

Comparative study of international demand for Myanmar's fishery export

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Abstract

The main objective of this paper is to explore the relationship between fishery exports and revealed comparative advantage (RCA) indicators of Myanmar. Agricultural is known as the engine for economic growth in the developing nations of the world. The fishery sector is one important sub-sector in the agriculture sector. The role of fisheries becomes more important in the recent decade by increasing its share in GDP. From 1990 to 2000, the amount of Myanmar's fishery export increase has been significantly increased due to the trade liberalization. But Myanmar's fishery export decline in recent year because Myanmar face many barriers such as an export tariff, trade sanctions, low quality and safety of fish for export, inadequate infrastructure, low technology, climate change and depletion of fishery resources which have been largely affected on Myanmar's fishery export. Myanmar's policymaker tries to improve the export efficiency of the fishery sector. To fulfill this objective, the Myanmar government in cooperation with the EU and GIZ to encourage fish production and support private sector investment into post-harvest facilities.

Keywords: Fishery export, Revealed Comparative Advantage.

1. Introduction

Today, the drivers of development transformation is the appointing of global markets. Export has a major role to play in the development process. The development of the agriculture sector has been a major issue in developing countries. Most of the studies analyze the productivity growth of the agriculture sector which plays an important role in the economic development of a country (Gollin et al., and Restuccia et al., 2008). The fishery sector is the main sub-sector of the agriculture sector.

Nikijul and Bahi, (1999) argued that the export and the output growth in the fishery sub-sector itself have a positive effect on the structure of production, availability of and accessibility to capital, technologies, and supply of skilled labors and mutual impact with each other. Fishery export contributes to the major sector for the socio-economic development of Myanmar. In the last decade, the Fisheries sector contributes it higher to the national GDP and also the main source of export earnings.

Myanmar is situated in Southeast Asia and possesses 213,720 km² of marine water along the India Ocean, the Bay of Bengal and the Andaman Sea. It is the second-largest country in South East Asia and has a large north to the south river which provides the resource for freshwater and brackish water fisheries. Myanmar's fishery sector contributes fourth of the national gross domestic product (GDP) and the fourth largest source of foreign exchange earnings in the past five years. Between 2010 and 2012 seafood export from Myanmar have increased from less than €190 million to €220 million. This is lower than the export values of Bangladesh (€ 424 million) and Thailand (€2.2 billion). After the sanctions were eliminated, the export is expected to increase not only in the short term but also more significantly in the long run if the production of high-value species increases due to the enabling environment for international trade is improved.

Fisheries sector created about 3 million people in direct employment and about 12-15 million indirectly benefit from fisheries over food security, employment, and income. The earnings from fisheries export were about US\$360 million in 2005-2006 that was 80% larger than the earnings at the end of the 1990s. Investment in fisheries has boosted in recent years because of increasing demand in the local market as well as its large

potential in the export market. Aquaculture production was estimated at 22% of the total fisheries production and about 20% of the fisheries exports.

Three years projected on the development of shrimp and finfish aquaculture launched in (2000-2002). After the implementation of this project, the established aquaculture accounted for as much as 407000 and about half a million tons harvest. In 2002-2004, Myanmar was listed in the world's top ten aquaculture production nation with a 45.1% Average Annual Percentage Growth Rate (APR).

Zou et al. (2003) argued that the exporters should have capability in product development, distribution, communication and pricing with its various advantages like positional advantages, low-cost advantage and branding advantage along with its performance in the export market over the years can create export potential. According to the above reasons, this paper investigates the performance and contribution of fishery sector exports in the world fishery trade situation and Myanmar's merchandise trade. And tries to answer the question about what forms the basis of trade and which product a country wishes to export. So, this analysis leads to the concept of Comparative Advantage on a single product, such as Myanmar's fishery export.

1.1 International demand for Myanmar's Fishery export

The major fishery export product is alive fish, fresh frozen or chilled and processed. The fishery's export can provide an efficient amount of foreign exchange. The fishery product export has increased from 1995 to 2010 but declined after 2010. Other marine product export has increased annually until 2015. The national export growth rate has increase per year but the fishery export decline since 2013 (see Table 1).

Table 1: Export values of fishery product and National export (1995- 2015)

	Units	1995	2000	2005	2010	2015
Fish export	US. \$	28	45	88	200	109
Prawn export	US. \$	72	92	99	65	30
Other Marine Products export	US. \$	9	7	10	22	21

National export	US. \$	897	1,961	3,558	8,861	12,524
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Sources: Fishery department

Myanmar's fisheries and aquaculture export increased by almost 10 percent from its open economy in 2012. The most important export market is still in Asia and the Middle East but from 2012 United State became the export partner. In 2016 almost US\$ 33 million trade with the US (see Table 2). China mainly imports high-value products such as crab and eel and Thailand imports low-value fish products.

