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Recession and Indian Seafood Exports: A bane or boon?

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Indian Fisheries sector, one of the major contributors of foreign exchange earnings through export plays a major role in the global seafood export among the Asian countries. India exported 13.8 lakh tons of seafood worth an all-time high of US \$ 7.08 billion (Rs. 45,000 crores) in 2017-18.

The economic recession, since 2008 caused a downturn all over the world, resulted a significant decline in the economic activity spread across the country, normally visible in real GDP growth, real personal income, employment, industrial production, and wholesale-retail sales. Like other sectors there was an innate fear of decrease in the export growth rate of sea food due to recession, since Asian Economic Crisis had given negative impacts to fisheries and any fisheries-related business all round the world.

Exporters, processing companies, and any type of fish dealers suffered extreme market slump. Their financial positions worsened, which caused a sharp decline in fish prices in production sites. After the outbreak of global economic crisis, demand for Indian fisheries has suddenly declined in foreign markets. The wholesale prices of Indian fish import sharply fell and also had a toll on the fishing industry of Veraval. Incidentally, Veraval has a large number of fish processing factories, which export prime quality seafood to USA, Japan, China, South East Asia, Gulf and European countries.

THE RECESSION DID NOT HAMPER THE GROWTH OF INDIAN EXPORT AND THE EXPORT TRADE CONSISTENTLY GROW AROUND 10-15 PER CENT DURING THE LAST DECADE.

The study revealed that, amidst the global recession

and economic meltdown, the sector performed well. Frozen shrimp registered the highest growth rate in quantity from 3.15 per cent to 18.95 per cent in the pre-post-recession period. India continues to be the world largest exports of shrimp and economic recession across the world since 2008. The recession did not hamper the growth of Indian export and the export trade consistently grow around 10-15 per cent during the last decade. Moreover, the study advocated for government interventions in regulating fish exports and the development of a real time fish market grid for the integration of domestic and international markets to ensure more sustainability of fisheries trade and export.

Introduction

India plays a major role in the global seafood export among the Asian countries. The marine products exports from India reached 13 lakh tons worth USD 7.08 billion in 2017-18 and registered an impressive double digit growth rate of 20 per cent in value terms since 2007-08.

India exports frozen shrimp, squids and finfish in dried, live and chilled forms to different destinations. With the current demand pattern of major seafood markets and with modern machinery for freezing and processing, several exporting firms have started development and exports of processed value added products. Among the different items exported, frozen shrimp and frozen fin fish accounted for about 75 per cent of the total volume of sea food exports from India.

However, a global economic meltdown, known as "Great Recession", affected almost all the countries of the world during 2007. The Great Recession was a global economic downturn that devastated world. The crisis led to increases in home mortgage foreclosures worldwide and caused millions of people to lose their life savings, their jobs and their homes. It is generally considered to be the longest period of economic

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decline since the Great Depression of the 1930s. Economic Recession is “a significant decline in the economic activity spread across the country, lasting more than a few months, normally visible in real GDP growth, real personal income, employment, industrial production, and wholesale-retail sales” (Shyam S. Salim, R, Narayanakumar, 2012). A recession normally takes place when consumers lose confidence in the growth of the economy and spend less. This leads to a decreased demand for goods and services, which in turn leads to a decrease in production, lay-offs and a sharp rise in unemployment. Investors spend less as they fear stocks values will fall and thus stock markets fall on negative sentiment.

Recession Impacts on Fisheries in India

The Asian economic crisis gives negative impacts to fisheries and any fisheries-related business. In domestic fish markets, demand for fisheries products is on sharp decline. Wholesale and retail prices sharply fell down. Export of Indian fisheries products mainly for Asian markets is in a severe slump. Exporters, processing companies, and any type of fish dealers suffer from extreme market slump. Their financial positions get worse, which causes a sharp decline in fish prices in production sites. Moreover, fishers and fish farmers find it very hard to raise capital for investment and operation, by depending on fish traders. Since prices of productive materials rise, the rate of profit decreases. Before the crisis, exporters were prevented from further expansion of trading products with lower additional value. In a much contrast, domestic-oriented production remained in depression (Apu Das, et al., 2012).

