



An analysis of India-Kazakhstan bilateral trade relation

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Abstract

The bilateral trade between India and Kazakhstan has shown a substantial growth in recent years and Kazakhstan has become India's largest trade partner in Central Asia. This paper examines the bilateral trade between India and Kazakhstan from 1994 to 2019. Trade Intensity Index (TII) has been used to analyze the strength of India-Kazakhstan trade relation. To identify the product sectors in which the two countries enjoy comparative advantage (over each other) at HS-2 Digit level, Revealed Comparative Advantage (RCA) method has been used. The estimated results of trade Intensity Index reveal that India's imports, as well as exports, are less intense with Kazakhstan. Similarly, the exports and imports of Kazakhstan are also less intense with India. Moreover, the results of the RCA reveal notable trade prospects for both the countries.

Keywords: India, Kazakhstan, trade, revealed comparative advantage (RCA), trade intensity index (TII)

Introduction

India was one of the first countries to recognize Kazakhstan's independence. In February 1992, diplomatic relations have been established between the two countries. The Inter-Governmental Commission (IGC) established in 1993, is a leading bilateral institutional mechanism for the growth of cooperation in trade, commerce, science, technology and industry. It has been also agreed by both the countries to create two bilateral Joint Working Groups on transport, communication and health for accelerating bilateral relations in these sectors. In Central Asia, Kazakhstan is India's leading trade and investment partner. According to official trade statistics, bilateral trade between India and Kazakhstan amounted to US\$ Million 1,099.94 in 2017 (Direction of Trade IMF). Indian Space Research Organization (ISRO) has submitted its proposals to develop two communications and one radar satellite on the Kazakh side and both sides agreed to work together on space issues in order to bring about better cooperation (MEA Govt of India). On July 12, 2018, the 6th Trade and Economy Joint Working Group meeting took place at Nur-Sultan (formerly known as Astana). This paper examines Indo-Kazakh trade compatibility with the help Trade Intensity Index (TII) and Revealed Comparative Advantage (RCA). The Trade Intensity Index (TII) has been used to analyze Indo-Kazakh trade relation's strength. To identify the product sectors in which India and Kazakhstan have comparative advantage (over each other) at HS-2 Digit level, Revealed Comparative Advantage (RCA) method has been used.

Review of Literature

Senapati (2009) ^[9] comments that good bilateral relations are on the rise between India and Kazakhstan. Kazakhstan is seeking Indian expertise in technology and modernization programs, and India needs access to hydrocarbons from Kazakhstan to meet its growing energy demands. There is an enormous scope for Indian Foreign Direct Investment (FDI) in sectors namely: pharmaceuticals, metallurgy, IT, hydrocarbons, space technology and nuclear energy. Kazakhstan looks to India as a potential source of FDI which is expected to increase its capital stock, knowledge and technology spillovers. According to Kukeeva and Azimkhanov (2013) ^[7] India finds the Eurasian region to be its extended neighbourhood and attaches considerable significance to its geopolitical and strategic climate in Central Asia. India's anti-territorial sponsorship has made it a closer ally of Russia and the Central Asian nations. Active Chinese presence in Kazakhstan and Russia is an apparent reality that challenges Indian policymakers and business people. With its civilizational and cultural links to the region, India can play a balancing role coupled with its soft-power approach. Taubaldiyeva, Iskakova and Kokeyeva (2016) ^[11] argues that the high-tech and information-technology cooperation between Kazakhstan and India cannot be considered satisfactory. India has a huge market for power and other goods. History, culture, and common political values bind India and Kazakhstan together. The economies of India and Kazakhstan have a high degree of complementarity. This complementarity has the potential to promote mutual growth and development.

Database and Methodology

The data required for the present study is secondary in nature, which has been collected from highly placed sources like Direction of Trade IMF, UNCOM Trade and International Trade Centre. After having acquired the data, appropriate methods have been employed to achieve the stated objectives, which includes:

Trade Intensity Index (TII)

Trade Intensity Index is a trade statistic used to determine whether the value of trade between the two countries is greater or smaller than expected based on their importance in the world trade. It is defined as the ratio of the share of the destination of interest in the exports of the region and the share of the destination of the interest in the World's exports as a whole. Mathematically it is expressed as:

$$\text{Trade Intensity Index (TII)} = (X_{ij}/X_{it}) / (X_{wj}/X_{wt}) \quad (i)$$

Where

X_{ij} is the value of Country I 's exports to Country J .

X_{it} is the value Country I 's total export

X_{wj} is the value of world exports to Country J .

