



Competitiveness of Indian bovine meat exports -- constant market share analysis

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Received: 9 January 2017; Accepted: 1 March 2017

ABSTRACT

The present study attempts to explain the export performance of Indian Bovine meat trade and its competitiveness in International market for the period of 20 years from 1996–2014. Performance was studied using growth of exports, market shares, export shares, and source of growth was analysed by using two stage CMS analysis to decompose the growth of Indian Bovine meat exports into broad components and its sub components. It was found that overall Indian bovine meat exports registered growth rate of 13.03%, 7.94% and 22.01% in terms of quantity, price and exports value respectively. The share of India in world Bovine meat exports fluctuated and remained less than 10% for most of the years. India's bovine meat exports increased rapidly to other countries with highest overall growth of 34% while the growth of major traditional importers remained at 6.56%. The results showed that while India's market share in other countries increased, share in importing countries decreased during the study period. The results of decomposition analysis revealed that competitive effect was more significant in explaining the growth of exports. CMS analysis revealed that Bovine meat exports were more competitive in new markets in contrast to major traditional export destinations and requires emphasis. Dual strategy of penetrating in to new markets while concentrating on existing markets by increasing competitiveness will make India as major player in the world Bovine meat trade.

Key words: Bovine meat, Constant market share analysis, Export competitiveness, Market shares

Bovine meat production is a multi million dollar industry in India. Since 1996, the value in international trade in exports has increased at an average growth rate of approximately 22.01% per annum (Author' study). India's overall Bovine meat trade was about US\$ 4,800 million in 2014 (UNCOMTRADE).

India's share in global Bovine meat trade was only 3.29% in 1996 but increased to 16.15% (Author' study) in 2014 but yet it is projected as major player due to untapped potential because of largest livestock resources. However, India's position is likely to change as trade is globally increasing. Hence it is appropriate to delineate the India's position and competitiveness in world markets of Bovine meat trade.

With the increasing importance of Bovine meat trade in India, and rapidly changing global trade scenario, it is important to examine how India has benefited or lost from Bovine meat trade, what would be the direction of Bovine trade in the near future, and the driving forces of direction of global Bovine trade. International competitiveness is commonly used concept to address these issues. Information about international competitiveness which is vital in bringing better allocation of scarce resources can be invaluable to designing development strategies at both

national and farm level.

With this background, the present study has been undertaken with the specific objective of studying the changing pattern of international competitiveness of bovine meat exports of India.

MATERIALS AND METHODS

Data on Indian bovine meat trade covering exports to major destinations and also data on bovine meat trade of importing countries were obtained from United Nations Commodity Trade Statistics database (UN COMTRADE) produced by the United Nations statistical office and the statistics of FAO and APEDA. The data cover a period of 20 years (1996–2014).

The change in market shares was employed to analyze the competitiveness of Indian Bovine meat exports. In addition to market shares, constant market share (CMS) approach was used to find out the sources of change in market shares and resulting competitiveness.

Constant market share (CMS) approach was to examine the changing pattern of competitiveness of Indian Bovine meat exports in the world markets between 1996 and 2014. The study covers the period between 1996 and 2014. In order to observe changes in competitiveness over different periods of time, the entire time frame was divided into four periods each covering five years P1 (1996–2000), P2 (2001–2005), P3 (2006–2010), P4 (2011–2014), overall period

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(1996–2014) with a discrete two time period (base year and an end year).

With the pioneering work of Tyszynski, CMS analysis became popular in applied international economics for export analysis (Ahmadi *et al.* 1994, 1995, Chen *et al.* 2000, Ferto 2001, Fogarasi 2003, Barbaros *et al.* 2007, Fogarasi 2008, Klasra and Fidan 2005, Cai and Leung 2006, Edith Skriner 2009, Amzul Rifin 2010, Ríos 2014) at the international level. At the national level, it was used by Fathima *et al.* 2006, Singh and Dey 2011, Rani *et al.* 2013. With few exceptions (Ríos 2014), it is hard to find empirical studies examining the international competitiveness of meat products using the CMS approach. At the national level, there was no study on meat industry using CMS model. overall, many studies have multiproduct and multimarket approach. There are few studies which have used the CMS approach to the single product and multiple markets.

The CMS approach uses a country's market share in a market as a measure of competitiveness (Richardson 1971, Bowen and Pelzman 1984, Fagerberg and Sollie 1987, Feldman 1994, Lloyd and Toguchi 1996, Chen *et al.* 2000, Chen and Duan 2000).

The larger the market share that a country controls, the greater its competitiveness would be in that market. The CMS handles export growth as a co-impact of four factors, viz. global market growth effect, commodity composition effect, market share effect and change in competitiveness.