QUANTITY EXPORTED IN THE YEAR OF 2006-07 WAS 612 THOUSAND TONS AND IT HAS BEEN REDUCED IN THE YEAR 2007-08 TO 541 THOUSAND TONS, IT SHOWS THE NEGATIVE IMPACT OF ECONOMIC CRISIS ON FISHERIES EXPORT.

However, the decline or slowdown in exports cannot be entirely attributed to the economic recession. Quantity exported in the year of 2006-07 was 612 thousand tons and it has been reduced in the year 2007-08 to 541 thousand tons, it shows the negative impact of economic crisis on fisheries export. After the outbreak of global economic crisis, demand for Indian fisheries

has suddenly declined in foreign markets.

It is reported that, in European Union, wholesale prices of Indian fishes imported sharply came down. Collectors had to reduce their scale of transaction and reduce purchase prices of Indian fishes/shrimp. Farm gate price was almost half of the highest at peak. This caused damage to small-scale fishers who are engaged in catching fry and young fish (Apu Das, et al., 2012).

Initially there was a lot of pressure to survive in the economically challenging time, but the quality together with various other factors helped the seafood industry of India to survive. The country's exports grew significantly in terms of dollar despite the decline in aquaculture production and a slump in fish landings, mainly on account of unit value realisation.

Even though the domestic fish marketing in India is steeply increasing and there also exists a paradox of export. The impact of recession in this sector has a huge role. The impact of recession was assessed in terms of the export performance of Indian marine products during the pre and post-recession periods in terms of geographic and commodity diversification.

The study is based on the secondary data, which included marine fish landings sourced from different published sources including FAO Year Book of Fishery Statistics, Statistics of Marine Product Export from India, published by the Marine Products Export Development Authority (MPEDA, Cochin), Ministry of Commerce, Government of India, and National Marine Living Resource Data Centre, Central Marine Fisheries Research Institute. The study was conducted based on the data from 1995 to 2017. The study was designed to be conducted via pre and post-recession periods. The assessment was done using econometric tools which included growth rate analysis, instability to identify the trend in export of marine products during the pre – post recession periods. The export performance of the marine products for both commodity-wise and market-wise have been analysed for assessing the effect of recession in the Indian seafood export.

Result and Discussion

The export growth over the different time period was assessed commodity and market wise and the results are discussed under the following heads.

Export growth of marine products – Commodity wise

In the time of continued uncertainties in the global sea food trade, India has been able to maintain its

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position as a leading supplier. Almost 99 per cent of the export quantity from India is sent as frozen form to the different destinations.

In table 1, the commodity-wise export of marine products indicated that considering the total export the post-recession period (2008-2017) performed better than the pre-recession period (1995-2007). Overall the growth rate of quantity in pre-recession period has increased from 4.98 to 7.84 percent during the post-recession period.

It was found that the unit value realisation in dollars registered a negative growth rate of -0.66 per cent during the pre-recession period have shown a positive growth rate of 6.58 percent during the post-recession

period. Among the different commodities, frozen shrimp registered the highest growth rate in quantity from 3.15 percent in pre-recession to 18.95 percent in the post-recession period.

The important reasons for significant growth in frozen shrimp can be attributed to increased landings, culture of about 70 per cent frozen shrimp, higher price realisation and widened markets.

Also there is a steep decline in the growth rate in quantity of Fr. fin fish (4.51 percent to 1.51 percent), Fr. cuttle fish (3.98 percent to 2.82 percent), dried items (9.90 percent to 5.51 percent), chilled items (9.26 percent to 1.80 percent) and others (19.45 percent to 3.45 percent) during the pre – post recession periods.

