



# CONSTANT MARKET SHARE ANALYSIS OF VIETNAM'S SEAFOOD EXPORTS TO THE UNITED STATES AND CHINA

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**Abstract.** Vietnam's seafood industry is one of the country's most important export sectors, but it faces growing competition and stricter standards in major markets such as the United States (U.S.) and China. This study applies the Constant Market Share Analysis (CMSA) method to examine the factors behind changes in Vietnam's seafood exports to these two markets during 2010–2022. The results show that export growth in recovery periods was mainly driven by market expansion and interaction effects, particularly in the U.S. market. However, the competitive effect is often negative, especially in China, suggesting limitations in product competitiveness. The findings also indicate that exports to China rely largely on market demand, whereas export performance in the U.S. market reflects a more complex combination of scale, competitiveness, and interaction effects. These results highlight the importance of improving competitiveness and increasing the share of higher value-added seafood products.

**Keywords:** constant market share analysis (CMSA), seafood exports, export dynamics, the U.S. market, the Chinese market

## 1. Introduction

The fisheries sector is one of the key economic sectors of Vietnam, contributing significantly to GDP growth, employment creation, and income enhancement for millions of workers in coastal and Mekong Delta regions. According to the General Statistics Office of Vietnam (GSO) [1], Vietnam's fisheries export value reached nearly USD 10 billion in 2023, an increase of 12.7% compared to the previous year. Key products such as shrimp, pangasius, and tuna have maintained significant market shares in many major export markets [2].

Fisheries exports play an important role in maintaining Vietnam's trade balance and promoting more sustainable production practices [3]. However, the sector is increasingly challenged by intensifying international competition, particularly from major exporters such as Thailand, Ecuador, India, and Indonesia, as well as stricter technical barriers and trade defense measures in major markets including the United States and China [4], [5]. At the domestic level, fragmented small-scale production, weak value-chain linkages, low value addition, and inefficiencies in logistics and processing continue to constrain the competitiveness of the

industry. At the same time, diversifying international consumer demand increasingly requires compliance with quality standards, including product quality, traceability, environmental certification, and supply-chain transparency, particularly in high-standard markets such as the United States and the European Union [6], [7].

In this context, analyzing the factors influencing Vietnam's fisheries exports is essential for assessing its competitive performance in the global market. In particular, the United States and China are two of Vietnam's most important seafood export markets, each characterized by distinct demand patterns, regulatory frameworks, and competitive conditions. However, empirical studies examining the drivers of Vietnam's seafood export dynamics in these two markets remain relatively limited. Therefore, this study employs the Constant Market Share Analysis (CMSA) method to examine the relative contributions of market size, competitiveness, and product structure to export growth in these two strategic markets. The CMSA method has been widely applied in international research to evaluate export competitiveness and trade performance [8–10]. The findings of this study provide both empirical and policy-relevant insights, supporting efforts to enhance competitiveness, improve adaptability to market changes, and promote sustainable development in the context of globalization and climate change.

This study provides an updated analysis of Vietnam's seafood exports using the CMSA framework. It also compares export performance between the Chinese and U.S. markets, highlighting differences in demand and competitiveness. Using both first- and second-level decomposition, the study offers a more detailed view of the factors driving export performance.

## **2. Data and Methodology**

### **2.1 Data Sources**

This study uses secondary data on Vietnam's seafood exports during the period 2010–2022. The data are collected from several reliable sources, including official statistics from the General Statistics Office of Vietnam and the General Department of Vietnam Customs, as well as industry reports from the Vietnam Association of Seafood Exporters and Producers (VASEP). Detailed bilateral trade data are mainly obtained from the UN Comtrade database [11], which provides export values by product category and destination market. Based on these data, the study examines Vietnam's seafood exports to two major markets: the United States and China.

The analysis focuses on major seafood product groups classified under the Harmonized System (HS), including HS 0303 (frozen fish), HS 0304 (fish fillets and other fish meat such as pangasius and tuna), HS 0305 (dried, salted, or smoked fish), HS 0306 (crustaceans, mainly shrimp), and HS 0307 (mollusks such as squid and octopus). These product groups represent the core structure of Vietnam's seafood exports and account for a substantial share of the country's export value during the study period.

