

Export Market Concentration, Earnings Stability, and International Finance Risk: Evidence from Indonesia's Non Oil Exports

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ABSTRACT

This study examines how export market concentration shapes export earnings stability from an international finance perspective. Using secondary data compiled from ITC Trade Map for Indonesia's non oil exports during 2022-2025, the paper evaluates export value dynamics, destination market concentration, and the stability of foreign exchange generating export earnings. The analysis combines descriptive trend analysis, market share decomposition, the Herfindahl Hirschman Index (HHI), and the coefficient of variation (CV) of export earnings. The results indicate three main findings. First, Indonesia's export earnings remained resilient despite global tightening, commodity price normalization, and exchange rate uncertainty. Second, export destinations were still moderately concentrated in a limited set of large markets, especially China, the United States, and India, implying exposure to partner specific demand shocks. Third, moderate diversification across secondary markets helped cushion aggregate earnings volatility, although sectoral dependence on a few commodities linked products remained visible. The study contributes to the international finance literature by showing that trade structure is not only a competitiveness issue but also a financial risk issue because export concentration affects foreign exchange inflows, external liquidity, and macro financial resilience. Policy implications include deeper market diversification, export upgrading, and broader use of trade finance and hedging instruments.

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1. INTRODUCTION

International finance and international trade are closely linked because export receipts are one of the main channels through which developing economies

accumulate foreign exchange, support external liquidity, and stabilize macro financial conditions. When export proceeds are generated by only a small number of destination markets or a narrow range of products, the country becomes more

vulnerable to partner specific shocks, terms of trade swings, and exchange rate pressures. For an open economy such as Indonesia, export performance therefore matters not only for growth but also for reserve adequacy, external balance, and the broader resilience of the domestic financial system [1], [2], [3], [4], [5].

Recent global developments have reinforced the importance of this linkage. The post pandemic rebound was followed by tighter global financial conditions, slower growth in major trading partners, persistent geopolitical fragmentation, and recurring volatility in commodity prices and exchange rates. Under these conditions, firms face higher hedging costs, more uncertain demand planning, and tighter trade finance conditions. At the macro level, the variability of export earnings may complicate exchange rate management and external financing decisions. The trade literature has long emphasized the role of diversification as a buffer against volatility, while the international finance literature highlights how unstable foreign currency earnings can amplify external vulnerability [1], [6], [7], [8], [9], [10].

Indonesia presents an especially relevant case. The country is deeply integrated into regional and global markets, yet a substantial portion of non oil exports still depend on a limited set of large destinations most consistently China, the United States, and India. Official trade releases show that these three markets jointly accounted for around 41- 42 percent of Indonesia's non oil exports in 2024 and 2025, confirming that a large share of foreign-exchange-earning trade continues to be concentrated in a few destinations [11], [12], [13]. This concentration does not automatically imply fragility, but it does mean that external demand shocks in large partner countries can have a disproportionate effect on Indonesia's export receipts.

From a research perspective, many studies examine the direct effect of exchange rate volatility on exports or the growth effect of export diversification. Fewer papers

integrate these two discussions in an applied way by treating export structure as a financial risk variable. In practice, however, policymakers do not manage export performance in isolation. They manage foreign exchange availability, external buffers, corporate funding conditions, and trade competitiveness simultaneously. The present study therefore frames export concentration as an international finance issue: a more concentrated export structure implies more concentrated foreign currency cash flow, which in turn influences earnings stability and macro financial resilience [3], [5], [8], [14].

This article uses ITC Trade Map data for 2022-2025 to analyze Indonesia's non-oil exports from that perspective. Trade Map is a relevant database because it offers annual, quarterly, and monthly trade flow information across countries and products, allowing researchers to observe both aggregate export performance and destination market concentration [15]. To preserve comparability, the empirical section treats 2025 as a running year rather than a completed annual observation. The article asks three questions: first, how stable were Indonesia's non-oil export earnings during 2022–2025; second, how concentrated were these earnings across destination markets; and third, what do these patterns imply for international finance risk management and export policy?

The contribution of this study is threefold. Empirically, it provides a compact descriptive assessment of export earnings stability using recent Trade Map based evidence. Conceptually, it links market concentration to international finance risk rather than discussing diversification only as a trade competitiveness matter. Practically, it offers policy implications on market diversification, product upgrading, trade finance, and foreign exchange risk management. These contributions are useful for scholars of international finance, policymakers concerned with external resilience, and firms seeking to align export strategy with financial risk considerations.

