

India's Protectionism in Its Services Exports

—Evidence from the Changing Services Export Promotion Indicator During 1980–2018

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Abstract—The perspective of this research is to explore how much India's protectionism in the services exports has been. This study used the annual data from UNTCAD and United Nations Statistics Division for the period of 1980-2018 and presented a new method to measure the degree of a country's export policy interference. The results show that India has had revealed comparative advantages in the services export for most years during the sample period, while she has adopted strong export promotion policies. After 1996, India's policy interference in the services exports suddenly strengthened. This research concluded that India has attempted to improve the services export comparative advantages by export promotion policies.

Keywords—India; trade in services; export promotion policy; trade pattern; comparative advantage

I. INTRODUCTION

India has been a BRIC or BRICS country with considerable economic growth [1-2] and a large population that is only secondary to China. India has been among the low-income developing countries; however, its experiences and lessons are usually compared with that of China in various aspects [3-5]. One of the important features in its admirable growth is that India has achieved successful development in the services trade, especially in the services exports since the mid 1990s. The development may be one of the results of the Indian efforts of services export promotion [6-8].

Export promotion measures policies which are in nature of implicit protectionism [9], with targets of improving the comparative advantages of a country's trade (exports) in specific products in order to fulfill the industrial adjusting and developing targets [10]. The government intervening policies by means of either export promotion or import restriction may hurt the fundamentals of fair trade and free trade, and there is no reason to only label the import restriction protectionism

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while encouraging the export promotion policies.

This research presents an innovative method to measure the changing protectionism in the form of export promotion in services trade. The empirical evidence from the Indian may have rich implications in understanding India's changing attitude to the export promotion policies and the protectionism in services, as well as towards that of the commodity trade.

II. METHODOLOGIES AND MATERIALS

This research aims at proposing a new method to gauge the degree of an individual country's government interference efforts by services export promotion (India in this paper).

A. Net export ratio

The starting point is the indicator of net export ratio (NX_{is}):

$$NX_{is} = (X_{is} - M_{is}) / (X_{is} + M_{is}) \quad (1)$$

where X_{is} and M_{is} are the total value of the Indian exports and imports in services. The indicator measures a country's balance of trade in relation to its total value of exports and imports. The indicator is also called the "net export capability" or the "international competitiveness" and the value range is (-1, 1) with a theoretical mean of 0.

B. Export comparative advantage

The indicator of comparative advantage ($RCAX$) reads:

$$RCAX = (X_{is} / X_i) / (X_{ws} / X_w) \quad (2)$$

where X_{ws} denotes the world total exports in services, and X_w indicates the world total exports in both goods and services. Previous literatures employed the indicator to analyze the trade patterns of commodities [11-12]. The range of $RCAX_{is}$ is (1, ∞) with the mean being uncertain, preventing the direct comparison across countries or products.

C. Export revealed symmetric comparative advantage

Dalum et al. proposes a transformation of the comparative advantage indicator [13] to address this problem by

$$RSCAX = (RCAX - 1) / (RCAX + 1) \tag{3}$$

RSCAX or services export revealed symmetric comparative advantage is a derivative of RCAX. The value range is (-1, 1) with a zero mean, which is identical to that of the net export ratio (NX_{is}) and therefore it allows for the direct comparisons.

D. Indicator of export promotion degree

This study presents an innovative approach to capture India's protectionism by means of export promotion. India's services export promotion indicator (HX_{is}) is written as:

$$HX_{is} = NX_{is} - RSCAX_{is} \tag{4}$$

where the subscript of *is* indicates India's services trade, NX_{is} stands for the Indian net export ratio in services trade, and $RSCAX_{is}$ refers to the revealed symmetric comparative advantage of the Indian exports in services trade.

Some previous studies employed RSCAX and (or) HX to analyze the patterns of the commodity exports (or imports) of China [14-16], Japan [17] and Korea [18], and conducted time series analyses [19] or panel co-integration analyses [20] as well as short-run and long-run Granger causality analyses. They found that most of the East Asian countries had adopted export promotion protectionism policies, while the United States had reversely imposed promotion policies in the import of primary products [21]. Consequently, the indicator of HX may be also applicable in the Indian export patterns in services.