## 2.2 Constant Market Share Analysis (CMSA)

To analyze the performance of Vietnam's seafood exports, this study applies the Constant Market Share Analysis (CMSA) method. CMSA decomposes changes in export value into components reflecting changes in market demand and export competitiveness. The method assumes that if a country's export competitiveness remains unchanged, its market share in the destination market remains constant over time.

The basic identity underlying the CMSA framework is defined as:

$$S = \frac{q}{Q} \Rightarrow q = S \cdot Q$$

where  $S$  denotes Vietnam's export market share in the destination market,  $q$  represents Vietnam's seafood export value, and  $Q$  denotes the total seafood import value of the destination market.

Following the standard CMSA approach, the change in export value between two periods (0 and 1) is decomposed using a discrete (Laspeyres-type) formulation based on base-period weights. Accordingly, the total change in exports can be written as:

$$\Delta q = S_0 \Delta Q + \Delta S Q_0 + \Delta S \Delta Q$$

where  $\Delta q = q^1 - q^0$ ,  $\Delta Q = Q^1 - Q^0$ , and  $\Delta S = S^1 - S^0$ .

The first term  $S_0 \Delta Q$  represents the scale (or demand) effect, capturing changes in exports due solely to variations in total import demand while holding market share constant. The second term  $\Delta S Q_0$  reflects the competitive effect, measuring changes in exports resulting from variations in Vietnam's market share, given constant market size. The final term  $\Delta S \Delta Q$  is the interaction effect, capturing the simultaneous changes in both market size and market share.

To provide a more detailed analysis, the CMSA framework is extended to a second-level decomposition following Jepma (1989) [12], which allows export changes to be analyzed across

product groups. Let  $j$  index seafood product categories. Then, total export change can be expressed as:

$$\Delta q = \sum_j (S_j^0 \Delta Q_j + Q_j^0 \Delta S_j + \Delta S_j \Delta Q_j)$$

Following the formulations of Ahmadi-Esfahani (2006) [13] and Ávila and González (2012) [14], this expression can be further decomposed into six effects:

$$\Delta q = GE + PE + CAGE + CPE + SOE + RE$$

where:  $GE = S_T^0 \Delta Q_T$  (*growth effect*)

$$PE = \sum_j (S_j^0 \Delta Q_j - S_T^0 \Delta Q_T) \text{ (product effect)}$$

$$CAGE = \Delta S_T Q_T^0 \text{ (competitive aggregate growth effect)}$$

$$CPE = \sum_j (\Delta S_j Q_j^0 - \Delta S_T Q_T^0) \text{ (competitive product effect)}$$

$$SOE = \sum_j \left[ \left( \frac{Q_T^1}{Q_T^0} - 1 \right) \Delta S_j Q_j^0 \right] \text{ (second-order effect)}$$

$$RE = \sum_j \left[ \Delta S_j \Delta Q_j - \left( \frac{Q_T^1}{Q_T^0} - 1 \right) \Delta S_j Q_j^0 \right] \text{ (residual effect)}$$

