

6. Conclusion and Suggestions

6.1 Conclusion

The relationship between foreign direct investment (FDI), export competitiveness, and environmental constraints forms a critical nexus shaping the trajectory of Indonesia's textile industry. As global markets increasingly transition toward low-carbon economies, understanding this tripartite dynamic is essential for evaluating the sector's resilience and adaptability. This study's empirical investigation provides a valuable foundation for such an assessment. Against this backdrop, the following discussion contextualizes these findings within the broader landscape of Indonesia's textile exports, FDI inflows, and CO₂ emissions trends.

- **Indonesia Textile Trade, FDI and Emissions Overview**

Indonesia's textile sector is currently characterized by conflicting trends of declining exports, expanding foreign investment, and escalating environmental pressure. Historically a key player in global textile production, Indonesia has seen its export volumes gradually shrink since the late 2000s, with only temporary recoveries, including a post-pandemic surge. Although FDI has grown robustly, these economic developments have occurred alongside a consistent rise in CO₂ emissions between 2008 and 2023. This mix of economic growth and environmental pressure shows the urgent need to balance industry development with sustainability.

- **Textile Export Market Competitiveness**

Indonesia's global textile trade competitiveness has weakened significantly across key performance metrics, revealing a troubling shift in the country's export profile. The Revealed Comparative Advantage (RCA) index shows a marked decline since 2017, signaling a diminishing edge in international markets. Market Share (MS) patterns initially trended upward but have since contracted as rival exporters gained ground. Trade Competitiveness (TC) indicators are particularly concerning, as they reflect Indonesia's transformation from a net exporter to a net importer in recent years. These converging trends underscore the erosion of Indonesia's textile sector competitiveness, necessitating urgent and strategic policy action to regain international standing.

- **Empirical Analysis Result**

Empirical analysis reveals a paradoxical dynamic in which rising FDI and carbon emissions are negatively associated with textile export competitiveness, suggesting deep structural challenges. Regression results indicate that increased FDI correlates with declining export performance, contradicting traditional development expectations and

pointing to potential mismatches between investment inflows and sectoral needs. Likewise, higher CO₂ emissions exert a negative influence on competitiveness, underscoring environmental constraints as a growing determinant of trade viability. Transportation sector expansion is also linked with reduced export outcomes, possibly reflecting logistical inefficiencies. Robustness checks—including stationarity, cointegration, and endogeneity tests—reinforce the reliability of these findings. These results emphasize that without addressing environmental and infrastructural inefficiencies, conventional investment strategies may fail to revitalize the sector.

These findings underscore the urgent need for integrated policy frameworks that simultaneously improve investment quality, production efficiency, and environmental performance. Addressing these dimensions in isolation will not yield the transformative outcomes needed for the industry's long-term viability. The evidence points to a shifting global trade paradigm where environmental standards increasingly influence competitiveness. Consequently, Indonesia must recalibrate its approach to textile sector development to align with emerging sustainability imperatives. However, this study is limited by the availability of sector-specific data, and future research should incorporate more granular, localized datasets to validate and refine these insights. Doing so will support the design of more targeted, effective policy interventions tailored to the unique dynamics of Indonesia's textile industry. Building on this foundation, the following chapter presents targeted policy recommendations aimed at addressing the sector's multidimensional challenges and supporting a sustainable and competitive textile industry.

6.2 Suggestions

To effectively enhance the export competitiveness of Indonesia's textile industry, a well-rounded approach is essential. Given the challenges highlighted in the empirical findings, including the impact of FDI, environmental pressures, and logistical constraints, the following strategic recommendations aim to address these issues.

- **Shift FDI Policy to Boost Green Innovation in Indonesia's Textile Sector**

Indonesia's FDI strategy in the textile sector should be reoriented to prioritize green innovation, sustainable technology transfer, and low-carbon industrial integration. Rather than focusing solely on attracting capital, FDI should be leveraged to support the adoption of environmentally friendly production methods, renewable energy utilization, and circular economy models. This shift will not only facilitate the development of a more resilient and sustainable domestic industry but also generate positive spillover effects for

local firms through exposure to green technologies and practices. In doing so, Indonesia can enhance its export competitiveness and establish a strong position as a leading producer of sustainable textiles within the evolving global value chain.

