

Determinants of India's Export of Services post Liberalisation (1991-2015)

Trupti Goyal

Senior Research Fellow, (UGC : NET - SRF) Department of Economics, JNV University, Jodhpur, Rajasthan
(INDIA)

ABSTRACT : India launched New Economic Policy since July, 1991. Hall marks of this new policy were - Liberalisation, Privatisation and Globalisation. With this new policy there has been a rapid growth of India's Service Sector Export. This study is conducted to establish determinants of such rapid growth of service-sector exports. Taking time series data of various independent variables and using multiple linear regression model it has been established that the Degree of openness of Indian Economy, higher flow of Foreign Direct Investment (FDI), increased volume of technically qualified man power (human resources) have not only contributed positively but also significantly in accelerating the growth of service sector exports. Internet Density has also contributed positively but not significantly in this process. It is also found that World GDP and Real effective exchange rate (REER) have not contributed significantly to the process of acceleration of India's Export of Services during 1991-2015.

Key Words : Service Export, Determinants.

Date of Submission: 30-06-2019

Date of acceptance:20-07-2019

I. INTRODUCTION :

Import substitution was the hallmark of India's International Trade policy prior to trade liberalisation policy adopted during 1990s and thereafter. Under this policy imports of general goods were discouraged and import of capital goods and intermediate goods were allowed with import licences. Purpose of such conservative trade policy was to conserve scarce foreign exchange so that the same could be better utilised for imports of essential capital goods and intermediates. During 1980s our policy makers were not aware of the potential of India's service sector as a significant component of India's overall exports. Therefore little attention was paid by policy makers towards promotion of service exports. After liberalisation of Indian Economy Since 1991, exports of services increased rapidly in which information technology revolution played prominent role. IT & ITeS emerged as single largest component of India's service export basket overtaking traditional transport and travel service. Table 5/1 depicts rapid rise of India's service exports after 1991 and particularly during first decade of this century. From the figures given in Table 5/1 It can be discerned that in the year 1990 India's export of services as a percentage of India's GDP was merely 1.41 percent which increased to 3.39 percent in the year 2001, 6.71 percent in 2010 and 7.98 percent in the year 2013. Similarly India's share in world service export in the year 1990 was merely 0.6 percent which increased to 1.1 percent in 2000 and 3.2 percent in the year 2014. Likewise, share of India's services exports in India's total exports (goods + Services) has increased substantially as can be seen from the figures given in the Table 1.

Table 1 : Growth of India's Service Exports (1990-2015)

Year	Services Exports as % of India's GDP	Services Exports as % of India's Total Exports
1990	1.41	20.74
1991	1.78	21.28
1992	1.67	21.50
1993	1.77	21.36
1994	1.81	21.33
1995	1.84	20.44
1996	1.79	18.42
1997	2.11	21.06
1998	2.58	24.02
1999	3.00	29.66
2000	3.36	30.33
2001	3.39	27.42
2002	3.65	30.38
2003	3.82	30.95
2004	5.25	37.27
2005	6.26	38.46
2006	7.33	40.29
2007	7.22	40.66
2008	5.62	39.59
2009	6.84	32.76
2010	6.71	38.39
2011	6.25	34.41
2012	7.75	31.66
2013	7.98	32.82
2014	7.62	33.08
2015	7.38	33.38

Source : Calculation based on World Bank, WTO and RBI's Data Base.

For example, share of service-exports in India's Total Export was 20.74 percent in the year 1990 which has increased to 30.33 percent in the year 2000 and 33.38 percent in the year 2015. Interestingly the share of services exports was highest at 40.66 percent in the year 2007.

II. REVIEW OF LITERATURE :

India's service sector trade is little researched area. The studies on the subject are few and those too have been out of date by now. Yet few studies are worth mentioning here.

P.C. Verma (1996-97) has tried to investigate the behaviour of India's international trade in services. He has also analysed the determinants of service sector imports and exports for the period 1960-61 to 1988-89. This study related to the period prior to India's New Economic Policy - 1991.

James Gorden and Poonam Gupta (2004) in their IMF working paper highlighted India's Service revolution during 1990s and explored the factors behind the dynamism of service sector in India.