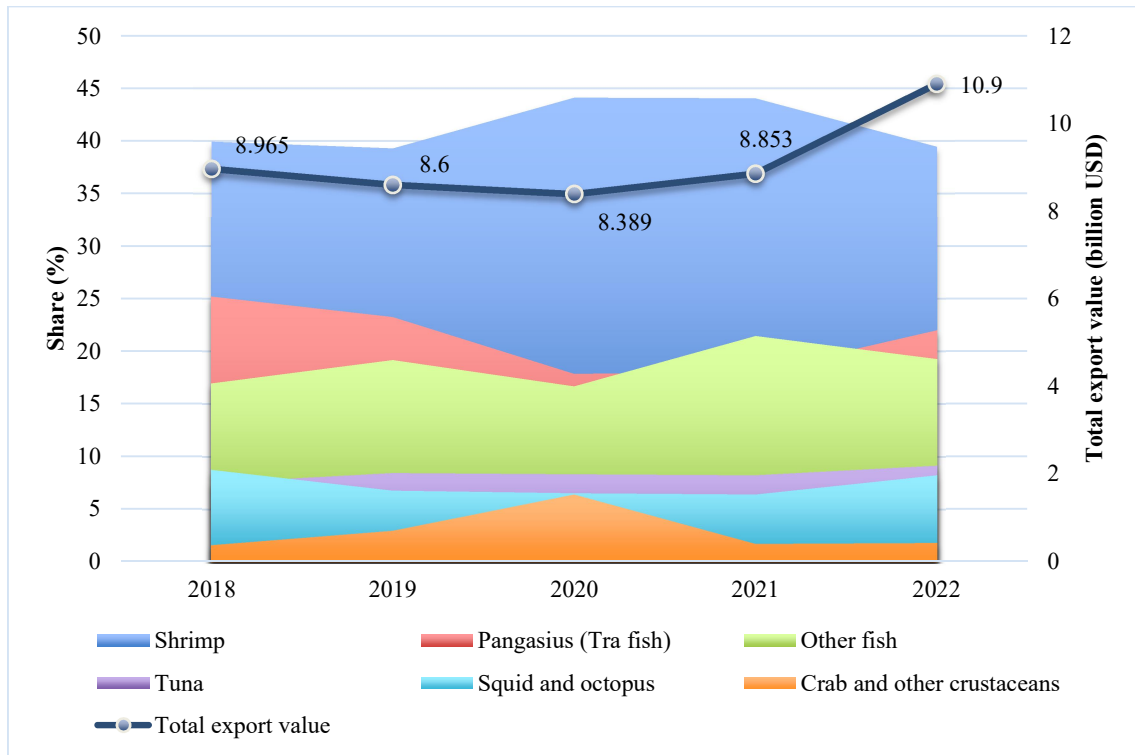
Here, subscript T denotes the total across all product groups, while  $j$  indexes individual seafood categories. Superscripts 0 and 1 denote the initial and final periods, respectively.

This extended decomposition provides a more detailed breakdown of export growth, allowing the identification of the relative contributions of overall market expansion, product structure, and competitiveness at both the aggregate and product levels.

### 3. Results and Discussion

#### 3.1. Current status of Vietnam’s seafood exports

Figure 1 presents the composition and total value of Vietnam’s seafood exports over the period 2018–2022. Export performance during these years was somewhat uneven. Total export value declined from USD 8.97 billion in 2018 to USD 8.39 billion in 2020, before rebounding to USD 10.9 billion in 2022. This trend appears to be closely linked to disruptions caused by the COVID-19 pandemic and the subsequent recovery in global demand.



**Figure 1.** Composition and total value of Vietnam’s seafood exports, 2018–2022

Source: Compiled and calculated from data in the VASEP report

Shrimp remained the dominant export product throughout the period, with its share staying fairly stable at around 40–44%. Pangasius (tra fish), the second-largest category, experienced a noticeable decline between 2018 and 2020, before recovering in 2022. Meanwhile, the share of other fish rose, particularly in 2021, suggesting some adjustment in export composition rather than any fundamental shift.

Other product groups—tuna, squid and octopus, and crab and other crustaceans—accounted for smaller shares and showed moderate fluctuations. A striking feature is the sharp increase in crab and other crustaceans in 2020, which was not maintained in the following years, indicating that this change was likely driven by short-term market factors.

Overall, these movements do not point to any major structural change. Shrimp, pangasius, and other fish continued to dominate export value, and the overall export structure remained broadly stable over the period.

### 3.2. The first-level analysis of CMSA

At the first level, Constant Market Share Analysis (CMSA) decomposes changes in Vietnam's seafood exports into three components: scale effect, competitive effect, and interaction effect. This approach helps identify whether export fluctuations are mainly driven by market expansion or by changes in Vietnam's competitive position. Results from the first-level CMSA (Table 1) indicate two dominant and consistent patterns across the study period 2010–2022.

First, the scale effect appears to be the dominant driver of export growth in the Chinese market. Across most sub-periods, increases in Vietnam's seafood exports to China are primarily associated with expanding import demand rather than improvements in relative competitiveness. Even during the post-2021 recovery, export growth continued to rely mainly on favorable market demand, as reflected in the consistently strong contribution of the scale effect. This suggests that Vietnam's export performance in China is largely demand-driven rather than supported by sustained competitive advantages.

Second, the competitive effect is unstable and often negative in the U.S. market, indicating ongoing competitiveness constraints. Although exports to the United States benefited at times from market expansion and interaction effects, the negative competitive effect frequently offset these gains. Most notably, during the 2021–2022 period, the competitive effect declined to -67.11%, the lowest level recorded, reflecting intensified competition, stricter trade defense measures, and stronger pressure from major exporters. As a result, export growth in the U.S. market remains vulnerable and depends largely on external demand conditions rather than improved competitiveness.