Though the CMS model is a commonly accepted procedure of accounting for the sources of a country's export growth, there are some problems associated with the application of the traditional CMS model (Chai and Riethmuller 1999). To overcome these problems, a modified version of the CMS model was used.

Following Chen and Duan (2000), we have decomposed the change in exports of country k to destination j of meat product i (ΔQ_{kij}) into structural, competitive and second order effects as given in the following equation.

$$\Delta q = skij \times \Delta Q_{kij} + Q_{kij} \times \Delta skij + \Delta skij \Delta Q_{kij} \dots \dots \dots 1$$

structural effect
Competitive effect
Second order effect

where, Δ , change over period; 0, base period; 1, final period; Q, value of bovine meat product exports; S, share of exports in quantity terms.

Further, Q is the sum of the export of all bovine meat products given in the UNCOM TRADE data, k is India, j is the export destinations (j=1, m) of Indian bovine meat, i is meat products. As we have not differentiated the meat products, bovine meat exports represents total and there is no i in this analysis. But for better understanding, i is shown in the following equations

Equation 2 gives the complete picture of main components and their sub components in the second stage decomposition (Chen and Duan 2000) used by Mushtaq Ahmad Klasra and Halil Fidan, Kehar Singh and Madan Mohan Dey (2011)

The first term on the right side of the equation refers to

$$\begin{aligned} \Delta q = & s^o \Delta Q + (\sum_i \sum_j s_{ij}^o \Delta Q_{ij} - \sum_i s_i^o \Delta Q_i) + (\sum_i \sum_j s_{ij}^o \Delta Q_{ij} - \sum_j s_j^o \Delta Q_j) \\ & \text{growth effect} \quad \text{market effect} \quad \text{commodity effect} \\ & + [(\sum_i s_i^o \Delta Q_i - s^o \Delta Q) - (\sum_i \sum_j s_{ij}^o \Delta Q_{ij} - \sum_j s_j^o \Delta Q_j)] \\ & \text{structural interaction effect} \\ & + \Delta s Q^o \quad \quad \quad + (\sum_i \sum_j s_{ij} \Delta Q_{ij} - \Delta s Q^o) \\ & \text{General competitive effect} \quad \text{specific competitive effect} \\ & + (Q^1/Q^o - 1) \sum_i \sum_j \Delta s_{ij}^o Q_{ij}^o + [\sum_i \sum_j \Delta s_{ij} \Delta Q_{ij} - (Q^1/Q^o - 1) \sum_i \sum_j \Delta s_{ij} Q_{ij}^o] \dots \dots \dots 2 \\ & \text{Pure second order effect} \quad \text{dynamic structural residual} \end{aligned}$$

the growth of the world. The second term captures the effect of the market. The third item shows effect of commodity-composition. The next term, structural interaction effect, captures the changes in exports due to interaction of specific commodity and market effects.

The competitiveness effect is derived as residuals in the equation; Δ in exports of country, 'k' of bovine meat product 'i' to country, 'j' due to a change in competitiveness of country, 'k' for total bovine meat product exports to the world is called as general competitive effect. Δ in exports of country, 'k' of bovine meat product, 'i' to country, 'j' due to a change in competitiveness of country, 'k' in export of bovine meat product, 'i' to destination, 'j' is called as specific competitive effect. The positive or negative sign implies improvement or deterioration in exports competitiveness.

Δ in exports of country, 'k' of Bovine meat product, 'i' to country, 'j' due to interaction of specific competitive effect and structural effect is called as pure second order effect. Δ in exports of country 'k' of Bovine meat product, 'i' to country, 'j' due to interaction of specific competitive effect and market effect is called as dynamic structural residual effect. Since it is one product approach, commodity effect will be zero in this case.

RESULTS AND DISCUSSION

Export performance of Indian Bovine meat exports

The bovine meat exports value from India showed continuously increasing trend over the years (Fig. 1).

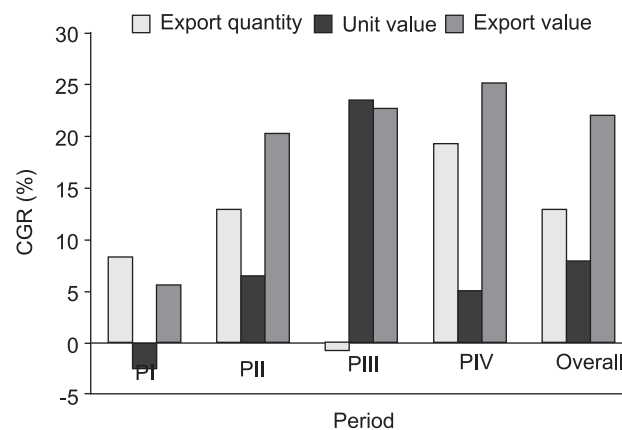


Fig. 1. Growth of Indian Bovine meat exports in different periods.