K.P.M. Tharakan, Ilke Van Beveran and Tom Van Ourti (2004) have studied the determinants of India's software exports and goods exports.

Pravarkar Sahoo, Ranjan Kumar Dash and Prabhu Prasad Mishra (2013) attempted to study determinants of India's service sector exports. This study is for the period 1980-2011.

Mini Thomas P. (2015) in her working paper attempted to study determinants of service trade in relation to India. Her study covered the period 1997-2012.

Trupti Goyal (this author) (2015) in her article (published in The Hindu Business Line dated 2.10.15) suggested measures and strategy to promote India's export of services.

III. Statement of problem : there has been a rapid growth of service sector exports since New Economic Policy - 1991. Basic question before this study is -what are the determinants of such acceleration and the relative role of each determinants ?

(iv) Objectives of the study : Attempt would be made to analyse the relative importance of various determinants of service sector exports and to suggest measures to promote service sector export.

(v) Methods and Methodology :

(i) Variables and sources of Data :

Variable	Meaning	Period	Source of Data
1. SEREXP (y)	India's Service Exports (US \$ bn)	1990-2015	WTO (1990-2013); Eco. Survey (2014, 2015)
2. WGDP (x ₁)	World GDP net of India (US \$ Tn)	1990-2015	World Bank-WDI
3. REER (x ₂)	Real Effective Exchange Rate of India	1990-2015	Eco. Survey 2012-13, Statistical Appendix, Page 68 for 1995-2014; RBI for 1993,1994, 2015, Extrapolation for 1990, 1991, 1992
4. OPIND (x ₃)	Openness Index of Indian Economy	1990-2015	Trade Data from WTO Database and Economic Survey (2014, 2015), India's GDP from WDI of World Bank.
5. FDI (x ₄)	Foreign Direct Investment in India	1990-2015	DIPP, Ministry of Commerce (GOI)
6. INTDEN (x ₅)	Internet Density (Per 100 Person) of India	1990-2015	World Bank WDI
7. ENGINTK (x ₆)	Intake of Engineering Student in Colleges	1990-2015	Benerjee & Muley (2007) For 1991-1998; AICTE : 2003-2014; Intrapolation : 1999-2002 Extrapolation : 1990, 2015

III. METHODOLOGY

All variables of this study consists time-series data. In econometrics it is widely believed that there exists a problem of autocorrelation or serial correction in time series data. To quote Dominick Salvatore (2011) "Autocorrecation is frequently found in time-series data (i.e. data where there is one observation on each variable for each time period)". As a remedy to autocorrelation further Dominick Salvatore suggests that "Sometimes re estimating the regression for **the change (i.e. using the first differences)** in the dependent and independent variables and **omitting the constant term** may overcome autocorrelation," Damodar N. Gujrati et al (2012) suggest the same method. To overcome the problem of autocorrelation in time series data of this study we have adopted **first difference method** while using ordinary least square method of multiple regression. Basic formula of the multiple regression and its transformation into first difference form are given here :

OLS Model :

$$y = b_0 + b_1x_1 + b_2 x_2 + b_3 x_3 \dots\dots\dots + u$$

Transformation to First difference form :

$$Y_t = b_0 + b_1 x_{1t} + b_2 x_{2t} + b_3 x_{3t} \dots\dots\dots + u_t \quad (1)$$

$$Y_{t-1} = b_0 + b_1 x_{1,t-1} + b_2 x_{2,t-1} + b_3 x_{3,t-1} \dots\dots\dots + u_{t-1} \quad (2)$$

Subtracting (1) from (2)

$$Y_t - Y_{t-1} = b_0 - b_0 + b_1 (x_{1t} - x_{1,t-1}) + b_2 (x_{2t} - x_{2,t-1}) + b_3 (x_{3t} - x_{3,t-1}) \dots\dots(u_t - u_{t-1})$$

$$y_t - y_{t-1} = 0 + b_1 x_{1,t-1} + b_2 x_{2,t-1} + b_3 x_{3,t-1} \dots\dots\dots + u_t - u_{t-1}$$

$$\text{OR } \Delta y_t = b_1 \Delta x_{1t} + b_2 \Delta x_{2t} + b_3 x_{3t} + \dots\dots\dots + V_t \dots (3)$$