This negative competitive effect may reflect increasing pressure from major seafood exporters such as India, Ecuador, and Thailand, particularly in price-sensitive segments. In addition, stricter technical standards, traceability requirements, and anti-dumping measures in the U.S. market may have raised compliance costs for Vietnamese exporters. Differences in product quality, certification, and value-added processing could also have contributed to the decline in relative competitiveness.

**Table 1.** Results of the level 1 CMSA analysis

Period	Importing country	Export value and share	Change in export value	Scale effect	Competitive effect	Interactive effect
2010 – 2012	China	Export value	53.56	57.57	-3.99	-0.03
		Share	100	107.49	-7.44	-0.05
	USA	Export value	85.92	34.51	-33.35	84.76
		Share	100	40.16	-38.81	98.65
2013 - 2015	China	Export value	-16.56	1.18	-35.51	17.77
		Share	100	-7.11	214.37	-107.25
	USA	Export value	-65.65	-66.56	-13.47	14.38
		Share	100	101.38	20.52	21.90
2016 - 2018	China	Export value	74.29	89.03	-24.68	9.95
		Share	100	119.84	-33.23	13.39
	USA	Export value	184.86	115.18	33.20	36.49
		Share	100	62.30	17.96	19.74
2019 - 2020	China	Export value	-114.78	-50.08	-74.95	10.25
		Share	100	43.63	65.30	-8.93
	USA	Export value	-64.34	-57.51	-18.50	11.67
		Share	100	89.39	28.75	-18.14
2021 - 2022	China	Export value	200.23	162.94	21.23	16.06
		Share	100	81.38	10.60	8.02

Period	Importing country	Export value and share	Change in export value	Scale effect	Competitive effect	Interactive effect
	USA	Export value	114.07	53.03	-76.55	137.58
		Share	100	46.49	-67.11	120.62

Source: Compiled and calculated from UN Comtrade data

Note: Export value is measured in million USD; Share (proportion) is expressed as percentages (%).

Finally, the interaction effect fluctuates considerably across sub-periods in both markets, implying that changes in export performance reflect the combined influence of market demand and unstable competitiveness. Overall, the results do not indicate a clear structural improvement in Vietnam’s export competitiveness during the study period.

### 3.3. Second-level CMSA analysis

#### 3.3.1. Analysis of the Chinese market

The second-level CMSA results for Vietnam’s seafood exports to China reveal significant variations in the contributions of the scale, competitive, and interaction effects across different sub-periods. Overall, export growth to China is primarily driven by the scale effect, while the competitive effect remains unstable and often negative, and the interaction effect plays a relatively minor role.

#### Scale Effect

As shown in Table 2, the growth of Vietnam’s seafood exports to the Chinese market during the study period is mainly driven by the scale effect, particularly the Product Scale Effect (PE). Across most sub-periods, PE accounts for the largest share of export value growth, often exceeding 60% of total growth and in some phases even exceeding the actual export growth, such as 98.63% in 2010–2012 and 77.01% in 2016–2018. This finding indicates that expansion in product-specific demand plays a decisive role in shaping export performance. In contrast, the General Market Growth Effect (GE) remains relatively smaller and more volatile, contributing 8.87% in 2010–2012 and 20.99% in 2021–2022, while showing negative or marginal contributions during contraction periods. The clear dominance of PE, as reported in Table 3, indicates that Vietnam’s export growth in China depends largely on product-specific demand rather than

overall market expansion, underscoring the importance of product structure and specialization in capturing scale-driven opportunities.