Exports value increased from 174 million dollars in 1996 to 4,800 dollars in 2014. Unit value showed negative growth only in PI, but thereafter it showed positive growth. It has increased from 1.1 to 3.22 dollars/kg between 1996–2014. The export quantity increased from 157.7 thousand tonnes to 1,487 thousand tonnes during the same period.

Except in P3, export quantity showed an increasing trend in all the periods. Though quantity showed negative growth in P3, exports value was positive due to higher positive effect of unit value. Overall, Indian bovine meat exports registered growth rate of 13.03%, 7.94% and 22.01% in terms of quantity, price and exports value respectively.

Tables 1 and 2 shows major importing countries and their share in India's exports and India's share in their imports. World trade of bovine meat increased by 161% in P4 over PI with overall growth of 3.39% during 1996–2014. Total imports of the selected countries (major importers of Indian bovine meat considered in the study) from world increased by 264.6% in P4 over PI with overall growth of 6.96%

during 1996–2014.

Examination of individual countries showed that Senegal, Angola, China, Ghana, Jordan, Liberia, Maldives, Qatar, Turkey are fastest growing countries which grew at 1350%, 736.6%, 805%, 408.1%, 541.3%, 464.3%, 623%, 662.5%, 805.9% respectively from PI to PIV with overall growth of 23.72%, 14.3%, 14.69%, 13.16%, 11.32%, 11.92%, 14.74%, 14.87%, 13.96% during 1996–2014 (Table 2). Similarly, total imports of other countries increased by 148.4% in PIV over PI with 2.81% growth during 1996–2014.

From Table 1, it is evident that India's bovine meat exports to world increased by 702.2% in P4 over PI. While the imports of major importing countries increased by 279.5%, other countries showed highest growth of 7009%. Since this change is larger than increase in total imports for these countries market share of India in these countries increased from average share of 28.43% to 30.2% from PI to P4 with 106.2% growth rate. Similarly India increased