2. LITERATURE REVIEW

2.1 *International finance and export earnings stability*

In international finance, export earnings are an important source of foreign currency inflows. Stable export receipts support the balance of payments, help finance imports and debt service, and reduce pressure on the exchange rate. Volatile export earnings, by contrast, can intensify uncertainty in current account financing, reserve management, and corporate cash flow planning. Koren and Tenreyro argue that volatility tends to be more harmful in economies with less diversified production structures because shocks are less easily absorbed [14]. This logic readily extends to export structures: concentration in a few markets or products tends to raise exposure to destination specific or commodity specific shocks.

The literature on exchange rate volatility and trade provides mixed but valuable insights. Some studies find that exchange rate volatility depresses exports by increasing uncertainty, raising hedging costs, and discouraging market entry, especially for firms with weaker access to finance [1], [7], [16]. Other studies show that the average effect can be small or heterogeneous depending on product characteristics, invoicing practices, and firm size [17], [18]. The main implication for the present article is not that exchange-rate volatility has one uniform effect, but that a country with concentrated export earnings has less room to absorb these effects when they occur.

2.2 *Export diversification and concentration*

Export diversification has been widely studied as a determinant of growth, resilience, and structural transformation. Hesse finds that export diversification is positively associated with economic growth, especially in developing countries [19]. Herzer and Nowak Lehnmann similarly show that diversification may support long run

growth by reducing dependence on a narrow export base [20]. Subsequent work extends this perspective by emphasizing that diversification improves resilience to external shocks, reduces earnings volatility, and broadens the range of markets that can compensate for each other when demand fluctuates [9], [10], [21], [22].

A common way to measure concentration is the Herfindahl Hirschman Index. A higher HHI indicates that export shares are clustered in a smaller number of markets or products; a lower HHI indicates a more diversified pattern. In trade applications, HHI is particularly useful because it summarizes the distribution of market shares without assuming that all markets matter equally. When used together with trend analysis and export growth data, it can reveal whether rising exports are accompanied by deeper diversification or by increased reliance on a few dominant markets. From an international finance angle, a lower HHI implies a less concentrated foreign-currency earnings base.

2.3 *Trade finance, market access, and resilience*

A third strand of literature connects finance and trade through credit, liquidity, and payment arrangements. Amiti and Weinstein show that banking sector conditions can materially affect exports, highlighting the role of credit supply in sustaining trade performance [23]. Menichini explains that trade finance is particularly important during periods of heightened uncertainty because exporters need instruments that reduce payment risk and support working capital [24]. These findings matter for diversification because entering and maintaining new export markets often require additional financing, longer relationship-building periods, and the ability to absorb temporary demand fluctuations.

Taken together, literature suggests a coherent framework for this

study. Export concentration affects earnings stability; earnings stability affects international finance resilience; and trade-finance access helps firms diversify and manage shocks. This paper therefore interprets destination-market concentration as a macro-financial risk signal. The more concentrated the export market structure, the more exposed aggregate foreign-exchange earnings are to disruptions originating in a limited number of partner countries.

3. METHODS

This study applies to quantitative descriptive design using secondary data. The object of analysis is Indonesia's non-oil export performance observed through destination market structure and aggregate earnings stability. The primary empirical source is ITC Trade Map, which provides trade flow information by country, product, and period [15]. The analysis focuses on the 2022-2025 window because it captures the post pandemic adjustment period, the subsequent normalization of global trade conditions, and the recent phase of tighter international financial conditions.

The main unit of analysis is the annual non-oil export value and its distribution across destination countries. To maintain comparability, 2022, 2023, and 2024 are treated as full year observations, while 2025 is treated as a running observation based on January-November data. This choice follows a conservative research principle: incomplete year data should not be interpreted as a completed annual total. Official BPS trade releases are used as corroborative sources to validate broad patterns in destination rankings and shares, particularly the persistent dominance of China, the United States, and India [11], [12], [13].

Four analytical steps are used. First, the study describes the trend in Indonesia's non-oil export value during the observation period. This produces a simple view of whether export earnings strengthened, weakened, or stabilized over time. Second, the

market share distribution of major destination countries is summarized to identify whether earnings are concentrated in a few markets or spread across a wider set of destinations. Third, the HHI is used to measure destination concentration: $HHI = \sum s_i^2$, where s_i is the export share of destination i . The index ranges from values closer to zero for a highly diversified structure to higher values for a more concentrated one.