(Where $V_t = U_t - U_{t-1}$)

Expected Signs of the coefficient of this model :

$$b_1, b_3, b_4, b_5, b_6 > 0 \text{ and } b_2 < 0$$

IV. RESULTS OF THE MODEL

Using OLS Method with first difference transformation and using Statistical Package for the Social Sciences (SPSS). The outcomes of the regression are given below :

Model Summary

R	R Square	Adj R Square	Std. Error	D-W
.969	.938	.919	2.988793	1.886

Coefficients

Variable	Coefficients	t- ratio	Significance (P)
1. WGDP (x ₁)	0.155	0.210	0.836
2. REER (x ₂)	-0.005	-0.029	0.977
3. OPIND (x ₃)	0.244	6.923	0.000
4. FDI (x ₄)	0.346	2.515	0.021
5. ENGINTK (x ₅)	0.045	4.021	0.001
6. INTDEN (x ₆)	0.935	1.486	0.154

Given the above outcomes of multiple OLS regression, India's long run service export demand function could be estimated as below:

SER exp =	0.155WGDP	- 0.005REER +	0.244OPIND+
t- statistics :	(0.210)	(- 0.029)	(6.923)
	0.346FDI +	0.045ENGINTK +	0.935INTDEN
	(4.021)	(2.515)	(1.486)

V. ANALYSIS OF THE RESULTS : DETERMINANTS OF INDIA'S SERVICE EXPORTS AND THEIR SIGNIFICANCE.

There are large number of studies on the determinants of India's merchandise exports but very few on the determinants of India's service exports. In view of this the results of this study with six independent variables could be useful for policy decisions. In the present study we have taken value of India's service exports (in US \$ bn) as dependent variable). The independent variables are world GDP net of India (US \$ Tn), India's openness Index (Proxy to trade Liberalisation), FDI Inflow, Intake of engineering students (Proxy to HRD) and Internet density (Proxy to Physical infrastructure). Outcomes of the study are discussed here:

1. World GDP net of India (WGDP) :

This study has considered world GDP, net of India as one of the determinants of India's service exports. Results of study as expected shows positive relationship between India's service exports and world GDP but statistically insignificant at the level of 1%, 5%, or 10%. It may be because of the facts that almost 90 percent of India's service exports are destined to European Union and USA only and not distributed homogeneously to the countries of the world in general. Empirical study of P Sahoo et. al. (2013) has shown positive and significant relationship between India's service exports and world demand for service Imports (Proxy to world GDP) for the period 1980-2011. However in that study the authors used world demand for services imports as a proxy to world GDP. Moreover, that study used different time period and methodology of regression (Dynamic Ordinary Least Square Method) than the present study. Similarly study of Mini Thomas P. (2015) also estimated positive and significant relationship between India's service exports and GDP of OECD countries for the period 1997-2012. Again this study used GDP of OECD countries (Mostly India's services importing countries) as a proxy to world GDP and used Dynamic OLS technique of regression.

As pointed out earlier, in this study the insignificant association between world GDP and India's service exports could be due to the fact that India's service exports are disproportionately destined to only two countries the USA and UK. To quote Eichangreen and Poonam Gupta (2012) "....services exports from India are disproportionately destined for the two largest English Speaking countries The United States and United Kingdom, which renders Indian exports vulnerable to demand conditions as well as trade policies in these countries. Indian exporters have not been able to penetrate the market in non-English speaking countries, further limiting market potential". Therefore the outcomes of this study establishes that the world GDP at large does not have any significant positive effect on India's service exports.

(2) Real Effective Exchange Rate (REER)

Theoretically as well as empirically there exists a negative link between the appreciation of the REER and export demand. The appreciation of the real effective exchange rate decreases the competitiveness of domestic exports in foreign markets, resulting in decreased demand for exports (Sahoo et al, 2013). Findings of this study confirms to the theoretical and empirical foundations that appreciated REER are negatively linked as the sign of the REER coefficient in this model is also negative but statistically insignificant. The study of Mini Thomas P (2015) gives similar results. According to Mini Thomas P (2015) – "Many studies in international trade have found statistically insignificant export-exchange rate elasticities, similar to the findings of our study. Rangrajan and Mishra (2013) examined this empirical result and found two factors contributing to this first, exports and exchange rates are highly endogeneous. Secondly, macro equations do not allow the export exchange rate elasticity to vary depending on the position of the aggregate supply curve".