Table 2: the Export value of fishery products by country of destination, 2012-2016, (US \$, 1000)

Year	2012	2013	2014	2015	2016
United State	-	18,717	-	37,060	32,941
United Kingdom	15,422	23,067	29,821	31,324	32,834
Malaysia	38,583	38,197	35,704	34,319	37,566
Saudi Arabia	40,089	39,276	36,954	40,657	36,360
Thailand	45,913	32,159	26,192	20,781	81,935
China	59,676	55,057	50,716	33,069	27,918
Japan	75,737	80,951	84,503	61,306	58,397
Other countries	80,284	80,234	129,601	88,725	74,578
Total	355,704	367,658	393,491	347,241	382,529

Source: FAO

2. Literature review

Most of the trade literature explores the concept of comparative cost advantage and gains from trade. According to David Ricardo, the country export the commodity which has a comparative advantage and imports those commodity which has a comparative disadvantage. Ricardo emphasis physical and natural influences over competitiveness, technological and human factors which were given importance by later economists (Goldin and Brown, 1992). Today is the era of trade agreements and customs unions but

the comparative advantage is still important and plays a dominant role in the era of trade liberalization in production and direction of trade.

Balassa (1965) first invented the term comparative advantage to explore the long-term effects of trade liberalization resulting from the Kennedy Round of GATT. To see the revealed comparative advantage in trade, **Balassa's methodology (1965)** used in most studies likes **UNDIO (1982)**.

Lee (1986) investigate the consequent changes in the structure of exports and comparative advantage in Korea, Taiwan and Japan devising the Revealed Advantage Index (RCA) of Balassa (1965) which is extracted based on actual export performance of individual countries. **Kumar (2004)** analyzed the comparative advantage of fishery products in the international markets by the share of fisheries in India's total exports relative to the fisheries share in the total world exports. **Utkulu and Seymen (2004)** studied the competitiveness and the pattern of trade flows/trade specialization from Turkey to the EU on sectoral levels.

KK (2017) analyzed the substantial contribution of the fisheries sector to India merchandise trade and world trade by used the export and import data from 1994-2014. This paper suggests that India is comparatively advantaged in fishery export compared with its competitors and there are not affected its competitiveness by changing food standards for enhancing quality.

3. Methodology & Data Source

The data collected from the secondary origin. This paper focuses on the comparative advantage in the period from 2001 to 2016. The entire analysis base on the broad framework of the Ricardian Analysis of Comparative advantage in trade. Balassa (1965) introduced the Revealed Comparative Advantage (RCA) which is a measure constructed to inform a country's product share is larger or smaller than the product's share of the entire market.

This paper used the descriptive analysis to compare the fishery sector export growth of Myanmar and the world fishery export growth rate.

4. Results and discussion

4.1 Comparative analysis the Myanmar fishery export growth rate with the world fishery export growth rate

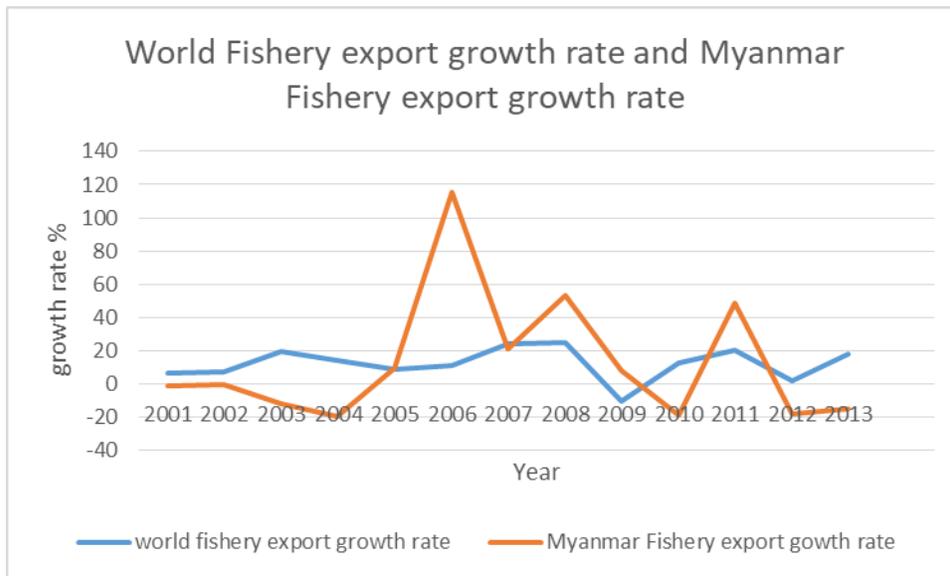
Myanmar fishery sector becomes one an important economic sector for the country and perform the main contributors to the national GDP over time. The export earnings boost Myanmar fisheries sector. The government policy and development programs for fisheries sector intended to satisfy the domestic consumption. In reality the productivity pass through for exports, the only surplus is consumed in the domestic market.