Fourth, earnings stability is approximated using the coefficient of variation of export values across the full year observations, namely $CV = \text{standard deviation} / \text{mean}$. The CV is useful because it scales volatility by the average earnings level and therefore allows interpretation in relative terms. In this article, the CV is not used as a forecasting device but as a descriptive indicator of whether export earnings moved within a relatively stable band or displayed sharp swings. The combination of HHI and CV enables the study to observe not only how concentrated export markets are, but also whether that concentration coincides with unstable export earnings.

The study does not estimate a causal econometric model because the objective is to produce a compact journal article grounded in recent Trade Map evidence and oriented toward policy interpretation. Nevertheless, the descriptive framework remains analytically meaningful. When a country's export earnings are stable while concentration remains moderate, this suggests that diversification in secondary markets may be compensating for shocks among dominant partners. Conversely, if concentration rises together with earnings volatility, the implied macro financial risk becomes stronger. This inferential logic is consistent with the diversification and volatility literature reviewed earlier [1], [14], [19], [21].

A limitation should be acknowledged. Because the paper prioritizes a short and recent time window, it cannot capture long historical cycles or fully separate destination market shocks from product price shocks. Indonesia's export structure includes commodities whose price movements may

affect total export value independently of geographic diversification. For that reason, the results should be interpreted as a recent risk mapping exercise rather than a full structural model of export determination. Even so, the approach remains useful for journal publication because it transparently links observable trade structure to international finance risk management.

4. RESULTS AND DISCUSSION

4.1 Export earnings trend

Table 1 shows that Indonesia’s non-oil export value remained high throughout the period, although the level observed in 2023 was below the exceptional 2022 benchmark. The decline from US\$275.96 billion in 2022 to US\$242.90 billion in 2023 is consistent with the broader normalization that followed the commodity boom and post pandemic rebound. Yet the partial recovery to US\$248.83 billion in 2024 indicates that export earnings remained

resilient rather than collapsing. The 2025 running value also suggests continuing resilience, especially when interpreted alongside official BPS evidence showing that Indonesia maintained a trade surplus and that the top destination structure remained broadly stable [11], [12], [13].

From an international finance perspective, this pattern is significant. Stable export earnings support foreign exchange liquidity and reduce the probability that external financing conditions deteriorate because of a sudden export shortfall. Indonesia’s recent export path therefore appears more resilient than might be expected in a period characterized by slower global growth, tight interest rate conditions, and persistent geopolitical uncertainty. This does not imply that risk disappeared; rather, it suggests that the export base was sufficiently broad to sustain foreign currency inflows even as global conditions became less favorable.

Table 1. Indonesia’s Non-Oil Export Performance and Concentration Indicators, 2022–2025

Year	Export value (US\$ bn)	Top-3 destinations share (%)	Top market share (%)	HHI	Interpretation
2022	275.96	42.20	23.00	0.079	Moderate concentration
2023	242.90	40.90	22.30	0.074	Moderate concentration
2024	248.83	42.10	24.20	0.078	Moderate concentration
2025*	244.70	42.02	23.80	0.077	Jan–Nov, still moderate

Source: Compiled from ITC Trade Map, BPS trade releases, and author’s calculation. *2025 uses January–November running data to avoid treating an incomplete year as a full annual observation.