**Table 2.** Results of the level 2 CMSA analysis for China

Period	2010 - 2012		2013 - 2015		2016 - 2018		2019 - 2020		2021 - 2022	
	Export value	%	Export value	%	Export value	%	Export value	%	Export value	%
<b>Change in Export Value</b>	53.56	100	-16.56	100	74.29	100	-114.78	100	200.23	100
<b>1. Scale Effect</b>	57.57	107.49	1.18	-7.11	89.03	119.84	-50.08	43.63	162.94	81.38
Growth Effect (GE)	4.75	8.87	1.44	-8.68	31.82	42.83	-4.39	3.83	42.03	20.99
Product Scale Effect (PE)	52.82	98.63	-0.26	1.57	57.21	77.01	-45.69	39.81	120.91	60.39
<b>2. Competitive Effect</b>	-3.99	-7.44	-35.51	214.37	-24.68	-33.23	-74.95	65.3	21.23	10.6
Composite Competitive Growth Effect (CCGE)	2.54	4.74	-0.2	1.24	-7.45	-10.03	18.38	-16.01	-67.27	-33.59
Competitive Product Effect (CPE)	-6.53	-12.19	-35.3	213.13	-17.23	-23.19	-93.33	81.31	88.49	44.2
<b>3. Interactive Effect</b>	-0.03	-0.05	17.77	-107.25	9.95	13.39	10.25	-8.93	16.06	8.02
Second-order Effect (SOE)	-3.19	-5.95	-1.7	10.29	-18.24	-24.56	0.78	-0.68	13.63	6.81
Residual Effect (RE)	3.16	5.9	19.47	-117.54	28.19	37.95	9.47	-8.25	2.43	1.21

Source: Compiled and calculated from data of UN Comtrade

*Competitive Effect*

In contrast to the scale effect, the competitive effect of Vietnam's seafood exports to China is largely negative, implying persistent limitations in export competitiveness. In several periods, this effect offset a significant part of the growth generated by the scale effect and contributed substantially to export decline. This is particularly evident in 2013–2015, when the competitive effect reached –35.51 million USD (214.37%), and in 2019–2020, when it fell to –74.95 million USD (65.30%).

These negative outcomes are mainly associated with the negative Competitive Product Effect (CPE), suggesting structural weaknesses in product competitiveness and market adaptation. Although the Composite Competitive Growth Effect (CCGE) shows some improvement in certain periods, such as 18.38 million USD in 2019–2020, its contribution remains insufficient to offset the negative impact of product-level competitiveness. Overall, these results suggest that Vietnam faces difficulties in maintaining or strengthening its competitive position relative to other seafood-exporting countries in the Chinese market.

This may be associated with the rapid expansion of competing suppliers such as India and Ecuador, as well as shifts in China's import policies and increasing quality and safety requirements. In particular, changes in border control measures and informal trade channels may have affected the stability of Vietnam's exports to this market.

*Interactive Effect*

The interactive effect remains relatively small and unstable throughout the study period, indicating limited synergy between market expansion and competitiveness. As reported in Table 2, its contribution varies across sub-periods, from –0.03 million USD in 2010–2012 to 9.95 million USD in 2016–2018, and 16.06 million USD in 2021–2022, accounting for 8.02% of total export growth. Although the interaction effect tends to increase during recovery periods, its contribution remains secondary compared with the scale effect and lacks stability over time.

Overall, the second-level CMSA analysis indicates that the growth of Vietnam's seafood exports to China is primarily driven by the expansion of market demand, as reflected in the dominant role of the scale effect. However, the frequently negative competitive effect highlights persistent challenges in export competitiveness, particularly at the product level. Meanwhile, the interaction effect contributes only modestly to export growth and remains unstable across periods. These findings imply that while China offers considerable opportunities through

demand expansion, Vietnam needs to strengthen product competitiveness and market adaptability in order to achieve more sustainable export growth.

### 3.3.2. *Analysis of the U.S. market*

The second-level CMSA results for Vietnam's seafood exports to the United States reveal notable fluctuations in the contributions of the scale, competitive, and interaction effects across different sub-periods. Unlike the Chinese market, where export growth is mainly driven by the scale effect, the U.S. market shows a more complex pattern in which the interaction effect plays a particularly significant role in several periods.

#### *Scale Effect*

As reported in Table 3, the scale effect plays an important but uneven role in shaping Vietnam's seafood exports to the U.S. market. Over the entire study period, this effect contributes positively in recovery phases but turns strongly negative during demand contractions. In 2010–2012, the scale effect reached USD 34.51 million, accounting for 40.16% of total export growth. However, this effect turned negative in 2013–2015, falling to –USD 66.56 million (101.38%), indicating a contraction in U.S. import demand during that period. The scale effect recovered strongly in 2016–2018, reaching USD 115.18 million, equivalent to 62.3% of export growth. Nevertheless, it declined again in 2019–2020, reflecting the disruptions caused by global trade tensions and the COVID-19 pandemic. In the most recent period (2021–2022), the scale effect remained positive at USD 53.03 million, accounting for 46.49% of export growth.