- **Enhance Infrastructure and Logistical Efficiency**
Improving infrastructure and logistics systems is essential for strengthening the international competitiveness of Indonesia's textile exports. Strategic investments in transportation networks, warehousing, and port facilities will help reduce operational bottlenecks, lower shipping and delivery costs, and minimize supply chain disruptions. Enhanced logistical efficiency will enable textile producers to respond more quickly to global market demands, meet tighter delivery schedules, and improve overall reliability in international transactions. These improvements will not only support export growth but also contribute to broader industrial productivity gains, reinforcing Indonesia's position in regional and global trade networks.
- **Strengthening Sustainability Compliance and Incentives for Indonesia's Textile Sector**
Enhancing sustainability compliance and introducing targeted incentives are critical steps toward aligning Indonesia's textile industry with global environmental standards. The government should update environmental regulations to reflect international benchmarks and provide clear, enforceable guidelines for sustainable production. At the same time, fiscal incentives such as tax relief, subsidies, and grants should be offered to encourage firms to invest in low-carbon technologies and eco-friendly processes. Promoting adherence to internationally recognized green certifications will further elevate the credibility of Indonesian textiles in environmentally conscious markets. This combined approach of regulatory alignment and incentive-driven transformation will help build a more sustainable and globally competitive textile sector.

These combined efforts will ensure that the industry not only meets current global demands but also remains adaptable to future challenges, securing its place in the international market.

REFERENCES

- Abdika, H. A., Farizi, M., Taufiq, A., & Al-Amien, A. J. Foreign Direct Investment Analysis of Indonesia 1992-2022. *International Journal of Economics, Business, and Entrepreneurship*, 2024, (1).
- Berthier, A., Chehade, H., Yalaoui, A., Bouillot, C., Amodeo, L., & Yalaoui, F. Case study of supply chain in textile industry: a dynamic product allocation decision problem. *HAL Science*, 2021.
- Business Sweden. *Business Sweden Southeast Asia's Big Shift Southeast Asia's Big Shift Industry 4.0 and The Forces of Change in The ASEAN Bloc Content*. 2018.
- Bustaman, A., Indiatuti, R., Budiono, B., & Anas, T. Quality of Indonesia's domestic institutions and export performance in the era of global value chains. *Journal of Economic Structures*, 2022, 11(1).
- Butt, M. A., Katuse, P., & Namada, J. M. Porter's Diamond Factor Conditions Determinant: Effect on Automotive Industry of Pakistan. *European Journal of Business and Management Research*, 2019, 4(4).
- Chen, H., Zhang, C., & Yin, K. The Impact of Global Value Chain Embedding on Carbon Emissions Embodied in China's Exports. *Frontiers in Environmental Science*, 2022, 10.
- Christi, P., Muhammad, F., & Maharani, D. *Decarbonising Indonesia's Manufacturing Sector*. 2025.
- Climate Transparency. *Climate Transparency Report: Comparing G20 Climate Action*. 2022.
- Djulus, H., Gyu, C. W., Juanim, J., Ratnamiasih, I., & Santy, R. D. Bridging the effect of the knowledge spillover and innovation performance of textile companies: Evidence from Indonesia. *Fibres and Textiles in Eastern Europe*, 2020, 28(5): 20–26.
- Erkan, B., Kara, O., & Bozduman, E. T. Impact of Macroeconomic Indicators on Export Competitiveness in Shanghai Cooperation Organization Countries. *İzmir İktisat Dergisi*, 2020, 35(3): 443–455.
- Eva Mayasari, S., & Ervani, E. *Analisis Pengaruh ASEAN-China Free Trade Area (ACFTA) terhadap Kinerja Ekspor Industri Tekstil dan Produk Tekstil (TPT) Indonesia Analysis of The ASEAN-China Free Trade Area (ACFTA) Impact on Export Performance of Indonesia's Textile and Textile Products Industries (TPT)*. 2021.

GLOBAL NEWSHIRE. *Sustainable Fabrics Market on the Rise Driven by Eco-Conscious Consumer Demand - Projected to Reach USD 27.8 Billion by 2029*. 2024.

Groening C J, Ross W T Jr, Inman J J. The role of carbon emissions in consumer purchase decisions. *International Journal of Environmental Policy and Decision Making*, 2015, 1(4): 287–288.

Haseeb, M., Haouas, I., Nasih, M., Mihardjo, L. W., & Jermisittiparsert, K. Asymmetric impact of textile and clothing manufacturing on carbon-dioxide emissions: Evidence from top Asian economies. *Energy*, 2020, 196.

Hivelr Editorial Team. California: Porter's Diamond Model—The Competitive Advantage of Regions. *Hivelr*, 2024, 6(8): 1–6.

Kastratović, R. The impact of foreign direct investment on host country exports: A meta-analysis. *World Economy*, 2020, 43(12): 3142–3183.

Kutan, A. M., & Vukšić, G. Foreign Direct Investment and Export Performance: Empirical Evidence. *Comparative Economic Studies*, 2007, 49(3): 430–445.

Mahadika, I. N., Kalayci, S., & Altun, N. Relationship between GDP, Foreign Direct Investment and Export Volume: Evidence from Indonesia. *International Journal of Trade, Economics and Finance*, 2017, 8(1): 51–54.