E. Data source and processing

We obtained the total values of “exports and imports of trade in services” and that of “exports and imports of goods and services” for 1980-2018 from UNTACD STATS database (<https://unctadstat.unctad.org/wds/ReportFolders.aspx>) for the country of India and that of the world in “Trade trends” under the folder of “International trade in goods and services”.

A noteworthy point is that UNTACD provides the data that follows “the IMF Balance of Payments and International Investment Position Manual Fifth classification (BPM5)” for the period of 1980-2013 (discontinued) and “the IMF Balance of Payments and International Investment Position Manual Sixth classification (BPM6)” for the period of 2005-2018 [22], generating an overlap of nine years for the period of 2005-2013. We obtained India's comparative advantages in the services exports by employing both classifications of the BPM5 and BPM6, and thus made a comparison of the “relative difference in proportions” between the two classifications.

The examination results indicate that by employing the data of the two classifications, the “relative difference” is the minimal in the year of 2009, helping us decide to combine the data under BPM5 for 1980-2008 and BPM6 for the period of 2009-2018, in order to generate a continuous long time series.

III. RESULTS

Using Eq. (3) and Eq. (4), we obtained the Indian export patterns in services trade. Fig. 1 depicts the Indian changing indicator of RSCAX and HX.

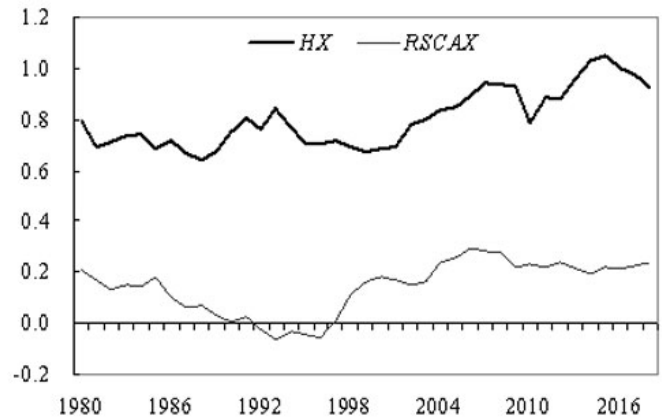


Fig. 1. India's indicators of HX and RSCAX (1980-2018)

A. Pattern of India's RSCAX

India's RSCAX in services exports had been declining since 1980 and it hit a low of -0.0588 in the year of 1993. However, the Indian RSCAX indicators have been moderately positive except for the period of 1992-1996, when they were slightly below zero. After the year of 1994, the Indian RSCAX indicators in services exports have been positive with a slightly increasing trend again. Comprehensively speaking, India has been comparative advantaged in the services exports.

The 1997-1998 East Asian financial crisis [23] exerted contrariwise and improving influences on India's comparative advantage in services exports; and the balance of payments crisis in 2013 had very little or no impact on India's comparative advantage in services exports, and the 2008 subordinate crisis and the following financial crisis [24] seemed to obstruct the further improvement.

B. Pattern of India's HX

India's indicator of export promotion degree (HX) has been persistently positive during the sample period of 1980-2008 and followed roughly the same pattern of time pattern of the RSCAX except for 1988-1996, during which the indicators of HX had seemed to change reversely with India's RSCAX.

The positive large HX indicators may insinuate that India has adopted protectionism or government interference policies, which are featured with export promotion in its development of export in services. India's increasing HX indicators implies that the country strengthened export promotion policies in its exports in services, which had been intrinsically high enough. A possible explanation is that India has attempted to improve its export comparative advantages in services trade while following the principles of Ricardian theory [25]. India may have premeditated and have adopted the industrial policies by promoting its services exports in which the country are comparatively advantaged, while the export promotion as well

as the industrial policies per se may have involved trade protectionism and may have hurt fair and free trade.

C. One-sample t-tests for India's RSCA and HX

In order to explore whether the Indian *RSCAX* and *HX* are significantly different from zero or not, we conducted one-sample T-tests on India's *RSCAX* and *HX* separately with 0 as the test value. The statistics software we used is SPSS 20.

Table 1 reports the one-sample T-test results.