Table 1. India's market shares of Bovine meat in major importing countries

Particular	P1								P4							
	Annual average								Annual average							
	TI 000 tonnes	Cgr %	II 000 tonnes	Cgr %	MS %	Cgr %	SIE %	Cgr %	TI 0 tonnes	Cgr %	II 0 tonnes	Cgr %	MS %	Cgr %	SIE %	Cgr %
Angola	6.9	11.1	1.8	191.4	23.6	162.2	0.9	169	50.5	12.8	27.4	13.7	54.3	0.8	2.2	-4.7
Bahrain	3.8	1.4	1.9	-2.6	50.5	-4	1.1	-10.1	8.3	9.3	2.8	7.7	34.2	-1.4	0.2	-9.7
China	39.5	9.6	0.1	-13	0.3	-20.7	0.1	-19.7	318.3	45.1	1.5	-35.5	0.7	-55.5	0.1	-45.9
Côte d'Ivoire	1.5	-18.7	0.3	-2.7	18.6	19.7	0.1	-10.1	5.1	-20.6	1.3	-40.6	23.4	-25.2	0.1	-50.2
Gabon	5.9	-0.8	2.5	39.5	41.6	40.7	1.3	28.8	10.3	9.4	7.7	-4.2	74.9	-12.4	0.6	-19.7
Germany	214.8	-2.4	0.1	58.9	0.1	62.7	0.1	46.7	356.8	-1.3			0	#	0	
Ghana	2.4	-18.9	0.2	22.9	9.5	51.6	0.1	13.5	9.8	-7.5	2.5	-30.9	24.8	-25.4	0.2	-42.1
Iran	38.1	-24.3	9.8	0.4	30.2	32.6	5.7	-7.3	116.2	-20.9	33.1	-19.8	28.9	1.4	2.8	-32.8
Jordan	13.6	7.6	6.2	39.5	43.7	29.6	3.3	28.8	73.3	-17.9	52.8	-25.8	70.5	-9.6	4.7	-37.8
Kuwait	10.2	1.3	4.4	3	42.5	1.7	2.5	-5	44.1	7.8	22.8	10	51.5	2.1	1.9	-7.8
Lebanon	9.9	8.8	2.5	26.3	24	16.1	1.4	16.6	26	2.2	7.6	12.5	28.9	10	0.6	-5.8
Liberia	0.5	28.7	0.1	16.1	10.3	-9.8	0	7.1	2.5	-13.2	1.7	0.3	67.9	15.6	0.1	-15.9
Malaysia	68.4	3.6	54.7	4.2	79.7	0.6	30.8	-3.8	142	7.3	116.2	7.3	81.8	0	9.5	-10.1
Maldives	0.3	40.1	0.1	107	23.8	47.8	0	91.1	1.7	2.8	1	1.9	57.5	-1	0.1	-14.7
Mauritius	5.9	-14.4	3.4	-8.1	59.9	7.4	2	-15.2	4.5	-1.3	3.2	-5	70.9	-3.7	0.3	-20.4
Oman	5	-1.5	4.5	-1.1	88.1	0.4	2.5	-8.7	18.5	1.7	13.5	2.2	72.8	0.5	1.1	-14.4
Philippines	68.9	7.5	30.9	9.5	44.6	1.8	17.2	1.1	104.5	6.1	46.2	-1.3	44.5	-7	3.9	-17.3
Qatar	2.1	-4.6	0.7	-6.4	34.4	-1.9	0.4	-13.6	14.1	4	6.5	-3.2	46.5	-6.9	0.5	-18.9
Saudi Arabia	33.4	-7	0.4	39	1.4	49.4	0.2	28.3	120.3	4	71.1	5.3	59	1.2	5.8	-11.8
Senegal	0.3	50.8	0.2	89.5	55.3	25.7	0.1	75	4.5	-7.4	3.9	-6.2	87.1	1.3	0.3	-21.4
Turkey	4.9	-56.7	1	-33.1	45.4	54.7	0.6	-38.2	39.8	-69.8	0.9	5.8	12.2	251	0.1	-11.3
UAE	50.1	5.3	39.2	2.8	78.5	-2.4	22.4	-5.1	86	4.5	43.1	3	50.2	-1.5	3.6	-13.7
Yemen	2.9	9.4	2.8	10	95.8	0.5	1.6	1.5	2.4	7.5	2.2	8.5	93.1	0.9	0.2	-9.1
Total countries	589.2	-0.7	167.7	6.1	28.4	6.8	94.4	-2	1559.2	4.3	468.8	-0.4	30.2	-4.5	38.9	-16.5
Others	4653.7	4.5	11.2	38.6	0.2	32.7	5.6	28	6908.5	6.2	787.8	33.7	11.2	25.8	61	12
World	5242.9	3.9	179	8.3	3.4	4.3	100	0	8467.8	5.9	1256.7	19.3	14.7	12.7	100	0

TI, Total imports; II, imports from India; MS, market share; SIE, share of country in India's exports; Cgr, compound growth rate.

its market share in other countries from 0.23% in P1 to 11.2% share in P4 with 4779.6% growth. Overall India's share in world bovine meat trade showed growth of 432.2% between P1 and P4 where it had increased its share from 3.4% in P1 to 14.7% in P4.

The share of India in world Bovine meat exports fluctuated and remained less than 10% for most of the year. Its share in world market ranged from 3.29% to 16.15% during 1996–2014 with average share of 7% in 1996–2014. India gained highest market share of 17.6% during the year 2013.

At the individual country level, Saudi Arabia had highest change (4184.6%) for India's bovine meat between P1 and P4 followed by Liberia (661.5%), Ghana (260%), Maldives (241.5%), Angola (229.5%), China (219.1%), Gabon (179.9%) and Senegal (157.6%). India's market share in these countries showed overall growth of 37.65%, 15.63%, 11.12%, 10.8%, 10.96%, 4.85%, 5.19%, 4.29% respectively (Table 2).

India's bovine meat exports increased rapidly to other countries with highest overall growth of 34% while the growth of major importers kept at 6.56%. Overall World

imports from India had grown @ 13.03% during 1996–2014. Similarly, India's market share in world has grown at the rate of 9.33% between 1996–2014 where India registered highest growth of 30.43% in market share in other countries while market share in importing countries has showed negative growth of –0.37%.

With all most all major importing markets, India had highest market share more than 25% with the only exceptions are China (1%), Germany (0.32%), Lebanon (22.7%). In other countries, India had less than 5% market share (3.46%) but it is increasing @30.43%.

Market destinations: Markets for Indian bovine meat have never been consistent and there has been a regular fluctuation with respect to destinations since the geographical spread of the markets exhibited an ever changing hues. Malaysia, UAE, Philippines, Iran, Jordan were India's favourite top five market destinations during 1996–2000 (P1) which jointly accounted for about 79.37% of total exports of bovine meat from India.