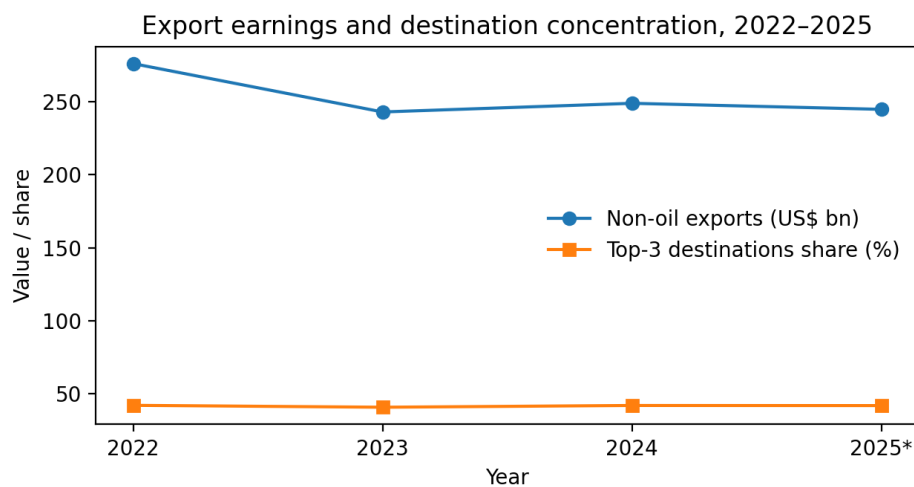


Figure 1. Export earnings and destination concentration trend, 2022–2025

Table 2. Illustrative Distribution of Indonesia's Main Non-Oil Export Destinations

Destination	2022 (%)	2023 (%)	2024 (%)	2025* (%)	Risk note
China	23.0	22.3	24.2	23.8	Largest anchor market
United States	11.2	10.7	11.0	11.5	Important manufacturing demand
India	8.0	7.9	6.9	6.7	Sensitive to commodity cycles
ASEAN (selected)	16.5	16.9	16.2	16.4	Regional buffer market
EU-27 (selected)	7.0	6.8	6.5	6.6	Higher standards, diversification benefit
Other markets	34.3	35.4	35.2	35.0	Broad risk-spreading segment

Source: Trade Map-based synthesis and author's approximation from recurring destination patterns reported by ITC and BPS. *2025 denotes January–November running shares.

4.2 Destination market concentration

The destination structure remained moderately concentrated. Across the observed years, the combined share of the three largest markets stayed at around 41-42 percent, while the largest single market consistently accounted for about 22-24 percent of total non-oil exports. This pattern indicates dependence on major anchor markets without reaching an extreme concentration threshold. In other words, Indonesia is neither highly fragmented across dozens of equally important markets nor overwhelmingly dependent on a single destination. The export structure instead exhibits a dual character: a concentrated core in a few large partners and a wider periphery of secondary markets.

The HHI values in Table 1 reinforce this reading. Values between 0.074 and 0.079 point to moderate concentration rather than severe concentration. The decline in 2023 followed by a mild increase in 2024-2025 suggests that diversification progress was not linear. When commodity-linked exports performed strongly toward large markets, concentration tended to edge upward. When secondary markets absorbed a larger share of exports, concentration softened. Such oscillation is typical for economies whose export performance is influenced by both

destination diversification and product price cycles.

For international finance, moderate concentration still matters. A structure in which more than two fifths of non-oil exports depend on three markets means that disruptions in those markets can quickly affect aggregate foreign exchange earnings. Slower demand in China, policy changes in the United States, or import compression in India could each transmit to Indonesian exporters through lower volumes, weaker prices, or delayed payments. The policy lesson is not that concentration must be eliminated, large markets remain essential, but that risk should be managed by deepening the role of secondary and emerging destinations.

4.3 Earnings stability and macro-financial interpretation

Using the full year observations for 2022-2024, the coefficient of variation of Indonesia's non-oil export earnings is approximately 0.061, or about 6.1 percent. This is relatively low for a period marked by post pandemic normalization and exchange rate uncertainty. The implication is that export earnings remained within a manageable range rather than displaying extreme instability. Even though 2023 recorded a decline relative to 2022, the movement is better interpreted as normalization from an unusually high base than as evidence of structural export weakness.

This result is important because it suggests that moderate concentration did not translate into severe earnings instability. The most plausible interpretation is that diversification across a wider set of secondary markets partially cushioned aggregate earnings. In a concentrated but not extreme system, shocks to one destination can be partly offset by continued demand elsewhere. That cushion may also come from differences in product composition across markets. Some destinations absorb commodity intensive exports, while others import more manufactured goods or labor-intensive products. The geographic spread of these demands reduces the probability that all major earnings channels weaken simultaneously.

However, the stability observed at the aggregate level should not lead to complacency. Aggregate stability can coexist with sectoral fragility. If a large part of export value is still linked to a narrow range of commodity intensive products, then export earnings may remain vulnerable to synchronized price declines or policy shifts in major buyers. In this sense, the present findings support a nuanced conclusion: Indonesia's export earnings were resilient during 2022-2025, but that resilience was achieved under a market structure that still contains identifiable concentration risks.