TABLE I. ONE-SAMPLE T-TEST RESULTS

Variable	Test Value=0				
	T-stats ^a	Df ^b	Mean diff. ^c	S.D. ^d	S.E. ^e
RSCAX	8.6738 (0.0000) ^f	38	0.1439	0.1036	0.0166
HX	43.844 (0.0000)	38	0.8022	0.1143	0.0183

^a. T-stats is for the t-statistic of the one-sample t-test.
^b. Df stands for degree of freedom.
^c. Mean diff. indicates mean difference.
^d. S.D. is for standard deviation.
^e. S.E. refers to standard error.
^f. In parentheses are the significance of the T-value of the one-sample T-tests.

As shown in Table 1, both indicators of *RSCAX* and *HX* are significantly different from the test value of zero. The mean of India's *RSCAX* in services exports is 0.1439 and is significantly different from 0 at 1% level of confidence, while that of the degree of Indian export promotion is 0.8022 at a significance level of less than 1%. We therefore verified that India's *RSCAX* and *HX* in the exports in services are significantly positive, indicating that 1) India has enjoyed significantly positive comparative advantages in its exports in services; and 2) India has significantly imposed export promotion policies in the services trade, which has made the country's "net export ratio" or the "net export capabilities" in services exports distort and be significantly higher than the degree that is determined by the comparative advantages in the Indian exports in services.

D. Augmented Dicky-Fuller unit root tests for RSCA and HX

This study also performed augmented Dicky-Fuller (ADF) unit root tests in order to examine the data generation process of India's *RSCAX* and *HX* separately by using the software of Eviews 11.0 and by following the procedure as below [26]:

1) Step 1 is to assume that the optimal ADF test equation includes both a linear deterministic time trend and a constant (or an intercept) term. If the coefficients of the deterministic time trend and that of the constant are significant at 5% level of confidence and the null hypothesis that the time series has a unit root is rejected, we report the ADF unit root test result for the level time series to be non-stationary because a significant linear deterministic time trend makes the mean of the series vary across time. Therefore we proceed to step 2.

2) Step 2 is to assume that the optimal test type for the level time series only has a constant term and without the linear deterministic time trend. In the case that the coefficient of the constant term is significant at 5% confidence level, we report the ADF unit root test result irrespective of whether the level

time series is stationary or not. An insignificant coefficient of the constant term leads us to step 3.

3) Step 3 is to assume that the optimal test equation has no additional terms, or includes neither a deterministic time trend nor a constant. The rejection of the null hypothesis ends the ADF unit root test, otherwise we have to continue to step 4.

4) When none of the above mentioned steps reject the null hypothesis, we take the first-order differences of the time series and repeat the aforementioned process from step 2.

Table 2 shows the ADF unit root test results.

TABLE II. ADF UNIT ROOT TEST RESULTS

Level Time Series			First-order Differenced Time Series		
Variable	Test type ^a	T-stats ^b	Variable	Test type	T-stats
RSCAX	N, N, 0	-0.5296 (0.4806) ^c	ΔRSCAX ^d	N, N, 0	-4.5201 (0.0000)
HX	N, N, 0	-3.0333 (0.1369)	ΔHX	N, N, 0	-6.6256 (0.0000)

^a. For the test type, the first letter in the "test type" column stands for whether there is a constant ("C") or not ("N"); the second letter represents a deterministic linear trend, the inclusion of a deterministic linear trend is marked "T" and otherwise "N"; the third number indicates the lag length selected by Schwarz information criterion with a maximum of 9 lags.
^b. T-stats represent the ADF t-statistic.
^c. In parentheses are the probabilities for MacKinnon (1996) one-sided p-values of ADF t-statistic.
^d. "Δ" indicates the first-order difference of the time series.

Neither *RSCAX* nor *HX* is stationary but the first-order differences are both stationary, suggesting that both of *RSCAX* and *HX* indicators are first-order integrated time series. In the test results for the level series of *RSCAX* and *HX*, however, there is no deterministic time trend involved, preventing us to examine the features of the deterministic time trend in the series of *RSCAX* and *HX*. Table 3 shows the ADF test equations for the level series of *RSCAX*, and Table 4 reports that of *HX*.