Amongst them Malaysia alone accounted for highest market share of 30.7% during P1 followed by UAE (22.42%), Philippines (17.2%), Iran (5.67%), Jordan (3.3%)

Table 2. India's market shares of bovine meat in major importing countries- Overall period

Particular	Overall period							
	Annual average							
	TI 000 tonnes	CGR %	II 000 tonnes	CGR %	MS %	CGR %	SIE %	CGR %
Angola	34.9	14.3	20.8	26.8	51.3	11.0	4.3	12.2
Bahrain	5.3	5.2	2.4	2.1	47.7	-2.9	0.7	-9.7
China	121.3	14.7	1.0	20.3	1.1	4.9	0.2	6.4
Côte d'Ivoire	4.8	9.7	2.1	12.3	36.3	2.4	0.5	-0.7
Gabon	7.7	3.8	5.1	9.1	63.5	5.2	1.2	-3.5
Germany	264.7	4.2	0.9		0.3		0.2	
Ghana	5.4	13.2	2.3	25.8	35.9	11.1	0.5	11.3
Iran	72.9	9.0	15.6	6.1	27.1	-2.7	3.6	-6.1
Jordan	36.0	11.3	24.9	14.3	64.9	2.7	5.0	1.1
Kuwait	30.9	12.1	17.9	14.5	52.5	2.1	3.8	1.3
Lebanon	20.1	8.5	4.4	9.1	22.7	0.6	1.0	-3.5
Liberia	1.1	11.9	0.5	29.41	32.2	16.22	0.1	14.5
Malaysia	92.6	3.8	74.1	3.7	79.5	-0.1	19.5	-8.3
Maldives	0.8	14.7	0.4	27.1	36.3	10.8	0.1	12.5
Mauritius	4.7	-1.9	3.3	-0.7	70.3	1.2	1.0	-12.1
oman	11.0	9.3	9.1	7.8	84.7	-1.4	2.2	-4.7
Philippines	85.6	2.8	42.0	2.4	49.2	-0.4	11.7	-9.4
Qatar	7.0	14.9	2.9	16.7	40.7	1.6	0.6	3.2
Saudi Arabia	69.0	8.6	26.0	49.5	27.5	37.7	3.7	32.2
Senegal	3.4	23.7	2.9	29.0	75.6	4.3	0.5	14.2
turkey	13.5	14.0	0.9	-0.9	51.6	-13.0	0.3	-12.3
UAE	54.1	3.9	31.9	-0.1	61.1	-3.9	9.9	-11.7
Yemen	3.3	-2.4	2.8	-2.9	87.2	-0.6	0.9	-14.1
Total countries	949.9	6.9	293.8	6.5	31.5	-0.3	71.2	-5.7
others	5679.7	2.8	229.7	34.1	3.5	30.4	28.7	18.6
world	6629.6	3.4	523.6	13.0	7.2	9.3	100.0	0.0

TI, Total imports; II, imports from India; MS, market share; SIE, share of country in India's exports; Cgr, compound growth rate.

and Kuwait (2.48%). Overall India exported 94.43% of its exports to major importing countries in P1. It exported only 5.57% to other countries.

In P4, while share of importing countries decreased to 38.98%; share of other countries increased to 61.02% of total Indian exports. In P4, UAE (3.56%), Saudi Arabia (5.84%), Malaysia (9.49%), Jordan (4.65%), Philippines (3.86%), Iran (2.81%) were the major destinations of India's bovine meat exports.

It can be concluded that though share decreased Malaysia, UAE, Philippines, Jordan, Iran were major traditional importing countries since 1996 as far as India's bovine meat exports are concerned. Source of exports growth and market shares of Indian bovine meat is explained by the CMS analysis in the following section.

Constant market share analysis: CMS analysis was used to analyze the source of export growth of Indian bovine meat. CMS analysis for India's top five bovine meat export destinations was performed for 20 years 1996–2014 with four sub periods P1, P2, P3, P4.

Table 3 lists the different effects that cause changes in market share of India in the world for Bovine meat. Bovine meat exports changed by 88.36, 178.58, 8.37 and 541.15 thousand tonnes in P1, P2, P3 and P4 respectively. This change in exports was mainly due to competitive effect (Table 4). Indian bovine meat exports were competitive in world in P1 and P2 but this competitive effect decreased in P3 (-271.45) when growth effect was dominant. In P3, increase in demand was responsible for increase in exports. But in recent period i.e P4 again competitive effect accounted for growth of the bovine meat exports. Overall, bovine meat exports growth was dominated by competitive effect in all periods except P2. Second order effect accounted for less than 15% for all periods.