In the exclusive economic zone (EEZ), the governments extend the marine territory about 486, 0000 square kilometers because about 60 % to 70% of all fisheries landing is from marine fisheries. During 1900 the large fisheries resources and the marine fishery becomes most important so, the exclusive economic zone extend provided the marine fisheries areas. But the production of fishery started decline from 2000-2001.

Myanmar fishery exports have sharply increase since Cyclone Nargis 2008, but the global financial crisis distrust the per unit export prices of the fishery products. Myanmar Fisheries Federation declared that Myanmar's foreign earnings from fishery export reached \$497 million and the volume of fishery exports was more than 38,000 tons in 2016. But Myanmar left behind the neighboring countries. So, the Myanmar Fishery Federation developed the fish ponds that meet international standards and by adopting advanced fishing techniques to increase the foreign exchange from fishery exports.

Over the period 2001-2013, Myanmar exports from fishery products reach the rapid rate. World fishery exports increase with an annual growth of 4 to 5 percent per annum .World export of fishery sector experienced worst decline in 2009 and the peak period was 2008 over 13 years.

Myanmar experienced negative growth rate of the fishery exports in most years except 2005, 2006, 2007, 2008 and 2011. During 2006, Myanmar occurred the highest growth rate of fishery sector export. Due to the US and Canada imposed trade sanctions on Myanmar, the decline of Myanmar's fishery export in 2008. The negative growth rate recorded during those periods may be due to the world economic turmoil (See Figure 1).



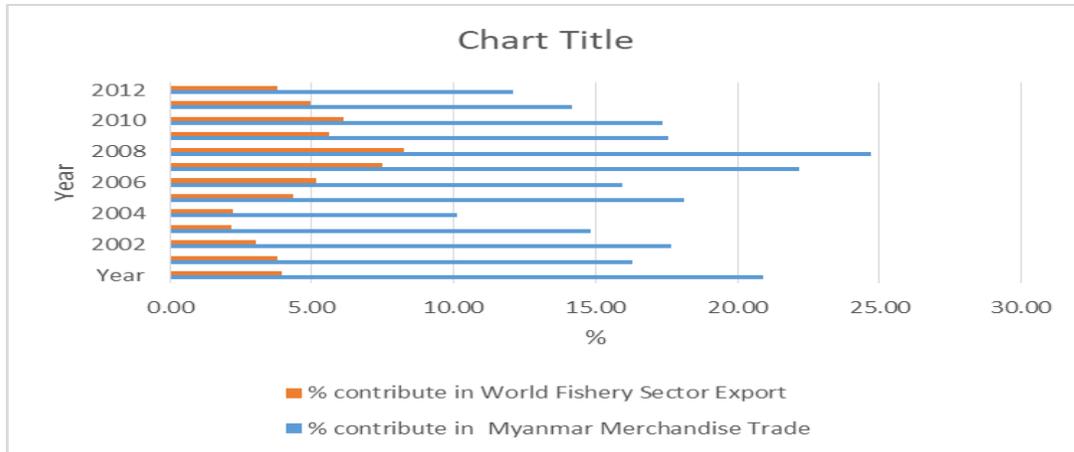
Source: Author's calculation

Figure 1: World Fishery Growth Rate and Myanmar Fishery Growth Rate

There are three categories in Myanmar fisheries such as marine, inland and aquaculture fisheries. Since 1988, the aquaculture sector has been the fastest growing and contributes 40 percent per year in total production. In 1988, there were only 6,300 acres of fishponds but the fish farming land increase annually. Due to trade liberalization, Myanmar's fishery export has been significantly increased from 1990 to 2002. Myanmar fishery sector production increased annually because of the growth of the population and increase the potential to export a variety of fishery products.

But Myanmar faces some barriers in fishery trade such as an export tariff, trade sanctions, low quality and safety of fish for export, inadequate infrastructure and low technology. Moreover, climate change and depletion of fishery resources have been largely affected by Myanmar's fishery export.

The coastal fishing communities suffered the major setbacks of Cyclone Nargis. To recover this problem, the government were made an effort to address the vulnerabilities of the coastal communities. Their livelihood is heavily dependent on fishery resources. The long-term strategies will require the coastal regions because the coastal regions face climate change, the increasing incidence of serve weather episodes will place fishing communities and aquaculture biomass at risk.