TABLE III. ADF TEST EQUATION FOR RSCAX

Variable	Dependent: D (RSCAX)		Test Type: C, T, 1	
Independent	Coefficient	S.E.	T-Statistic	Prob.
RSCAX(-1)	-0.1428	0.0684	-2.0889	0.0445
D(RSCAX(-1))	0.2983	0.1574	1.8956	0.0668
C ^a	-0.0016	0.0124	-0.1269	0.8998
@TREND ^b	0.0012	0.0007	1.7500	0.0894
Adjusted R-squared: 0.1285		Durbin-Watson stat: 2.0178		

^a. "C" stands for the constant term in the assumed ADF test equation.
^b. "@Trend" denotes the deterministic time trend in the assumed ADF test equation.

TABLE IV. ADF TEST EQUATION FOR HX

Variable	Dependent: D(HX)		Test Type: C, T, 0	
Independent	Coefficient	S.E.	T-Statistic	Prob.
HX(-1)	-0.34963	0.1153	-3.0333	0.0045
C	0.2188	0.0758	2.8851	0.0067
@TREND	0.0033	0.0012	2.7810	0.0087
Adjusted R-squared: 0.1708		Durbin-Watson stat: 1.7904		

^a. "C" stands for the constant term in the assumed ADF test equation.
^b. "@Trend" denotes the deterministic time trend in the assumed ADF test equation.

The results reveal that both of the deterministic time trends for *RSCAX* and *HX* are significantly positive in the assumed ADF test equations, at 10% confidence level at least.

IV. CONCLUSIONS

This paper studies India's export comparative advantage in services and the degree of the Indian export promotion policies. By analyzing the time paths of the indicators of *RSCAX* and *HX* as well as conducting one-sample T-tests, we conclude that:

1) Both export promotion and import restriction policies are protectionism, which may largely hurt the fundamentals of free trade and fair trade in the process of globalization.

2) India has moderately high and increasing *RSCAX* during the sample period of 1980-2018, implying that India has comparative advantages in the exports in services.

3) India's *HX* exhibits a significantly positive time trend, suggesting that India has deliberately adopted promotion policies in the services exports, and the degree of the Indian policy interference has been reinforced during 1980-2018.

4) After the year of 1996, India's services export promotion has been strengthened, possibly because India has decided to impose the more aggressive industrial policies to push the economic growth, being afraid of being surpassed by China.

We call for studies on the indicator of revealed symmetric comparative advantage in services imports (*HM*) as well as the relationship between *HM* and *HX* for India and other countries.