Table 1. Commodity-wise export of marine products

Year	Pre-recession (1995-2007)	Post-recession (2008-2017)
Total		
Quantity in ton	4.98* (2.59)	7.84* (3.59)
Value (Crore)	6.49* (4.10)	20.71* (5.16)
US\$ Million	4.29* (3.02)	14.93* (4.15)
Unit Value (Rs)	1.43*** (0.91)	11.94* (3.43)
Unit Value(\$)	-0.66***(-0.53)	6.58* (2.74)
Fr. Shrimp		
Quantity in ton	3.51* (3.79)	18.95* (8.95)
Value (Crore)	4.37* (1.87)	28.47* (4.48)
US\$ Million	2.21* (2.32)	22.29* (4.06)
UV (Rs)	0.83*** (0.39)	8.00* (1.94)
UV(\$)	-1.26** (-0.96)	2.80*** (0.78)
Fr.Fin Fish		
Quantity in ton	4.51** (1.07)	1.51*** (0.37)
Value (Crore)	8.26* (1.99)	10.56* (2.55)
US\$ Million	6.04** (1.29)	5.29** (1.20)
UV (Rs)	3.59* (3.06)	8.91* (3.16)
UV(\$)	1.47*** (0.57)	3.72* (1.96)
Fr. Cuttle fish		
Quantity in ton	3.98* (1.97)	2.82** (0.99)
Value (Crore)	9.57* (2.98)	11.73* (4.61)
US\$ Million	7.29* (1.54)	6.32* (1.76)
UV (Rs)	5.37* (3.09)	8.66* (2.63)
UV(\$)	3.18** (0.97)	3.40*** (0.77)

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Fr. Squid		
Quantity in ton	1.12*** (0.44)	4.95* (1.47)
Value (Crore)	5.76* (2.16)	16.23* (3.04)
US\$ Million	3.55** (1.00)	10.45* (1.84)
UV (Rs)	4.59* (5.69)	10.76* (3.34)
UV(\$)	2.40** (1.18)	5.25* (1.62)
Dried items		
Quantity in ton	9.90* (1.87)	5.51*** (0.72)
Value (Crore)	17.26* (3.99)	4.91*** (0.67)
US\$ Million	14.87* (2.63)	1.66*** (0.22)
UV (Rs)	6.70* (1.79)	-0.57***(-0.10)
UV(\$)	4.52** (1.28)	-3.65***(-0.63)
Live items		
Quantity in ton	3.19* (1.61)	5.65* (1.48)
Value (Crore)	8.18* (3.18)	15.13* (3.02)
US\$ Million	5.97* (2.44)	9.70* (2.59)
UV (Rs)	4.84* (2.03)	8.97* (1.53)
UV(\$)	2.69* (1.75)	3.84*** (0.84)
Chilled items		
Quantity in ton	9.26* (2.48)	1.80*** (0.32)
Value (Crore)	13.93* (3.10)	16.18* (3.03)
US\$ Million	11.66* (2.55)	10.61* (2.56)
UV (Rs)	4.27* (1.53)	14.12* (2.84)
UV(\$)	2.20** (1.09)	8.65* (1.79)
Others		
Quantity in ton	19.45* (6.13)	7.94* (3.00)
Value (Crore)	19.39* (6.81)	12.30* (3.90)
US\$ Million	16.96* (6.40)	6.57* (1.82)
UV (Rs)	-0.05***(-0.03)	4.04* (1.69)
UV(\$)	-2.09***(-0.78)	-1.27***(-0.68)

* indicates the significance level if p value < 0.05, ** if p value <0.01 and *** if p value < 0.001 respectively.

Export of marine products – Marketwise

In the case of market-wise analysis of export of marine products during post-recession period (2008-2017) showed impressive growth in terms of Quantity, Value, Value in Dollar, Unit value and Unit value in Dollar with 8.60,23.06, 16.72,13.32 and 7.48 percent respectively. The United States and South East Asia maintained its top most position in marine products exports in terms

of quantity and value respectively. During the post-recession period, the United States emerged as the major buyers of the Indian marine products relegating Japan to the second position.

