Секция «43.23 Analytics for International Business»

ESG-Driven Insourcing and Outsourcing in the Chemical Sector: Managerial and Financial Implications

Заявка № 1677514

Amid current geopolitical shifts, Russian chemical companies are fundamentally reassessing their operational strategies. The global trend toward reshoring, intensified by sanctions pressure since 2022, intersects with growing ESG compliance imperatives. As classical outsourcing drivers like cost reduction lose primacy, the need for technological sovereignty, quality control, and supply chain resilience pushes companies toward insourcing [1, 4]. This study tests whether insourcing becomes both an environmentally and economically preferable strategy for Russian chemical giants integrated into global markets.

Research directly linking outsourcing choices to ESG factors and management accounting remains fragmented. International studies show consumer sensitivity to environmental product characteristics can influence decisions more than emission taxes [5], and that outsourcing can worsen CSR performance while in-house production enables better ESG risk control in supply chains [6]. Russian literature addresses technological sovereignty, economic security challenges, and links between quality management, cost reduction, and sustainable development in continuous chemical production [1, 3, 4]. The author's contribution integrates these approaches to analyze actual strategies of international companies through their reports.

Methodology employs comparative case study analysis of 2024 corporate reports from Russian chemical companies (PJSC PhosAgro, PJSC Acron, JSC UCC Uralchem) and industry sources, revealing managerial decisions reflected in KPIs, investment programs, and risk management systems. Data extraction followed a standardized protocol: each insourcing decision was assessed against three dimensions - strategic rationale, management accounting reflection (KPI changes, cost metrics), and ESG outcome. Cross-case synthesis identified convergent patterns.

Results demonstrate a steady insourcing trend, most fully documented in PhosAgro's reporting [9]: raw material sovereignty (new Volkhov plant increased processing fivefold); IT sovereignty (transition to Russian ERP/MES platforms reduced production cost calculation from 8 hours to 30 minutes and reporting time by 34%); R&D insourcing (in-house institute develops critical technologies); environmental management (own carbon footprint control systems). Acron and Uralchem reports [8, 10] reveal similar vectors: investments in raw material base and international standards compliance (ISO 9001, 14001, 45001).

A direct link exists between these strategic decisions and management accounting systems. Managerial KPIs include non-financial metrics - share of in-house production, CO_2 emissions, safety indicators - demonstrating ESG integration into operations. Insourcing functions as a risk management tool, reducing supplier dependence, minimizing sanctions threats, and ensuring quality control throughout the production chain.

Thus, a "qualitative insourcing" model is emerging in the Russian chemical sector, driven by long-term sustainability and risk management goals rather than short-term cost optimization. This strategy integrates ESG principles into the operations and management accounting of international companies. Preliminary quantitative assessment of insourcing efficiency was conducted using operational proxy metrics as management accounting indicators. These operational KPIs serve as partial proxies for financial performance in the absence of disclosed segment-level management accounting data, a limitation inherent to externally available corporate reporting.

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