These results suggest that while demand conditions in the U.S. market influence Vietnam's seafood exports, the scale effect is less dominant and more volatile compared with the Chinese market.

#### *Competitive Effect*

The competitive effect exhibits a highly unstable pattern across sub-periods, reflecting fluctuations in Vietnam's export competitiveness in the U.S. market. In 2010–2012, the competitive effect was negative (–USD 33.35 million, or –38.81%), implying a decline in competitiveness relative to competing exporters. The situation improved slightly in 2016–2018, when the competitive effect turned positive (USD 33.2 million, accounting for 17.96% of export growth), suggesting a temporary strengthening of Vietnam's competitive position in the U.S. seafood market. However, this improvement was not sustained. In 2019–2020, the competitive effect again became negative (–USD 18.5 million), and it deteriorated further in 2021–2022, reaching –USD 76.55 million (–67.11%).

**Table 3.** Results of level 2 CMSA analysis for the United States

Period	2010 - 2012		2013 - 2015		2016 - 2018		2019 - 2020		2021 - 2022	
	Export value	%	Export value	%	Export value	%	Export value	%	Export value	%
<b>Change in Export Value</b>	85.92	100	-65.65	100	184.86	100	-64.34	100	114.07	100
<b>1. Scale Effect</b>	34.51	40.16	-66.56	101.38	115.18	62.3	-57.51	89.39	53.03	46.49
Growth Effect (GE)	9.59	11.16	-6.89	10.49	8.29	4.49	-3.22	5	6.97	6.11
Product Scale Effect (PE)	24.92	29	-59.67	90.89	106.88	57.82	-54.29	84.38	46.06	40.38
<b>2. Competitive Effect</b>	-33.35	-38.81	-13.47	20.52	33.2	17.96	-18.5	28.75	-76.55	-67.11
Composite Competitive Growth Effect (CCGE)	4.41	5.13	-10.13	15.44	1.69	0.91	-1.12	1.74	2.48	2.18
Competitive Product Effect (CPE)	-37.76	-43.95	-3.34	5.08	31.5	17.04	-17.38	27.01	-79.03	-69.28
<b>3. Interactive Effect</b>	84.76	98.65	14.38	-21.9	36.49	19.74	11.67	-18.14	137.58	120.62
Second-order Effect (SOE)	-8.8	-10.25	1.75	-2.67	5.68	3.07	1.42	-2.21	-7.88	-6.91
Residual Effect (RE)	93.57	108.9	12.63	-19.23	30.82	16.67	10.25	-15.92	145.47	127.53

Source: Compiled and calculated from data of UN Comtrade

This pattern is largely driven by fluctuations in the Competitive Product Effect (CPE), which remains negative in most periods. The results indicate that Vietnam continues to face significant challenges in maintaining product-level competitiveness in the U.S. market. These challenges may stem from intensified competition from other exporters, as well as stricter regulatory frameworks in the U.S., including food safety standards, anti-dumping policies, and sustainability requirements. Furthermore, differences in product quality, branding, and supply chain efficiency may limit Vietnam's ability to sustain a strong competitive position in this market.

#### *Interactive Effect*

The interactive effect plays a particularly important role in explaining export dynamics in the U.S. market. As reported in Table 3, it contributes substantially in several periods. In 2010–2012, the interaction effect reached USD 84.76 million, accounting for 98.65% of total export growth. A similarly strong contribution is observed in 2021–2022, when it increased sharply to USD 137.58 million, representing 120.62% of export growth. Although the interaction effect remains positive in most periods, its magnitude varies considerably. For instance, in 2013–2015 it contributed USD 14.38 million, while in 2016–2018 it reached USD 36.49 million. These fluctuations indicate that the interaction between market demand and competitiveness plays a more prominent role in the U.S. market compared with the Chinese market.

Overall, the second-level CMSA results indicate that Vietnam's seafood export performance in the U.S. market is influenced by a more balanced combination of scale, competitive, and interaction effects. While the scale effect reflects changes in U.S. import demand, the competitive effect remains unstable and frequently negative, highlighting persistent challenges in export competitiveness. At the same time, the interaction effect contributes significantly to export growth in several periods, suggesting that the alignment between market demand and product competitiveness plays an important role in shaping Vietnam's seafood export performance in the United States.