South East Asia also registered a significant higher growth rates during the post-recession period in terms of value and quantity and the unit value realisation has increased by 2.96 percent. The higher export value and

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unit value realisation even at a decline in quantity in European Union indicated the quality consciousness and higher value for the premium products. In general, the analysis of the export growth revealed that there is considerable increase in the export and diversification

of commodities and also market recession the world-over had not hit the exports from India.

Table 2 shown below indicates the market wise export growth of Indian marine products.

Table 2. Export growth of Indian Marine products (Market wise)

Year	Pre-recession(1995-2007)	Post-recession(2008-2017)
Total		
Quantity in ton	4.98* (2.59)	8.60* (2.87)
Value (Crore)	6.49* (4.10)	23.06* (5.22)
US\$ Million	4.29* (3.02)	16.72* (3.89)
UV (Rs)	1.13*** (0.63)	13.32* (3.61)
UV(\$)	-0.66***(-0.53)	7.48* (2.82)
Japan		
Quantity in ton	-0.09***(-0.04)	3.73** (1.27)
Value (Crore)	-5.22* (-1.50)	11.97* (2.97)
US\$ Million	-7.18***(-2.41)	5.97** (1.35)
UV (Rs)	-5.13* (-2.32)	7.94* (2.34)
UV(\$)	-7.10* (-4.89)	2.16*** (0.77)
USA		
Quantity in ton	12.10* (1.79)	42.03* (4.83)
Value (Crore)	9.76* (1.92)	34.74* (4.09)
US\$ Million	1.46*** (0.41)	27.28* (5.36)
UV (Rs)	-2.09** (-1.23)	-5.12* (-3.38)
UV(\$)	-9.49* (-3.14)	-14.81**(-1.77)
European Union		
Quantity in ton	9.22** (9.22)	2.53* (1.63)
Value (Crore)	13.88* (2.87)	13.64* (4.13)
US\$ Million	11.52* (2.04)	7.76* (2.97)
UV (Rs)	4.27* (5.03)	10.84* (3.58)
UV(\$)	2.11* (1.34)	5.10* (1.98)
China		
Quantity in ton	3.38*** (0.66)	-14.78* (-4.05)
Value (Crore)	8.11* (1.58)	-1.08***(-0.22)
US\$ Million	5.95** (1.20)	-6.06** (-1.21)
UV (Rs)	4.57* (2.18)	16.08* (5.27)
UV(\$)	2.48*** (0.87)	10.23* (3.88)
South East Asia		
Quantity in ton	5.83* (1.73)	20.79* (2.03)

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Value (Crore)	8.23* (2.77)	38.41* (3.65)
US\$ Million	5.99* (2.51)	31.33* (2.96)
UV (Rs)	2.26 *** (0.64)	14.58* (2.86)
UV(\$)	0.15 *** (0.06)	8.72* (2.52)
Middle East		
Quantity in ton	7.15* (1.98)	10.16* (2.33)
Value (Crore)	14.60* (3.86)	21.62* (3.77)
US\$ Million	12.23* (3.01)	15.48* (3.05)
UV (Rs)	6.95* (3.44)	10.41* (2.23)
UV(\$)	4.74* (1.54)	4.83** (1.21)
Others		
Quantity in ton	13.62* (4.07)	4.37** (1.04)
Value (Crore)	21.46* (11.25)	18.29* (2.97)
US\$ Million	18.96* (6.16)	12.25* (2.29)
UV (Rs)	6.90* (2.61)	13.34* (2.94)
UV(\$)	4.70* (2.40)	7.56* (1.79)

* indicates the significance level if p value < 0.05,** if p value < 0.01 and *** if p value < 0.001 respectively

Export instability of Indian marine products: Commodity-wise

The export performance of a market during the pre-post-recession period was also measured based on the extent of variability or fluctuations in addition to the point of view of the increase in quantity, value and unit value. The results in table 3 indicated that the degree

of instability in quantity was more pronounced during the pre-recession period with 15.97 percent in terms of value and unit value even though more growth was associated there exists an increase in the degree of instability from 11.53 percent to 15.58 percent and 8.28 percent to 13.78 percent during the pre- post-recession periods respectively.