Source: Author Calculation

Figure 2: The contribution of the fishery sector in Merchandise Trade and World Fishery

Table 3 shows the contribution made by the fishery sector in Myanmar toward Myanmar's merchandise and world fishery trade. The contribution of this sector in Myanmar merchandise trade is highest in 2008 and the lowest in 2004. Myanmar fishery sector export contributes a small percentage in word fishery sector export around 2 to 8 percent over the period 2001– 2013. This sector export increases annually from 2004 to 2008. But the fishery sector export declines again from 2009 to today. It states that Myanmar exporters need to improve their processing and packing to meet an international quality standard. Despite that, the fishery sector has emerged as the third rank in the earning of foreign exchange and contribute to the fourth of total GDP.

Table 3: The contribution of the fishery sector in Merchandise Trade and World Fishery Export

Year	% contribute to Myanmar	% contribute in World
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	Merchandise Trade	Fishery Sector Export
2001	20.91	3.92
2002	16.31	3.80
2003	17.67	3.01
2004	14.80	2.18
2005	10.12	2.25
2006	18.12	4.35
2007	15.94	5.17
2008	22.15	7.51
2009	24.69	8.22
2010	17.54	5.60
2011	17.36	6.11
2012	14.18	4.97
2013	12.11	3.78

Sources: Author's Calculation

4.2 Revealed Comparative Advantage of Myanmar compare with other fishery export country

The difference in comparative advantage between one countries from another reflects the difference in the productive resource among nations. In this study, compare the export performance ratio of top fishery sector exporting countries which are members of WTO and also our potential competitors. To gain mutually beneficial from trade across nations, the comparative advantage as well as sufficient condition (Sen, 2010).To analyze the export-performance ratio, revealed comparative indices are calculated for the period 2001-2016.

The difference in comparative advantage reflects the different productive resources endowment of the nations. The differences in relative costs as well as in non- price factor

determine the commodity pattern of trade. The main factors which contribute to movements on RCA are structural change, improved world demand and trade

specialization. In this part, analysis of the export performance ratio of Myanmar and other fishery export countries by using the revealed comparative advantage. To analyze the export-

Performance ratio revealed a comparative index is calculated for the period 2001 to 2016. The revealed comparative advantage (RCA) is defined as follows:

$$RCA_{xih} = (X_{ih} / W_{ih}) / (X_i / W_i) \quad (1)$$

where

RCA_{xih} = revealed comparative advantage of the country i in commodity h

X_{ih} = the exports of the commodity i to the rest of the world

X_i = the country i's total exports

W_{ih} = the country total trade in commodity h

W_i = the world total trade in trade volume

Table3: Revealed Comparative Advantage of Myanmar and other top fishery exporting countries.

Year	Myanmar	Thailand	Indonesia	Vietnam
2001	0.12	22.01	1.36	2.74
2002	0.12	21.82	1.24	3.75
2003	0.13	23.78	1.38	3.86
2004	0.12	17.83	2.66	5.50
2005	0.08	17.52	2.60	7.51
2006	0.14	17.44	2.48	7.77
2007	0.13	16.27	2.75	7.14
2008	0.18	17.37	3.03	7.90
2009	0.19	17.67	3.49	7.69
2010	0.14	16.60	2.82	10.13
2011	0.01	16.96	2.92	9.47
2012	0.07	16.55	3.33	7.82

2013	0.15	14.97	4.01	8.72
2014	0.02	32.65	13.35	18.63
2015	0.01	27.43	10.46	17.35
2016	0.05	23.75	8.56	18.83

Source: Author's Calculation

From Table 3, Thailand is a more advantageous place than Myanmar, Indonesia, and Vietnam. Vietnam is the second advantageously compare to the other two nations. The RCA index of Myanmar is below 1 revealing a comparatively disadvantageous position concerning its competitors. And then Myanmar RCA index is coming down over time. This result shows that Myanmar needs to adopt policies to strengthen the sector in this dynamic trade scenario.

5 Conclusion

The paper is an attempt to understand and compare the comparative advantage of Myanmar fishery sector exports with its competitors in the era of stringent seafood safety standards. Neoclassical trade theories support the comparative advantage hypothesis as the contributing factor for exploiting trade potential. To access the quality of the trade potential of the fishery sector, the Revealed Comparative Advantage was estimated and constituted as the benchmark. The RCA indices have been calculated for Myanmar and also top exporters of the product, which are Myanmar's potential competitors. RCA index of Thailand higher which reflects that the products are competitive in nature and trade potential to be tapped for further exports. Myanmar RCA index is below the major fish producing and exporting countries. Myanmar recalled the export dynamism during the period from 2004 to 2008. Thailand listed the highest rate of growth followed by Indonesia and Vietnam. Myanmar's government needs to promote the fishery sector with an efficient and modernize the program. The fishery sector has been the long-run relationship between the fishery sector and economic growth, so Myanmar policymakers have to be implemented to expand fishery sector products in cooperation with EU and German state-owned organization GIZ.

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