#### **3.4. CMSA decomposition of Vietnam's seafood exports at the product sub-sector level**

This section further decomposes Vietnam's seafood export performance at the product sub-sector level using the CMSA framework, focusing on major seafood categories including fish, crustaceans, and mollusks.

CMSA results show notable differences between the Chinese and U.S. markets for fish products (HS 0303, 0304, 0305). In China, export growth is primarily driven by the scale effect,

particularly for frozen fish and fillets, implying strong dependence on expanding import demand. The competitive effect is often negative, indicating persistent limitations in product competitiveness, despite occasional periods of rapid market recovery. Processed fish (HS 0305) shows relatively greater adaptability, with both competitive and scale effects contributing to export growth after 2016.

In contrast, competitiveness appears to play a more prominent role in the U.S. market. While frozen fish exports remain relatively volatile and still influenced by market size, fillets and fish meat (HS 0304) stand out as the most dynamic segment. This is particularly evident in 2021–2022, when competitive gains accounted for a substantial share of export growth, suggesting stronger product differentiation and greater potential for upgrading toward higher value-added products.

For crustacean products (HS 0306), export patterns differ markedly between the Chinese and U.S. markets. In China, exports fluctuated considerably over time, with a prolonged decline during 2013–2020 associated with a weakening competitive position. The sharp rebound in 2021–2022 reflects a recovery supported by both improved demand and a partial strengthening of competitiveness.

In the U.S. market, crustacean exports show more pronounced cyclical movements. Declines in 2010–2015 and again in 2021–2022 point to ongoing difficulties in sustaining competitiveness. Although some improvement was observed in 2019–2020, this was short-lived and did not carry over into subsequent periods, highlighting the fragility of this segment under competitive pressure.

For mollusk products (HS 0307), exports to China remain relatively stable and are largely supported by expanding demand. The strong growth observed in 2021–2022 follows this general pattern. By contrast, exports to the U.S. are more modest and irregular, with no consistent growth trajectory. This suggests that the segment has yet to establish a solid competitive position and remains sensitive to changes in market conditions.

## **4. Conclusion and Policy implications**

### **4.1. Conclusion**

This study examines the export performance of Vietnam's seafood products in the Chinese and U.S. markets using the Constant Market Share Analysis (CMSA) framework. By decomposing export growth into scale, competitive, and interaction effects, the study provides a

clearer understanding of the factors shaping Vietnam's seafood export dynamics across markets and product groups.

The results show important differences between the two markets. In the Chinese market, export growth is driven mainly by the scale effect, indicating that Vietnam's seafood exports depend largely on import demand expansion rather than sustained improvements in competitiveness. By contrast, export performance in the U.S. market reflects a more complex combination of scale, competitive, and interaction effects. At the product level, fish fillets and fish meat (HS 0304) show stronger competitive potential in the U.S. market, while processed fish products appear relatively more adaptable across changing market conditions. Crustacean exports, however, remain more vulnerable to competitive pressure in both markets.

Overall, the findings suggest that Vietnam's seafood export growth has not yet been supported by broad and stable improvements in competitiveness across product groups and destination markets. The study therefore contributes to a better understanding of the structural drivers of Vietnam's seafood export performance and provides an empirical basis for policy discussion.

#### **4.2. Policy implications**

To sustain export growth in the Chinese market, policy efforts should focus on maintaining stable market access and improving responsiveness to changes in demand. This includes strengthening trade facilitation mechanisms, making more effective use of existing trade agreements, and improving coordination along the supply chain to ensure more stable export volumes.

In the U.S. market, where competition is more intense and standards are stricter, the priority should be to reinforce product competitiveness. This can be achieved through continued investment in processing technologies, stronger quality control, and stricter compliance with food safety, traceability, and sustainability requirements. Strengthening branding and product differentiation is also important for maintaining market position in higher-value segments.

At the product level, policies should encourage a shift toward segments with greater value-added potential. Expanding processing capacity and supporting innovation in seafood products can help reduce reliance on low-margin exports and improve export resilience. At the same time, segments facing stronger competitive pressure require targeted support to improve efficiency and reduce cost disadvantages.

Finally, improving supply chain reliability remains essential. Investment in traceability systems, certified aquaculture zones, and cold-chain logistics can help stabilize input supply and ensure more consistent product quality. Strengthening these foundations will improve both competitiveness and the sector's ability to adapt to changing market conditions.

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