In this study export-exchange rate elasticity is found to be – 0.005 which is negative but insignificant. The policy implication of this is that India's service exports are not significantly influenced by appreciation or depreciation of REER.

(3) Degree of Openness (OPIND)

Degree of openness is measured by dividing India's total trade (Goods and services; Imports and exports) by India's GDP for a particular year. India's openness, as calculated by this study, was 16.21% in the year 1990 which has increased to 27.26% in the year 2000 and 57.70% in the year 2012. It has declined to 41.86% in the year 2015. Degree of openness as measured above is used as a proxy to the openness of Indian Economy through trade, investment and exchange liberalisation post 1991. Taking degree of openness equal to 100 for the base year 1990 this study constructed India's openness Index. This openness Index is used as one of the variable affecting India's export of services during 1990-2015. As expected the results of regression coefficient of OPIND is found to be positive and significant at 1% level of significance. That means increase in

India's degree of openness positively and significantly affected India's service exports during 1990-2015. The OPIND coefficient is 0.244. That means increase in 1% degree of openness leads to 0.24% increase in India's services exports.

(4) Inflow of foreign direct investment (FDI):

As per department of industrial policy and promotion (DIPP), Ministry of Commerce and Industry (GOI) FDI inflow in India in the year 1990 was meagre \$ 0.237bn, which has increased to \$ 6.130 bn in the year 2001, \$ 46.556 bn in the year 2011 and \$ 55.457 bn in the year 2015. Inflow of FDI not only brings technology in the economy but also brings management skill in the economy. Foreign direct investment influences supply-side determinants of services exports, reflecting to some extent quality of physical capital as well as skills and market penetration potential (Sahoo et.al, 2013). Development economics has consistently recognised positive role of foreign investment in the development of recipient country. Outcome of this study supports the theoretical as well as empirical findings about the role of FDI. Regression Coefficient of FDI in this study is not only positive but also significant at 5% level of significance. FDI coefficient in this study is 0.346. That means one unit increase in FDI leads to 0.35 unit increase in India's service exports.

(5) Engineering intake (ENGINTK) : :

All recognised engineering Colleges in India are required to have an approved student intake capacity from All India Council of Technical Education (AICTE). This study has collected size of student intake in all engineering colleges for the period 1990-2015. In the year 1990 the intake capacity of all engineering colleges is estimated to 67350 students which increased to 3,59,721 students in the year 2003 and 18,07,863 students in the year 2015. This shows rapid growth of student intake post liberalisation.

Service sector inherently being knowledge based sector in which technically educated engineers & Managers play a crucial role. IT and ITeS & Other Business Services (OBS) sector are highly dependent on technically qualified men power. IT & ITeS is the single largest component of India's total service exports now. Increased number of engineering & management graduates have contributed to supply side of our service exports.

Results of this study supports the factor endowment theory of international trade as human resources are our abundant factor of production which is intensively used by our service-sector. This factor gives comparative advantage to India's service exports. In this study the regression coefficient of ENGINTK (0.045) is not only positive but also a significant at 1% level of significance. Outcome of this study mildly establishes that India enjoys comparative advantage in service sector for which qualified engineers are abundantly available and utilised.

(6) Internet Density (INTDEN):

Physical infrastructure, particularly the telecom infrastructure plays a crucial role in facilitating production, distribution and exports of services. Many services which were not transportable earlier are now transportable due to information technology. India's IT & ITeS production and exports are seriously dependent on telecom network. Internet is extension of telecom network. Internet has played crucial role in the production, distribution and exports of IT & ITeS in India. Upto the year 1994 India's internet density (number of person using internet per 100 persons) was almost zero which has increased to 26 in the year 2015 (WDI-World Bank Data: worldbank.org). In this study the regression coefficient of INTDEN is positive (0.935) but not significant at 5%, or 10% level of significance.