Similarly, in case of major importing countries, import growth of countries had major share as indicated by higher values of structural effect. Overall bovine meat exports to major destinations increased by 285.2 thousand tonnes, which was explained by structural effect (91.2%).

But in case of other countries, competitive effect accounted for the largest share of 79.1%, 54.1%, 95.2%, 71.3% for growth of the bovine meat exports by 26, 29.8, 117.9, 559.2, thousand tonnes in P1, P2, P3 and P4. Overall, bovine meat exports changed by 1044.2 thousand tonnes, which was explained by competitive effect (55.1%).

It can be concluded that while the export growth of major destinations was due to structural effect, structural effect had a major share in influencing growth in major destinations. Hence exports to traditional countries increased only due to increased demand.

Overall Indian bovine meat exports to the world increased due to competitive effect may be resulting from cheaper price as our products were cheaper than other competitors.

The growth in Indian bovine meat exports to the world in all the periods except P3 was mainly due to of change in the market share of Indian bovine meat exports to world (competitive effect). But in P3 growth was mainly due to changes in exports of Indian bovine meat exports in the world (the structural effect).

Having discussed above the CMS results for world it is important to analyse the results at individual country level to find out the major destinations in future. The results of CMS decomposition analysis for the selected countries for different periods (1996–2014) are summed in Table 4 and Fig. 2.

It is evident from Table 4 that increase in demand was responsible for increase in exports in P4 for the countries like Bahrain, Kuwait, Malaysia, Oman, Yemen, UAE, Saudi Arabia, Maldives, Angola as indicated by import growth effect of 135.78%, 74.69%, 104.7%, 259.22%, 77.43%, 169.16%, 84.36%, 79.39%, 92.85%. In other words, import demand had driven the export growth of India for these countries. For world and other countries increased competitiveness accounted for increase in exports. India benefited most from increased demand from Oman followed by Bahrain, UAE, Malaysia.

For countries like Iran, Liberia, Senegal, decreased

Table 3. Decomposition of export quantity of Indian bovine meat to World (CMS analysis)

S.No.	Main component	World					Total imp countries					Other countries				
		P1	P2	P3	P4	Overall	P1	P2	P3	P4	Overall	P1	P2	P3	P4	Overall
1	Structural effect	31.04	35.93	389.68	28.77	10.95	-1.8	79.9	-112.3	-249.6	91.2	5.1	34.5	2.3	15.8	0.5
2	Competitive effect	58.74	51.41	-271.45	61.16	46.29	102.5	12.9	160.4	318.0	3.2	79.1	54.1	95.2	71.3	55.1
	a) GCE	0	0	0	0											
	b) SCE	100	100	100	100											
3	Second order effect	10.22	12.66	-18.23	10.07	42.76	-0.8	7.2	51.9	31.6	5.6	15.9	11.5	2.5	12.8	44.4
	a) PSOE	17.4	24.62	6.72	16.46											
	b) DSR	82.6	75.38	93.28	83.54											
		<i>Change in export quantity</i>														
	(%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Absolute Change ('000 tonnes)	88.36	178.58	8.37	541.15	1329.5	62.3	148.8	-109.5	-18.1	285.2	26	29.8	117.9	559.2	1044.2

GCE, General competitive effect; SCE, specific competitive effect; PSOE, pure second-order effect; DSR, dynamic structural residuals. Note: Main effects are % to change in export quantity and sub components are given in % to change in main effects.