X_{wt} is the value of total World export.

This indicator theoretically takes values between 0 and ∞ . A value of greater than 1 indicates a more intense trade relationship between the countries involved.

Trade Intensity Index is divided into Export Intensity Index (EII) and Import Intensity Index (III) for analyzing the pattern of Exports and Imports.

$$\text{Export Intensity Index (EII)} = (X_{ij}/X_{it}) / (M_{jt}/(M_{wt} - M_{it})) \quad (ii)$$

Where

X_{ij} is the value of Country I 's exports to country J

X_{it} is the value of Country I 's total export

M_{jt} is the value of Country J 's total import

M_{wt} is the value of the World's total import

M_{it} is the value of Country I 's total import.

$$\text{Import Intensity Index (III)} = (M_{ij}/M_{it}) / (X_{jt}/(X_{wt} - X_{it})) \quad (iii)$$

where

M_{ij} is the value of Country I 's imports from country J

M_{it} is the value Country I 's total imports

X_{jt} is the value Country J 's total exports

X_{wt} is the value of the World's total exports

X_{it} is the value of Country I 's total exports

Revealed Comparative Advantage (RCA)

This is another trade statistic known as the Balassa index used to identify a country's export advantage and disadvantage with respect to the rest of the World in a particular class of goods and services. RCA of a country under certain commodity class is given by the proportion of the country's exports under consideration divided by the proportion of world exports of that class. Mathematically, it is calculated as:

$$RCA_{ijk} = \frac{\frac{x_{ijk}}{X_{ij}}}{\frac{x_{wjk}}{X_{wj}}} \quad (iv)$$

Where x_{ijk} is the value of exports of product k from country i to destination j , X_{ij} are total exports from country i to destination j , x_{wjk} is the value of exports of product k from World to destination j , and X_{wj} is the total world exports to destination j .

If the RCA value lies between 0 and 1, it indicates a comparative disadvantage, while above 1 indicates comparative advantage.

A disadvantage of the RCA index is its asymmetry, i.e. it is unbounded for the sectors with a revealed comparative advantage, and has a zero-lower bound for the sectors with a comparative disadvantage. This problem is overcome by using normalized RCA (NRCA) proposed by Laursen (2000). The normalized RCA index, NRCA, is defined mathematically by:

$$NRCA_{ijk} = \frac{RCA_{ijk} - 1}{RCA_{ijk} + 1} \quad (v)$$

The NRCA index's interpretation is similar to the standard RCA measure except that the critical value is 0 instead of 1 (i.e., NRCA's negative sign indicates comparative disadvantage while the positive sign of NRCA indicates comparative advantage). The values of NRCA are symmetric about 0, ranging from -1 to +1.

Empirical Results and Analysis

India's Total Trade with Kazakhstan

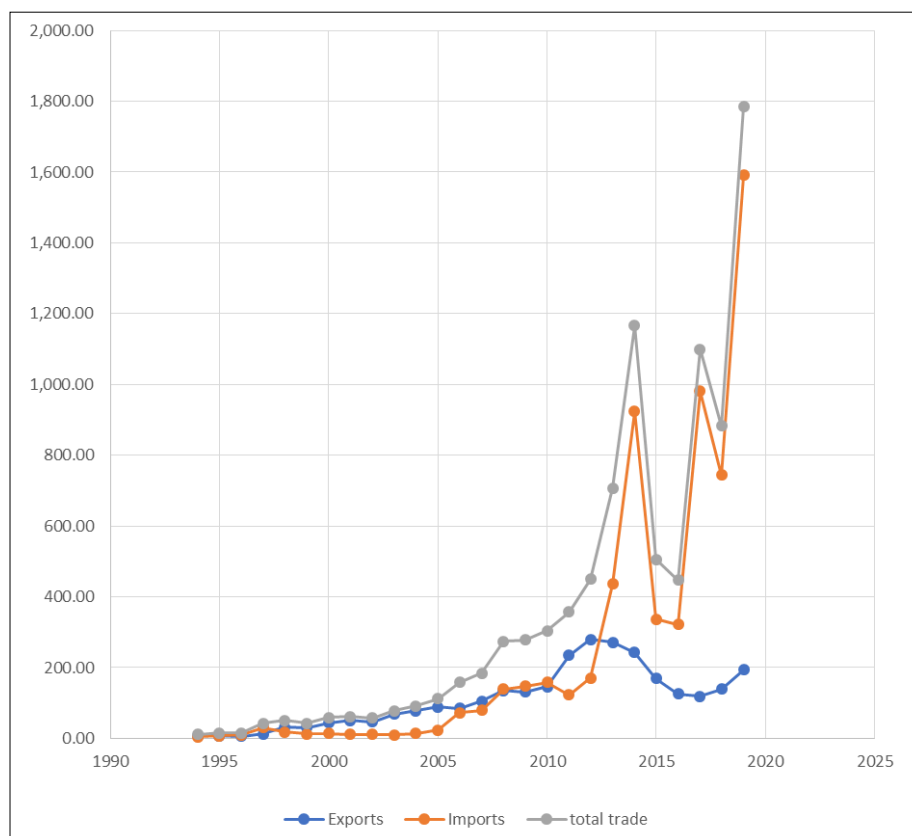
India's total trade with Kazakhstan for the period 1994-2019 is shown in Table 1. From 1994 to 2019, there has been a massive increase in Indo-Kazakh bilateral trade. Total trade between the two countries has risen from a mere amount of US\$10.90 million in 1994 to US\$1785.44 million in 2019. At the same time, Indian exports to Kazakhstan rose from US\$7.04 million in 1994 to US\$ 193.70 million in 2019. Indian imports from Kazakhstan have also increased substantially, from US\$ 3.86 million to US\$ 1591.74 million in the same period. Indian imports from Kazakhstan have increased more in comparison to Indian exports to Kazakhstan during the study period.