Manilet, Y. R. *Opini Runtuhnya Sritex dan Tantangan Industri Tekstil Nasional*. Bisnis Indonesia, 2024.

Mauboussin, M. J., & Callahan, D. *Understanding Competitive Advantage Through Market Power*. 2022.

Ministry of Environment and Forestry. *Folu Net Sink: Indonesia's Climate Actions Towards 2030*. 2023.

Mulatsih, S. Industrial development and greenhouse gas emissions in Indonesia. *IOP Conference Series: Earth and Environmental Science*, 2022, 950(1).

Nihayah, D. M., Mafruhah, I., Hakim, L., & Suryanto, S. CO2 Emissions in Indonesia: The Role of Urbanization and Economic Activities towards Net Zero Carbon. *Economies*, 2022, 10(4).

Nurkomariyah, S., & Tyasti, A. E. The Effectiveness of Fabric Safeguards in Protecting and Improving the Indonesian Textile Industry Competitiveness. *Jurnal Manajemen Dan Agribisnis*, 2022.

Park, S. Quality of transport infrastructure and logistics as source of comparative advantage. *Transport Policy*, 2020, 99: 54–62.

Pusat Data dan Teknologi Informasi Energi dan Sumber Daya Mineral Kementerian Energi dan Sumber Daya Mineral. *Inventarisasi Emisi GRK Bidang Energi*. 2020.

Purwanto, N. P. *The Future of The Indonesian Textile Industry*. Info Singkat A Brief Study of Actual and Strategic Issues, 2024.

Rahmadi, A. *Chapter 8 I4R for Circular Economy: Transition Trends and Readiness of Indonesia-Textile and Electronic Sectors*. 2020.

Ramdan, D. M. *Ibarat Sudah Jatuh Tertimpa Tangga, APSyFI Beberkan Tantangan Industri Tekstil*. Kontan, 2024.

Rangkuty, D. M., & Hidayat, M. *Does Foreign Debt have an Impact on Indonesia's Foreign Exchange Reserves?* 2021.

Reed, T., & Gonzalez, A. *Leveraging Foreign Direct Investment in Indonesia: Assessing Foreign Investor's Use of Domestic Suppliers*. 2024.

Rezki, J. F., Riefky, T., Maizar, F. A., Fitriani, D., Hamonangan, M. G., & Salim, H. *Indonesia Economic Outlook*. 2025.

Rokhmawati, A. The nexus among green investment, foreign ownership, export, greenhouse gas emissions, and competitiveness. *Energy Strategy Reviews*, 2021, 37.

Septiana, D. F., & Wahyuningsih, D. Analisis Daya Saing Ekspor Komoditas Tekstil Indonesia di Negara ASEAN. *Media Trend*, 2020, 15(2): 391–400.

Stellian, R., & Danna-Buitrago, J. Revealed comparative advantages and regional specialization: Evidence from Colombia in the Pacific Alliance. *Journal of Applied Economics*, 2019, 22(1): 349–379.

Sugarmansyah, U., Setiastuti, N., Apriyanto, H., Mulyono, H., Heldini, N., Pradnyapasa, D. A., Putera, I. P., Medtry, Putra, A. S., Karim, S., Oktaviani, W., Dwiananto, Y. I., Warseno, W., Lusiana, S., & Guntoro, I. The Impact of Export on the Development of Green Industries for Sustainability in DI Yogyakarta Region, Indonesia: an Extended Input-Output Analysis. *Polish Journal of Environmental Studies*, 2024, 33(2): 1849–1860.

Sugihartono, S. *The SDGs Movement in Indonesian Textile Industry: A Case Study of Duniatex*. Modern Diplomacy, 2024.

Suparmono, S., Suandana, E., & Ilmas, F. Determining Competitiveness of Indonesian Export Commodities using Revealed Comparative Analysis. *Jurnal Ekonomi & Studi Pembangunan*, 2022, 23(1): 66–80.

Wen Lee, C., & Fernando, A. Foreign Direct Investment, Export and Economic Growth in Indonesia: ARDL-ECM Analysis. *Review of Integrative Business and Economics Research*, 2020, 10(3).

Xia, L., & Dewi, S. S. Analysis of Trade Specialization and Competitiveness of Indonesian Coconut Oil in the International Market (2010-2020). *Open Journal of Business and Management*, 2022, 10(01): 245–262.

Yusuf, Z., Wardhiah, Syamni, G., Siregar, M. J. A., & Sitepu, Y. A. The effect of CO2 emissions in Indonesia. *IOP Conference Series: Earth and Environmental Science*, 2021, 922(1).