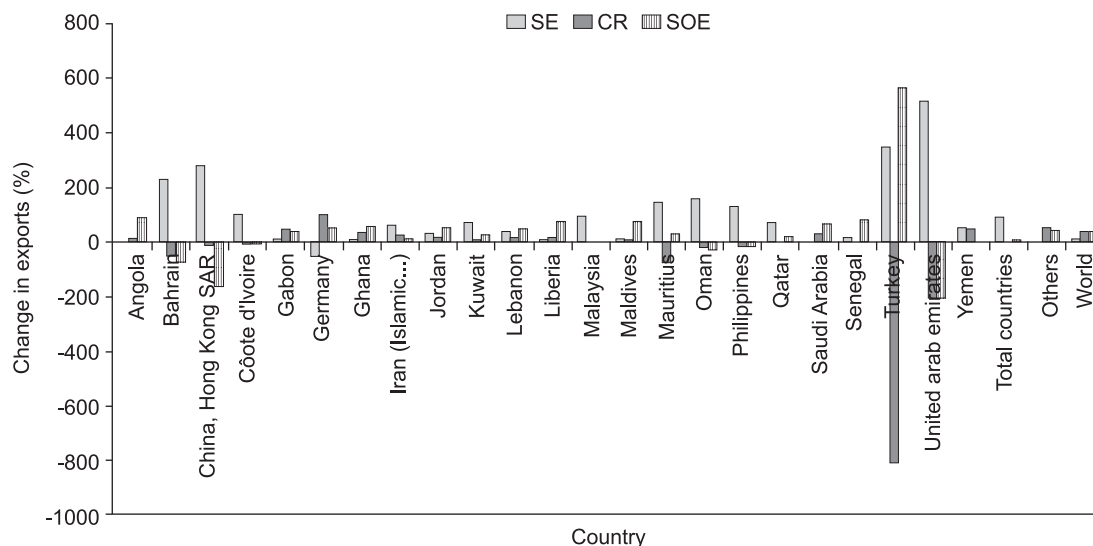


Fig. 2. Constant Market Share (CMS) analysis of India’s major destinations, overall (1996–2014)-Bovine meat SE, structural effect; CR, competitive effect; SOE, second-order effect.

Table 4. Decomposition of exports quantity of Indian Bovine meat to major destinations (1996-2014)

Country	Absolute change in export quantity (000 tonnes)	Absolute change in export quantity (000 tonnes)	Contribution of different effect					
			P4			Overall		
			Structural effect	Competitive effect	Second order effect (% to change in export quantity)	Structural effect	Competitive effect	Second order effect
Angola	9.97	31.12	92.85	4.98	2.18	0.85	10.13	89.02
Bahrain	0.59	1.22	135.78	-27.42	-8.36	231.83	-54.61	-77.22
China	-0.54	0.23	-275.07	132.97	242.10	281.23	-13.01	-168.22
Côte d’Ivoire	-1.95	0.19	62.74	76.17	-38.91	100.58	-0.33	-0.24
Gabon	-1.89	4.80	-66.55	142.26	24.29	10.98	50.36	38.66
Germany	0.00	-0.05				-54.29	100.00	54.29
Ghana	-2.31	1.00	35.94	85.13	-21.07	7.24	36.04	56.72
Iran	-14.33	6.06	103.19	-6.74	3.55	62.04	25.52	12.44
Jordan	-42.82	26.01	78.49	40.84	-19.33	31.57	14.35	54.08
Kuwait	6.97	24.30	74.69	20.32	4.99	70.11	5.50	24.39
Lebanon	2.54	8.85	4.09	94.58	1.33	35.79	16.10	48.10
Liberia	-0.08	1.51	674.93	-881.18	306.25	8.20	15.40	76.40
Malaysia	18.00	65.86	104.72	-4.00	-0.72	96.53	1.64	1.83
Maldives	0.06	1.02	79.39	19.57	1.04	13.67	7.87	78.46
Mauritius	-0.56	-1.13	40.28	64.09	-4.37	144.53	-76.86	32.33
Oman	0.10	6.08	259.22	-156.17	-3.05	154.05	-22.91	-31.14
Philippines	-3.33	19.60	-252.24	300.03	52.21	133.76	-16.60	-17.16
Qatar	-0.96	5.54	-58.64	146.87	11.77	74.35	3.01	22.64
Saudi Arabia	9.39	72.65	84.36	13.90	1.73	0.82	30.39	68.79
Senegal	-0.46	3.83	153.04	-63.46	10.42	18.04	2.86	79.10
Turkey	0.08	-0.33	-1470.95	33263.23	-31692.28	343.70	-808.57	564.86
UAE	2.87	6.85	169.16	-61.52	-7.64	511.31	-205.86	-205.45
Yemen	0.56	0.06	77.43	18.33	4.24	52.64	46.69	0.67
Total countries	-18.11	285.27	-249.61	317.97	31.64	91.19	3.23	5.57
Others	559.27	1044.24	15.83	71.32	12.85	0.51	55.09	44.40
World	541.15	1329.51	28.77	61.16	10.07	10.95	46.29	42.76

competitiveness was main source of decreased growth of Indian exports (Fig. 2). Decrease in demand has decreased exports to countries viz. China, Gabon, Philippines, Qatar, Total countries. The Negative import growth effect makes clear that India's export share is coming down in these.

For the overall period, India's exports grown positively in all most all the countries with few exceptions (Germany, Mauritius, Turkey). Analysis of sources of growth shows that for most of the countries like Bahrain, Kuwait, Malaysia, Oman, Yemen, UAE, Philippines, Qatar, Total countries China, Côte d'Ivoire Iran (Islamic Republic of) increase in demand is responsible for the increase in exports with a maximum value of 511.3% for UAE, followed by China (281.2%), Bahrain (231.8%) Oman, (154%) Philippines (133.7%) and Côte d'Ivoire (100.5%) in overall period.