Table 1: India's Total Trade with Kazakhstan for the period 1994-2019 (Values in US\$ Million)

Year	Export	Export Growth Rate	Import	Import growth rate	Total Trade	Total Trade Growth Rate
1994	7.04		3.86		10.90	
1995	7.23	3%	7.76	101%	14.99	38%
1996	5.60	-23%	9.65	24%	15.25	2%
1997	12.43	122%	30.15	212%	42.58	179%
1998	32.28	160%	18.30	-39%	50.58	19%
1999	29.90	-7%	13.23	-28%	43.13	-15%
2000	44.38	48%	13.87	5%	58.25	35%
2001	50.65	14%	10.67	-23%	61.31	5%
2002	46.58	-8%	11.39	7%	57.98	-5%
2003	67.83	46%	10.13	-11%	77.95	34%
2004	78.35	16%	13.85	37%	92.20	18%
2005	88.50	13%	23.57	70%	112.07	22%
2006	85.22	-4%	72.73	209%	157.95	41%
2007	104.73	23%	79.64	10%	184.37	17%
2008	135.22	29%	139.32	75%	274.54	49%
2009	130.54	-3%	147.25	6%	277.79	1%
2010	146.28	12%	157.79	7%	304.07	9%
2011	234.21	60%	122.81	-22%	357.02	17%
2012	279.22	19%	169.94	38%	449.16	26%
2013	271.81	-3%	435.67	156%	707.48	58%
2014	243.11	-11%	923.55	112%	1,166.66	65%
2015	169.04	-30%	336.78	-64%	505.83	-57%
2016	125.58	-26%	322.11	-4%	447.69	-11%
2017	118.39	-6%	981.55	205%	1,099.94	146%
2018	138.71	17%	743.81	-24%	882.52	-20%
2019	193.70	40%	1,591.74	114%	1,785.44	102%

Source: Direction of Trade IMF and Researcher's calculation.

Fig 1 presents the graphical representation of the tabulated data (in Table 1). As indicated, India's total trade with Kazakhstan is represented by the grey curve, India's exports to Kazakhstan by the blue one, and India's imports from Kazakhstan by the orange curve. All three curves show an increasing trend.



Source: Author's compilation from Table 1

Fig 1: Bilateral Trade between India and Kazakhstan

India-Kazakhstan trade intensity index

India's import intensity index with Kazakhstan is less than one for all the years except 2019 (Table 2). Similarly, India's export intensity index with Kazakhstan is also less than one for all the years from 2008 to 2019, indicating that India's imports, as well as India's exports, are less intense with Kazakhstan than the rest of the world in terms of its trade pattern. On the other hand, Kazakhstan's export intensity index is less than unity for all years except 2019 and import intensity index with India is also less than unity for all years for the same period. It indicates, in comparison to its trade pattern with other countries in the World, the exports and imports of Kazakhstan are also less intense with India.