Table 3. Instability indices of Indian Marine Products Export (Commodity-wise)

Particulars	Pre-recession(1995-2007)	Post-recession(2008-2017)
Total		
Quantity in ton	15.97	8.77
Value (Crore)	11.53	15.58
Unit Value	8.28	13.78
Unit Value (\$)	10.78	16.73
Frozen Shrimp		
Quantity in ton	5.76	11.28
Value (Crore)	11.23	25.19
Unit Value	12.45	16.68
Unit Value (\$)	8.69	26.48
Fr.Fin Fish		
Quantity in ton	37.91	16.41

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Value (Crore)	33.40	16.92
Unit Value	7.43	14.94
Unit Value (\$)	32.93	17.20
Fr. Cuttle fish		
Quantity in ton	14.12	14.23
Value (Crore)	17.27	13.09
Unit Value	8.98	15.66
Unit Value (\$)	20.01	18.86
Fr. Squid		
Quantity in ton	14.90	23.16
Value (Crore)	15.75	28.95
Unit Value	6.92	16.01
Unit Value (\$)	16.14	29.04
Dried items		
Quantity in ton	33.08	39.43
Value (Crore)	26.09	48.29
Unit Value	27.70	32.39
Unit Value (\$)	29.49	53.75
Live items		
Quantity in ton	16.49	20.16
Value (Crore)	23.19	24.59
Unit Value	12.49	21.54
Unit Value (\$)	19.61	19.48
Chilled items		
Quantity in ton	35.15	57.87
Value (Crore)	41.26	27.30
Unit Value	15.76	35.16
Unit Value (\$)	45.30	22.32
Others		
Quantity in ton	14.56	11.18
Value (Crore)	17.54	17.41
Unit Value	11.28	12.43
Unit Value (\$)	18.26	20.51

* indicates the significance level if p value < 0.05 , ** if p value < 0.01 and *** if p value < 0.001 respectively.

Frozen shrimp registered higher export quantity variation (11.28 per cent) during post-recession period, when compared with pre-recession period (5.76 per cent)

suggesting that there exists severe competition among the different exporters and the exports are very much responsive to the prices. In addition, the essentiality

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of a buyers' market and lesser number of importers paved the way for higher instability.

Contrary to the instability behaviour of frozen shrimp, there existed a lower degree of export quantity variation with respect to frozen squid, frozen cuttlefish and Fr. Fin fish. The widening of European Union domain and trading with South East Asian countries seemed to generate lesser instability. The analysis suggested the need for diversification of commodities, which would reduce the degree of instability.

Export instability of Indian marine products: Market-wise

The results of instability analysis of the Indian marine products – market-wise is indicated in table 4 and shows that the post-recession period shows a higher degree of instability in terms of value (17.19 per cent), when compared to the pre-recession period (11.53 per cent). Whereas the quantity of export showed lower degree of instability during the post-recession period

(12.79 per cent) than pre-recession period (15.97 per cent), which point out that the quantity of export was more stable than the value. Amidst of these, recession has not affected the quantity of export of the Indian marine products.

USA, a more stable market during the pre-recession period as indicated by the instability index in quantity and value became lesser volatile during the post-recession period for quantity, value except for the unit value. Japan on the other side, become lesser volatile during the post-recession period in terms of value and except for all other export parameters.

The major markets that have gained considerable reduction in the instability of export were that of European Union, China and Middle East in all the export parameters excluding the unit value. The South East Asia had generated a significant growth in all the export parameters leading to an alarming increase in the degree of instability.

