates the relationship between vertical integration depth and supplier opportunism mitigation within Tier-1 original equipment manufacturer (OEM) supply chains in the global automotive sector. Drawing on transaction cost economics (TCE) and relational governance theory, we employ a mixed-methods design combining structural equation modeling (SEM) across 214 OEM–supplier dyads with semi-structured interviews from six multinational procurement executives. Findings demonstrate that asset specificity and behavioral uncertainty jointly moderate the efficacy of hierarchical governance mechanisms, while relational capital attenuates opportunistic behavior beyond the threshold predicted by classical TCE. Contrary to established models, partial vertical integration outperforms full integration in volatile input-cost environments. These results refine extant supply chain governance frameworks and carry direct implications for OEM strategic sourcing policy under geopolitical supply disruption conditions prevalent in 2024–2025.

Keywords: vertical integration, transaction cost economics, supplier opportunism, relational governance, asset specificity, OEM supply chain, structural equation modeling, strategic sourcing, supply chain governance

Introduction

Global supply chain governance has emerged as one of the most consequential strategic management challenges of the mid-2020s. The convergence of post-pandemic reshoring pressures, escalating geopolitical fragmentation, and accelerating input-cost volatility has fundamentally destabilized the make-or-buy calculus that underpins vertical integration theory. Original equipment manufacturers (OEMs) in the automotive sector—a segment

responsible for approximately USD 2.9 trillion in annual global output—face acute governance dilemmas when deciding the appropriate boundary of the firm relative to their Tier-1 supplier networks. These decisions carry profound implications for competitive positioning, rent appropriation, and long-run organizational resilience. Transaction cost economics (TCE), pioneered by Williamson (1975, 1985), remains the dominant theoretical lens through which governance structure selection is analyzed. TCE posits that firms internalize transactions when the hazards of market contracting—primarily asset specificity, behavioral uncertainty, and bounded rationality—render arms-length exchange prohibitively costly. However, empirical validation of TCE within contemporary, digitally intermediated supply chain contexts has produced inconsistent results. Several recent studies (Geyskens et al., 2006; Lafontaine & Slade, 2007; Mayer & Argyres, 2022) suggest that relational norms and inter-organizational trust act as governance substitutes, significantly attenuating opportunism in ways that classical TCE does not adequately theorize. This theoretical gap has grown particularly salient as automotive OEMs navigate single-source semiconductor dependencies, electrification-driven component redesign, and the operational demands of just-in-time manufacturing under disrupted logistics conditions. Despite a substantial body of literature addressing vertical integration at the corporate level, comparatively little empirical work has disaggregated integration depth—the granular degree of upstream activity internalization—from integration breadth, particularly within dyadic OEM–supplier relationships. This distinction carries critical strategic significance: a firm may internalize specific high-specificity components while maintaining market-mediated procurement for commoditized inputs, a hybrid governance posture that challenges both classical TCE and property rights theory predictions. Furthermore, the moderating role of relational capital on opportunism in partial versus full integration configurations remains understudied, especially across multi-country supplier dyads operating under heterogeneous institutional environments. The present paper addresses these gaps through a theoretically grounded, empirically robust investigation of 214 OEM–supplier dyads drawn from automotive manufacturing operations across Germany, South Korea, Japan, and the United States. Structural equation modeling (SEM) is employed to test the hypothesized relationships among asset specificity, behavioral uncertainty, relational capital, integration depth, and supplier opportunism. Supplementary qualitative data from executive interviews provide interpretive depth and ecological validity to the quantitative findings. The remainder of this article is structured as follows: Section 2 reviews the theoretical foundations and develops the research hypotheses. Section 3 details the research methodology, including sampling procedures, operationalization of constructs, and analytical strategy. Section 4 presents the quantitative and qualitative findings. Section 5 discusses the theoretical contributions and managerial implications. Section 6 addresses study limitations and proposes directions for future research.

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