VI. CONCLUSIONS :

- (i) There has been a phenomenal growth of service sector exports during the study (1991-2015). India's share in the world service exports in the year 1990 was meagre 0.6 percent which has increased to 1.1 percent in the year 2000, 3.2 percent in the year 2014 and 3.4 percent in the year 2016. If we compare the performance of service sector with its counterpart merchandise sector, we will find that the share of India's merchandise export in the world export in the year 1991 was 0.5 percent, 0.7 percent in the year 2000 and 1.7 percent in the year 2014. This clearly establishes that in the growth of exports, the service sector has performed much better than the merchandise sector.
- (ii) From the multiple regression analysis as shown in the results of the model it can be concluded that variables such as opening up of the Indian Economy (Globalisation), after 1991, liberalisation of Foreign Direct investment (FDI) and enhanced intake of students in engineering institutions (Technically qualified man power) have positively and significantly contributed in the India's service exports during 1991-2015. Rapid growth of internet density has also played positive role in services exports though this is not statistically significant.

VII. POLICY IMPLICATION AND SUGGESTIONS :

- (i) Opening-up of the Indian Economy or Globalisation of Indian Economy has played positive and significant role in the promotion of India's trade in services during 1991-2015. Government should continue to pursue its policy of globalisation by way of reducing tariff and non-tariff barriers of foreign trade in services. Going back to the era of import-substitution is not a sustainable policy for India.
- (ii) Foreign Direct Investment (FDI) has played a positive and significant role in the promotion of India's service export during 1991-2015. Therefore the liberal policy of FDI should be pursued vigorously by the government. Biggest advantage of the FDI is that it does not cause any debt burden on the economy and people of India and such investment are to stay in the country for longer duration.
- (iii) Growth of Engineering intake in the Technical institution has positively and significantly contributed to the growth of India's service exports. Basically India's phenomenal growth of IT & ITeS can greatly be attributed to the technically qualified engineering graduates. Therefore, the policy of liberalisation of technical education in India should further be expanded and emphasis should be on quality of education as the field of IT & ITeS is getting very sophisticated now a days.
- (iv) Physical infrastructure, particularly the telecom infrastructure, plays crucial role in the facilitation of production, distribution and export of service-products. Many services of which cross-border trade was impossible in the earlier period, are now able to be traded cross border due to IT revolution. India's IT & ITeS production and exports are seriously dependent on telecom/internet network. In this study regression coefficient of Internet Density is positive, indicating the role of internet density in promotion of service sector exports.

REFERENCES :

- [1]. Barry Eichengreen and Poonam Gupta (2012) : "Export of Services : Indian Experience in perspective.", working paper No. 2012-102, New-Delhi : national Institute of Public Finance and Policy.
- [2]. H.A.C. Prasad & S.S. Singh (2016) : "India's Service Sector : Performance, some issues and suggestions", Department of Economic Affairs (Govt. of India).
- [3]. James Gordon & Poonam Gupta, (2004) : "Understanding India's Service Revolution", IMF Working Paper WP/04/17/, Aisa-Pacific Department.
- [4]. Mini Thomas P. (2015) : "Examination of the key Economic Determinants of Service Trade : Evidence from India" Working paper 348, Bangalore; The Institute for Social and Economic Change.
- [5]. P.K.M. Tharakan, Ilke Van Beveren and Tom Van Ourti (2004) : "Determinants of India's Software exports and Goods Exports." (<http://about.jstor.org/terms>).
- [6]. Pravarkar Sahoo, Ranjan Kumar Dass, Prabhu Prasad Mishra (2013) : "Determinants of India's Service Exports". EIG Working paper No. 333, New Delhi : Institute of Economic Growth.
- [7]. Rangan Banerjee and Vinayak P. Muley (2007); "Engineering Education in India", IIT-Mumbai. (also cited at : <https://www.researchgati.net/publication/266583669-Engineering-education-in-India>.)
- [8]. Trupti Goyal (2015), "Serve from India" (An article published in The Hindu Business Line, dated 2.10.15).

Trupti Goyal" Determinants of India's Export of Services post Liberalisation (1991-2015)" International Journal of Humanities and Social Science Invention (IJHSSI), vol. 08, no. 7, 2019, pp.11-16