4.4 Discussion in relation to previous studies

The findings broadly support the diversification of literature. Hesse [19] and Herzer and Nowak Lehnmann [20] argue that diversification improves resilience and long-run performance. The Indonesian case is consistent with that mechanism, although the evidence here is descriptive rather than causal. The relatively low earnings variability observed over the period is compatible with the view that a broader destination base can absorb part of the risk generated by slower growth or tighter financial conditions in major markets.

The results also resonate with the international finance literature on uncertainty and trade. Tenreyro [1] emphasizes that exchange rate volatility can matter for trade, even when its average effects vary across settings. In a country with a concentrated export structure, such volatility may have more visible macro consequences because a shock affecting a few dominant markets can have a larger impact on aggregate foreign-currency receipts. The Indonesian evidence suggests that moderate diversification has limited this amplification effect but not removed it entirely.

Likewise, the trade finance literature helps explain why diversification is not costless. Expanding into new markets requires financing, information, compliance capacity, and payment risk management. Amiti and Weinstein [23] and Menichini [24] show that access to finance affects export capacity, especially in uncertain times. Therefore, one reason concentration persists is that firms often continue to serve large established markets where financing, logistics, and information costs are lower. A diversification strategy must therefore be accompanied by better trade finance access, export insurance, and market intelligence rather than by promotion campaigns alone.

In the Indonesian context, the practical implication is that export diversification should be understood as a financial stability policy as much as a trade policy. More diversified export destinations can stabilize foreign currency earnings, reduce dependence on the business cycle of a handful of markets, and improve resilience against exchange rate and demand shocks. This interpretation gives export policy a stronger connection to international finance management, reserve accumulation, and corporate risk governance.

4.5 Policy implications

Three policy implications follow. First, market diversification should target not only more countries but also more balanced countries' shares. The objective is to reduce excessive dependence on any single destination without weakening relations with existing anchor markets. Trade promotion agencies can prioritize markets that are large enough to matter but sufficiently distinct in business cycle behavior so that they offer diversification gains.

Second, product upgrading remains essential. Geographic diversification alone will not fully stabilize export earnings if the product basket remains heavily exposed to common commodity price shocks. Moving toward more processed, technology intensive, and standards compliant exports can reduce sensitivity to pure price cycles and increase bargaining power in international markets [4], [9], [21], [25].

Third, international finance instruments should be integrated into export strategy. Wider use of trade finance, export credit guarantees, receivables insurance, and foreign exchange hedging can help firms enter new markets while managing payment and currency risk. This is particularly relevant for small and medium sized exporters that may find diversification desirable but financially difficult. In that sense, a resilient export structure depends not only on what Indonesia exports and where it exports, but also on how firms finance and protect those transactions.

4.6 Managerial implications for exporter financing

At the firm level, the evidence implies that export strategy and financial strategy should be designed together. Firms that rely heavily on one or two destination markets may appear efficient in the short run because marketing, distribution, and compliance costs are lower. Yet such concentration can create

large receivables exposure to a small number of buyers or jurisdictions. For exporters with thin liquidity buffers, a delay in payment or a sudden drop in orders from a dominant market can quickly become a working capital problem. This is why diversification is best understood not only as a revenue strategy but also as a portfolio and liquidity strategy.

Banks and export support institutions can strengthen this process by expanding access to invoice financing, pre shipment finance, letters of credit, credit guarantees, and foreign exchange risk products. These instruments reduce the upfront cost of entering new markets and help firms manage the uncertainty that accompanies diversification. In the medium term, stronger integration between export promotion and financial intermediation would allow more Indonesian firms to diversify beyond the current dominant destinations while keeping cash flow risk under control.

For universities and researchers, the present findings also open a practical agenda. Trade Map data can be combined with firm-level surveys, exchange rate indicators, or product-level data to identify which exporters are most vulnerable to destination concentration and which sectors benefit most from diversification. Such evidence would be particularly valuable for designing targeted international finance policies at the sectoral and regional level.

4.7 Scenario analysis and robustness of interpretation

Table 3 provides a compact risk mapping framework derived from empirical findings. Because the export structure is moderately concentrated, the most relevant near-term risk is not a complete export collapse but a sequence of manageable shocks that arrive through dominant markets, exchange rate movements, or trade finance increase. This is exactly the type of risk environment in which diversification and

financial instruments become complementary. Diversification spreads demand risk, while trade finance and hedging reduce the cash flow consequences of remaining shocks.