In accordance with P4, increased competitiveness accounted for the increase in exports in case of world and other countries. Overall India benefited most from import growth of UAE, China, Bahrain, Oman, Philippines, Côte d'Ivoire.

It can be inferred that India's export growth to traditional destinations was caused by the shift in demand from importing countries whether it was positive or negative. In both PI and overall periods, Bahrain, Kuwait, Malaysia, Oman, Yemen, UAE's exports increased due to increased demand. India should increase its competitiveness in these countries to better utilize the increased import growth.

The results revealed that Indian bovine meat was not competitive in all the traditional markets, while it was competitive in new markets. These markets are significant from the point of both export share, market share since the share of new markets in India's exports increased from 5.57% in PI to 61.02% P4 with an average share of 28.72% (growing @18.63%) and India's market share in total imports of new countries increased from 0.23% to 11.2% with an average share of 3.46% (growing @ 30.43%) during the study period (1996–2014). The combined advantage of export share, market share along with the positive competitive effect makes these new countries significant for India's Bovine meat exports. Hence India should concentrate on these markets.

The present study attempts to explain the export performance of Indian Bovine meat trade and its competitiveness in the International market for the period of 20 years from 1996–2014. Performance was studied using growth of exports, market shares, export shares and source of growth was analyzed by using two stages CMS analysis to decompose the growth of Indian Bovine meat exports into broad components and its sub components. It was found that overall Indian bovine meat exports registered a growth rate of 13.03%, 7.94% and 22.01% in terms of quantity, price and exports value respectively.

The share of India in world Bovine meat exports fluctuated and remained less than 10% for most of the years. India's bovine meat exports are increasing rapidly to other countries with highest overall growth of 34%, while the

growth of major importers kept at 6.56%. Overall world imports from India has grown @ 13.03% during 1996–2014. It can be concluded that while India's market share in other countries increased, share in importing countries decreased during the study period. With all most all major importing markets, India had a higher market share more than 25%. Malaysia, UAE, Philippines, Iran, Jordan were India's favourite top five market destinations during 1996–2000 (PI) which jointly accounted for about 79.37% of total exports of bovine meat from India. Overall India has exported 94.43% of its exports to major importing countries in PI. It exported only 5.57% to other countries. Though share has decreased Malaysia, UAE, Philippines, Jordan, Iran have been major traditional importing countries since 1996 as far as India's bovine meat exports are concerned.

India showed significant growth in Bovine meat exports and market shares for all countries in all periods (with few exceptions). The increase can be explained by a shift in demand and increasing competitiveness. CMS results showed that exports to traditional countries is increasing only due to increased demand. India's exports showed positive change between 1996–2014 in all most all the countries with few exceptions (Germany, Mauritius, Turkey). Overall India had benefited most from import growth of UAE, China, Bahrain, Oman, Philippines, Côte d'Ivoire as indicated by the positive structural effect. In accordance with P4, increased competitiveness had accounted for the increase in exports in the case of world and other countries. Cheaper exports of India are also one reason behind the increasing competitiveness. It can be inferred that India's export growth to traditional destinations was caused by a shift in demand from importing countries whether it is positive or negative. The results reveal that Indian bovine meat was not competitive in all the traditional markets, while it is competitive in new markets. These markets are significant from point of both export share, market share. Combined advantage of export share, market share along with positive competitive effect makes these new countries significant for India's Bovine meat exports. Hence India should concentrate on these markets. The results of CMS analysis revealed that Indian bovine meat exports was not very competitive in traditional markets, which formed a bulk 71.28% in total exports of the study period as the major Indian destinations showed negative competitiveness effect, positive growth effect. This shows that India does not have any competitiveness effect in these destinations on its own, but rather India's export to these destinations was increasing due to growth in world bovine export and also due to increased demand in these destinations. However, new countries showed significant competitiveness effect with negligible growth effect. Thus new countries can be major destination for Indian bovine meat and requires emphasis. India should make efforts to increase its competitiveness in traditional markets to better utilize the increased import growth. Also it should concentrate on new markets to increase its share. Dual strategy of penetrating into new markets while concentrating

on existing markets by increasing competitiveness will make India as major player in the world bovine meat trade. To conclude there has been significant improvement in export of Bovine meat from India and this positive development will encourage more trade and concentrating more on destinations where it has a competitive advantage and increasing competitiveness of existing markets will increase foreign exchange in the years to come.

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