Table 2: Trade Intensity Index between India and Kazakhstan

Year	Export Intensity Index (EII)		Import Intensity Index (III)	
	India's EII with Kazakhstan	Kazakhstan's EII with India	India's III with Kazakhstan	Kazakhstan's III with India
2008	0.025	0.011	0.111	0.521
2009	0.322	0.087	0.147	0.431
2010	0.409	0.088	0.131	0.624
2011	0.363	0.021	0.059	0.426
2012	0.358	0.076	0.072	0.523
2013	0.303	0.155	0.231	0.448
2014	0.328	0.549	0.519	0.411
2015	0.329	0.198	0.335	0.539
2016	0.294	0.498	0.425	0.548
2017	0.234	0.599	0.925	0.473
2018	0.234	0.579	0.495	0.464
2019	0.280	1.047	1.036	0.428

Source: Author's calculation based on the UN COMTRADE database

India's Comparative Advantage over Kazakhstan

Table 3 shows the sectors where India enjoyed comparative advantage over Kazakhstan. At the HS 2-digit level India enjoyed comparative advantage (over Kazakhstan) in 15 sectors in 2019. Among these sectors, "coffee, tea, maté and spices" (HS-09) had a maximum comparative advantage with an NRCA value of 0.946 and "other vegetable textile fibres; paper yarn and woven fabrics of paper yarn" (HS-53) was having a minimum

comparative advantage with an NRCA value of 0.042 (Table 2). The other sectors where India have comparative advantage (over Kazakhstan) in 2019 comprises of "lac; gums, resins and other vegetable saps and extracts" (HS-13); "pharmaceutical products" (HS-30); "raw hides and skins (other than furskins) and leather" (HS-41); "electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ..." (HS-85); "oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal ..." (HS-12); "explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations" (HS-36); "organic chemicals" (HS-29); "cereals" (HS-10); "articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles ..." (HS-42); "miscellaneous manufactured articles" (HS-96); "essential oils and resinoids; perfumery, cosmetic or toilet preparations" (HS-33); "carpets and other textile floor coverings" (HS-57) and "ceramic products" (HS-69).

Table 3: Sectors where India have comparative advantage over Kazakhstan at HS-2digit level: 2019 (Based on NRCA Index)

Rank	HS CODE	Product Description	NRCA
1	'09	"Coffee, tea, maté and spices"	0.946
2	'13	"Lac; gums, resins and other vegetable saps and extracts"	0.840
3	'30	"Pharmaceutical products"	0.796
4	'41	"Raw hides and skins (other than furskins) and leather"	0.783
5	'85	"Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ..."	0.493
6	'12	"Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal ..."	0.451
7	'36	"Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations"	0.325
8	'29	"Organic chemicals"	0.195
9	'10	"Cereals"	0.175
10	'42	"Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles ..."	0.146
11	'96	"Miscellaneous manufactured articles"	0.115
12	'33	"Essential oils and resinoids; perfumery, cosmetic or toilet preparations"	0.079
13	'57	"Carpets and other textile floor coverings"	0.074
14	'69	"Ceramic products"	0.049
15	'53	"Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn"	0.042

Source: International Trade Centre, Computed

Kazakhstan's Comparative Advantage over India

Table 4 shows the sectors where Kazakhstan enjoyed comparative advantage over India. At the HS 2-digit level Kazakhstan enjoyed comparative advantage (over India) in only three sectors in 2019, and these sector are "inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, ..." (HS-28); "mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ..." (HS-27) and "salt; sulphur; earths and stone; plastering materials, lime and cement" (HS-25) .

Table 4: Sectors where Kazakhstan have comparative advantage over India at HS-2digit level: 2019 (Based on NRCA Index)

Rank	HS Code	Product Description	NRCA
1	'28	"Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, ..."	0.709
2	'27	"Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ..."	0.455
3	'25	"Salt; sulphur; earths and stone; plastering materials, lime and cement"	0.408

Source: International Trade Centre, Computed

Conclusion

From 1994 to 2019, there has been a significant increase in Indo-Kazakh bilateral trade. Both Indian exports to Kazakhstan and Indian imports from Kazakhstan have substantially increased. The results of Trade Intensity Index (TII) reveal that India's imports and exports are less intense with Kazakhstan compared to its trading pattern with the rest of the world. Similarly, Kazakhstan's exports and imports are also less intense with India than its trading pattern with other countries of the world. It can be concluded the both countries have been trading less intensively with each other which suggests that there is ample room for enhancement of trade between the two countries. Based on their revealed comparative advantage over each other, there are several potential export interest sectors to both countries. Furthermore, it can be inferred that both countries can benefit

from bilateral trade as their comparative advantage structure differs from one another. This difference in the structure of comparative advantage has the potential to increase trade between the two countries manifold.

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