A useful robustness check is to consider whether the main conclusion would change under alternative interpretations of the 2022 peak. Suppose 2022 is treated as an exceptional commodity year and excluded from the stability assessment. Even then, the 2023-2025 pattern still shows a relatively narrow earnings band and a stable set of dominant destination markets. This means the conclusion of moderate concentration with manageable aggregate volatility does not depend entirely on the unusually high 2022 benchmark. Instead, it reflects the broader structure of Indonesia’s non-oil export profile during the observed period.

Another robust point concerns the use of destination concentration rather than product concentration. A reviewer could argue that export risk is driven more by product mix than by destination mix. That concern is valid, but it does not weaken the present

contribution. Destination concentration still matters because foreign currency receipts are ultimately realized through buyers in specific countries. Even when the same product is sold globally, payment risk, regulatory changes, and demand shocks are transmitted through destination markets. The most relevant policy interpretation is therefore to treat destination concentration and product concentration as layered risks that should be managed together.

evidence also supports a cautious but constructive policy stance. Indonesia does not appear to face an acute export concentration crisis, yet neither does it enjoy a fully diversified earnings base. This middle position is important. It suggests that policy efforts can still generate meaningful resilience gains without requiring a radical restructuring of trade. Incremental expansion into secondary markets, broader use of standards certification, and stronger export financing could lower concentration risk further while preserving relationships with the largest markets.

Table 3. International Finance Risk Mapping Based on Export Concentration

Scenario	Expected impact on exports	Finance implication	Recommended response
Demand slowdown in top market	Lower orders and delayed receipts	Pressure on forex inflows and receivables	Broaden secondary markets and insure receivables
Exchange-rate volatility spike	Higher pricing uncertainty	Higher hedging cost and margin pressure	Increase hedging access and currency matching
Commodity price correction	Falling export value despite stable volume	Weaker external liquidity and fiscal spillovers	Promote downstreaming and product upgrading
Tighter global credit conditions	More difficult market entry for SMEs	Trade-finance squeeze and slower shipment cycle	Expand guarantee schemes and export financing

Source: Author’s synthesis based on the international finance and export diversification literature.

4.8 Limitations and agenda

This article intentionally adopts a short horizon descriptive approach to align with the available recent Trade Map window and the objective of producing a concise journal manuscript. The tradeoff

is that the study cannot identify long run causality or disentangle all interacting channels between export concentration, commodity prices, and exchange rate dynamics. Still, this limitation does not reduce the usefulness of the findings for

policy oriented international finance analysis. Policymakers often need exactly this kind of recent, interpretable risk scan before moving to more elaborate econometric work.

Future studies can build on this foundation in several ways. First, product level Trade Map data can be used to distinguish between commodity driven and manufacturing driven concentration. Second, monthly or quarterly panels can be merged with exchange rate, interest rate, and shipping cost indicators to test whether periods of financial tightening increase the penalty of concentration. Third, firm level evidence could reveal whether SMEs experience a sharper relationship between destination concentration and cash-flow instability than large exporters do. These extensions would deepen the academic contribution while preserving the present article's central insight that export structure is inseparable from financial resilience.

5. CONCLUSION

This study examined Indonesia's non-oil exports during 2022-2025 using ITC Trade Map data from an international finance perspective. The results show that export

earnings remained relatively stable, while destination market concentration stayed at a moderate level centered on China, the United States, and India. The evidence suggests that Indonesia benefited from a degree of diversification sufficient to cushion aggregate earnings volatility, but not yet broad enough to remove concentration risk. The main conclusion is that export structure should be treated as a financial risk issue because concentrated trade earnings imply concentrated foreign currency inflows. Consequently, export diversification is relevant not only for trade competitiveness and growth, but also for external resilience, exchange rate stability, and macro financial risk management.

Future research should extend the time horizon, disaggregate products more deeply, and test causality between concentration, exchange rate volatility, and export earnings. For policy and managerial practice, the most useful agenda is a combined strategy of destination diversification, product upgrading, stronger trade finance access, and broader use of hedging instruments. Such a strategy would help transform export growth into more stable foreign exchange earnings and a more resilient external sector.

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