Table 4. Export instability of Indian Marine Products: Market-wise

Year	Pre-recession(1995-2007)	Post-recession(2008-2017)
Total		
Quantity in ton	15.97	12.79
Value (Crore)	11.53	17.19
Unit Value	8.28	13.27
Unit Value (\$)	10.78	19.25
Japan		
Quantity in ton	11.10	12.52
Value (Crore)	18.46	14.97
Unit Value	11.57	12.21
Unit Value (\$)	17.27	18.81
USA		
Quantity in ton	24.80	30.79
Value (Crore)	21.49	34.17
Unit Value	7.13	6.16
Unit Value (\$)	13.04	12.29
European Union		
Quantity in ton	31.89	5.61
Value (Crore)	31.67	11.75
Unit Value	6.01	10.45

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Unit Value (\$)	30.87	12.44
China		
Quantity in ton	50.63	23.66
Value (Crore)	42.61	26.64
Unit Value	13.08	14.29
Unit Value (\$)	41.92	25.74
South East Asia		
Quantity in ton	22.56	29.97
Value (Crore)	15.78	32.64
Unit Value	20.97	18.93
Unit Value (\$)	15.47	34.19
Middle East		
Quantity in ton	27.41	17.66
Value (Crore)	35.02	14.34
Unit Value	16.59	16.83
Unit Value (\$)	37.56	14.01
Others		
Quantity in ton	16.79	24.05
Value (Crore)	13.02	19.71
Unit Value	11.06	23.47
Unit Value (\$)	12.22	20.20

The impact of recession was studied and it was found that recession has not affected India's seafood trade. The major reasons for the same had been India's economic stimulus, strength of banking system and the economic status of developed countries. While the purchasing power and employment rate decreased by around double digits, the demand for retailing went up and lower demand for ready to serve and ready to cook. The demand for food stamps (PDS increased in the developed countries including US and EU) amidst massive economic stimulus provided added demand for Indian imports.

The stronger Chinese Yuan and more productivities and governmental regulation in the South East Asian remain unaffected. The Indian seafood export was not affected due to the increased demand for raw fish rather than value-added products from the retail outlets, declining international market arrivals by over 10 per cent globally in the buyer countries. It can be inferred that the export of fishery products is on its hike during the recession period commenced from 2007. Exports have increased from 541.7 million dollars in

2007-08 to 928.45 million dollars in 2012-13. India exported 13 lakh MT of seafood worth an all-time high of USD 7.08 billion (Rs 45000 crore) in 2017-18 as against 9.45 lakh tons and 4.69 billion dollars a year earlier. USA and South East Asia continue to be the major importers, while the demand from the European Union (EU) grew substantially during the period.

One of the important lessons learnt is to be self-reliant. Even though World Trade Organisation (WTO) propagates free trade, India must adopt protective measures in the economy to prevent recession affecting in different parts of the world. In the event of recession, it could also be note that some of the high value fishes fetch a premium price in the domestic market too. The low demand from US and EU economies hit hard by the global crises has decelerated the country's export growth sharply in 2008. Export markets get subjected to high risk in terms of rejection and low price risk and loss of damage in transit or variation in foreign exchange values. The setback experienced could be minimised in future only by a well-developed internal marketing system.

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Moreover, the expansion of *L. vannamei* culture has been rapid in recent years, it has led to reduced value of harvested shrimp. Recent worldwide trends have been towards the integration of the industry, in response to the ever increasing requirement for traceability and control within the culture system. There has been increasing demand for shrimp in world markets, as capture fisheries stagnate and people became more affluent and conscious of healthy food choices.

Despite the increased demand, the price for *L. vannamei* has been declining steadily. In the future, the market for *L. vannamei* is expected to become more competitive, mainly due to the saturation of export markets and reduction in world economic growth, as well as the emergence of non-tariff barriers in shrimp trade.

Additionally, the industry will need to accommodate

importing countries requirements on chemical residues, food safety and certification, traceability eco-labelling and environmental sustainability.

The shrimp farmers have slowly become aware of the growing need to farm shrimp in a responsible, traceable and low impact manner which can enhance biosecurity, and help protect the environment, whilst producing shrimp in a cost efficient manner.

The newly developed intensive bacterial floc and super-intensive systems, Better Management Practices, HACCP in processing units may have potential to address all of these concerns and should be investigated more thoroughly. In order to continue the growth of shrimp farming smoothly in the long term, domestic consumption should be promoted to supplement the complex export markets.



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