

Inventory of Textile and Apparel Industry in Japan Over the Last 30 years

Kohei Arai

Associate Professor
School of Business

Osaka Metropolitan University (OMU), Osaka, Japan
arai@omu.ac.jp

Hirotsugu Kitada

Associate Professor
Faculty of Business Administration
Hosei University, Tokyo, Japan
kitada@hosei.ac.jp

Tomohisa Kitada

Associate Professor
Faculty of Business Administration
Kindai University
tkidata@bus.kindai.ac.jp

Abstract

This study empirically investigates the structural mechanisms driving the deepening issues of inventory in the Japanese textile and apparel industry. As industry faces increasing pressure to address environmental waste and improve profitability, understanding the statistical reality of inventory behavior is essential. The primary objective of this research is to identify how the relationship between inventory holdings, sales, and asset structures has evolved over time, distinguishing between intentional efficiency strategies and unintended accumulation. The research methodology employs a cross-sectional regression analysis applied to financial data of Japanese textile and apparel firms over the past three decades. Adapting an inventory model to capture year-by-year structural changes, we estimated the coefficients for baseline fixed inventory (intercept) and the sensitivity of inventory to current sales and sales changes. The long-term results reveal a paradoxical structural shift. While the baseline fixed inventory level has historically trended downward, suggesting apparent efforts toward leaner operations ("asset compression"), the sensitivity of inventory to sales has consistently increased. This indicates that generating a unit of sales now requires a higher marginal level of inventory than in the past, likely due to elongated lead times from offshoring and increased product variety. Crucially, the analysis of the COVID-19 period highlights severe supply chain rigidities. Specifically, in 2021, the coefficient for sales change turned significantly negative. This provides statistical evidence of "stickiness," where inventory levels failed to adjust downward proportionately to the sharp decline in sales, resulting in massive unintended accumulation. Furthermore, the post-pandemic data for 2023 shows a sharp rebound in baseline inventory levels, surpassing pre-pandemic figures. These findings imply that the current excess inventory problem is not merely cyclical but stems from deep-seated structural inefficiencies and a reactive shift in management strategy. Japanese firms appear to be moving from efficiency-oriented models to "just-in-case" buffer holding to mitigate supply chain disruptions. This structural transition suggests that without addressing the fundamental disconnect between lead

times and demand forecasting, the industry's inventory burden will continue to exacerbate both financial and environmental risks.

Keywords

inventory, textile and apparel industry, accounting information analysis.

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Biographies

Kohei Arai is currently an Associate Professor at the Graduate School of Business, Osaka Metropolitan University (OMU), Osaka, Japan. Before joining at OMU, he has served as an Associate Professor at Osaka Prefecture University and Gunma University. He received his Ph.D. in Business Administration from Kobe University, Japan. He received his Master of art in business administration (Accounting Systems) from Kobe University, and a B.A. in Business and Commerce from Keio University, Japan. His research interests include management accounting, cost behavior, performance evaluation, lean accounting, and healthcare management. He has several publications in International referred journals in the accounting and business management domain. He is a Director of the Japanese Association of Management Accounting.

Hirotsugu Kitada is an Associate Professor of Accounting at Hosei University in Tokyo, Japan. His research primarily explores how management accounting systems can support corporate sustainability and the transition toward circular economy (CE) business models. He has published academic work on cost behavior, ESG disclosure, and sustainability-oriented control systems. His recent projects focus on the financial implications of CE, including the development of frameworks for mapping cost and revenue structures and evaluating circular strategies from a financial perspective. Associate Professor Kitada is actively engaged in international sustainability standard-setting initiatives, including contributions to the development of the Global Circularity Protocol (GCP), in collaboration with organizations such as ISO/TC323 and the World Business Council for Sustainable Development (WBCSD). He also utilizes emerging AI technologies, particularly large language models, to conduct scoping reviews and analyze narrative disclosures in integrated and sustainability reports.

Tomohisa Kitada is an Associate Professor at Kindai University in Osaka, Japan. He received his Ph.D. in Business Administration from Kobe University, Japan. He received his Master of art in business administration (Accounting Systems) from Kobe University, and a B.A. in business administration from Kobe University. His research interests include management accounting, cost behavior, performance evaluation, role of controller. He has several publications in International referred journals in the accounting and business management domain. He is a Manager of the Japanese Association of Management Accounting.