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REFERENCES

- [1] A. Panagariya, "Why India lags behind China and how it can bridge the gap," *World Econ.*, vol. 30 (2), 2007, pp.229-248.
- [2] V. Badigannavar. "Is social partnership the way forward for Indian trade unions? Evidence from public services," *Int. Labour Rev.*, vol. 156 (3), 2016, pp.367-394.
- [3] A. Shingal, "The services sector in India's states: a tale of growth, convergence and trade," *World Econ.*, vol. 37 (12), 2015, pp.1773-1793.
- [4] Y. Li, and B. Zhang. "Development path of China and India and the challenges for their sustainable growth," *World Econ.*, vol. 31 (10), 2010, pp.1277-1291.
- [5] A.K. Lal, "Foreign direct investment, trade openness and GDP in China, India and Mexico," *Singapore Econ. Rev.*, vol. 62 (2), 2015, pp.1059-1076.
- [6] A. Broocks, and J.V. Biesebroeck, "The impact of export promotion on export market entry," *J. Int. Econ.*, vol. 107 (3), 2017, pp.19-33.
- [7] S.Z. Njinyah, J. Cadogan, and N. Boso, "The effectiveness of government policies for export promotion on the export performance of SMEs cocoa exporters in Cameroon," *Int. Market. Rev.* 35 (1), 2018, pp.164-185.
- [8] E. Siggel, "India's trade policy reforms and industry competitiveness in the 1980s," *World Econ.* 24 (2), 2010, pp.159-183.
- [9] Y. Hong, and S. Hong-Wei, "A test of dynamic comparative advantage hypothesis using panel data of the Chinese trade in medium-technology products," 2010 International Conference of Management, Science and Engineering, 2010, pp.1600-1605.
- [10] Y. Hong, J. Guan and H. Su, "How does Chinese trade pattern in goods diverge from equilibrium? an empirical examination using data of 1987-2011," *Inter. J. Adv. in Inform. Sci. Serv. Sci.*, 5, 2013, pp.352-360.
- [11] B. Balassa, "Trade liberalization and 'revealed' comparative advantage," *Manch. Sch. Econ. Soc. Stud.*, vol. 33 (2), 1965, pp. 99-123.
- [12] Y. Hong, W. Sun, and X. Mu, "Policy interference in the Japanese imports of the primary agricultural products," 2016 International Conference on Materials, Manufacturing and Mechanical Engineering (MMME 2016), 2016, pp.429-434.
- [13] B. Dalum, K. Laursen, and G. Villumsen, "Structural change in OECD export specialisation patterns: de-specialisation and 'stickiness'," *Int. Rev. Appl. Econ.*, vol. 12 (3), 1998, pp.423-443.
- [14] Yu Hong, S Ren, Z Yin, X. Mu, "Exploring the Chinese import policy on the low-technology manufactures of garment, textile and footwear," 2017 3rd International Conference on Humanity and Social Science (ICHSS 2017), 2017, pp. 79-83.
- [15] Y. Hong, S Ren, B Shao, X. Mu, "A Comparative analysis on the Export and import trade patterns of the Chinese low-technology manufactures," 2018 3rd PIL International Conference on Business, Social Sciences and Information Science (PIL-BSI 2018), 2018.
- [16] Y. Hong, S Ren, B Shao, and X. Mu, "Comparing the export and import trade patterns of the Chinese low-technology manufactures," *Advances in Intelligent Systems Research*, volume 164, 2018, pp.105-108.
- [17] Y. Hong, W. Sun, and X. Mu, "Policy Interference in the Japanese Imports of the Primary Agricultural Products," 2016 International Conference on Materials, Manufacturing and Mechanical Engineering (MMME 2016), 2016, pp. 429-434.
- [18] Y. Hong, B.N. Shao, W. Sun, and X.W. Mu. "Assessing the Policy Interference of the Korean imports of agricultural manufactures: 1976-2016," 4th International Conference on Education Reform and Modern Management (ERMM 2017), 2017.
- [19] Y Hong, Y. Yang, and X. Mu, "The import patterns of the Korean agro-manufactures: exploring the short-run and long-run Granger causal relationship" *Advances in Intelligent Systems Research*, volume 164, 2018, pp.109-112.
- [20] Y. Hong, W. Yang, J. Wang, "Export facilitation and comparative advantages of the Chinese low-technology manufactures: A panel Granger causality analysis," *J. Chem. Pharm. Res.*, vol. 6, 2014, pp. 1580-1585.
- [21] Y. Hong, Y.M. Yang, X.W Mu, "Assessing the U.S. trade policies in the primary products," *DEStech Transactions on Social Science, Education and Human Science*, 2018. *Advances in Intelligent Systems Research*, volume (164), 2018, pp. 148-151.
- [22] J. Haltmaier, "Have global value chains contributed to global imbalances?" *International Finance Discussion Papers* 1154, 2015.
- [23] B.A Iqbal, A. Turay, M. Hasan, and N. Yusuf, "India's outward foreign direct investment: emerging trends and issues," *Transnational Corp. Rev.* vol. 10 (1), 2018, pp.1-10.
- [24] M. Brownbridge, and C. Kirkpatrick, "Financial sector regulation: the lessons of the Asian crisis," *Dev. Policy Rev.* 17 (3), 2010, pp.243-266.
- [25] P.M. Morrow, "Ricardian-Heckscher-Ohlin Comparative Advantage: Theory and Evidence," *J. Int. Econ.*, Vol. 82, No. 2, pp. 137-151, 2010.
- [26] Y. Hong, "A study of the distortion of the Chinese trade patterns: dynamic analyses on the technical structures of products," Beijing: Economic Science Press, 2013. (In Chinese)