Contribution of Telecom Sector to Growth of Indian Service Sector: An Empirical Study

Rekha Acharya^{1*} and Ranjana Patel²

¹School of Economics, DAVV, Indore – 452001, Madhya Pradesh, India; mailforekha@gmail.com ²Prestige Institute of Management and Research, Indore – 452010, Madhya Pradesh, India; replyranjana@gmail.com

Abstract

Service sector plays a vital role in boosting an economy thus it is important to understand the role and contribution of service sector to the growth of economy. For more than a decade the sector has been pulling up the growth of Indian economy with great stability. The share of services in India's GDP at factor cost (at current prices) increased from 33.3% (1950-1951) to 56.5% in 2012-13. The services performance of the top 15 countries for the 11 year period from 2001 to 2011 shows that the increase in share of services in GDP is the highest for India with 8.1 percentage points. Thus, the present paper is an attempt to examine the trend of growth of exports, imports of telecomm sector and its impact on the growth of telecom sector with the help of regression model.

Keywords: Exports and Imports, GDP, Service Sector, Telecom Equipments

1. Introduction

India's services sector has emerged as a prominent sector in terms of its contribution to national and state incomes, trade flows, FDI inflows and employment. Service sector plays a vital role in boosting an economy thus it is important to understand the role and contribution of service sector to the growth of economy.

For more than a decade the sector has been pulling up the growth of Indian economy with great stability. The share of services in India's GDP at factor cost (at current prices) increased from 33.3% (1950-1951) to 56.5% in 2012-13. The services performance of the top 15 countries for the 11 year period from 2001 to 2011 shows that the increase in share of services in GDP is the highest for India with 8.1 percentage points.

The relationship between exports, imports and economic growth has gained importance and attention among policy makers and researchers. Due to volatility experienced in the short-term capital flows, developing

and less developed countries shifted their focus from attracting short-term capital flows to FDI, due to its long-term effects. However, long-term economic growth of a developing country depends on the imports of capital goods and machinery that accelerates economic productivity. In order to maintain the trade surplus, total imports should be less then total exports.

Thus, the present paper is an attempt to examine the trend of growth of exports, imports of telecomm sector and its impact on the growth of telecom sector with the help of regression model. The study will help us to understand the factors that affect the growth of service sector and thus policy implications and suggestions can be drawn for the overall growth of service sector

2. Conceptual Framework and Review

There are variations in growth and performance of differ-

^{*}Author for correspondence

ent sub-sectors of services. Business services (including IT), communications and trade have grown faster than the overall services sector growth in India. Hansda³ and Joshi⁴ has pointed out that the rise in the export demand of IT has led to high services growth in India. After the economic reforms of the 1990s, the share of all the services subsectors in GDP has increased. Barry and Gupta^{1,2} opines the share of financing, trade and transport sectors in total services sector has increased while that of community, social and personal services has declined. Others such as real estate, legal services, transport, storage and personal administration and defence services have grown at the same rate as the overall services sector growth^{1,2}. Existing literature shows that services such as IT, telecommunications and financing services have contributed to the high growth of the services sector. India's share in world trade in services has increased from less than one percent to over 3% between 1980 and 2010, while it share in goods trade remained constant at one per cent during the same period. While the world's trade in services is still dominated by the developed countries, emerging economies, India is among the top ten exporters and importers of services among WTO member countries. In 2011, India was the eighth largest exporter and seventh largest importer of services. India needs foreign investment and best management practices in infrastructure services. The export and import trends of different sub-categories shows that during the period - 2000-2010, financial services grew at average annual growth rate of 34.6%, followed by computer and information services (22.6%) and insurance services (20.2%). Like other developing countries such as Brazil and China, India's exports of other business services have grown nearly four-fold in last decade. During the period from 1980 to 2010, the exports of business services grew at an average annual growth rate of 12.6% compared to 12% average growth rate in transport and 7.6% in travel services .26 in 2010, computer and information services contributed 48.5% in India's total services export, followed by other business services (23.4%), travel (11.4%), transportation (10.7%) and financial services (4.9%).

Of all the studies cited above still not much work has been done to understand the performance of exim of telecom sector thus this study is unique as it attempts to understand the contribution of exports and imports of telecom sector to the growth of service sector.

3. Objectives of the Study

- To study the trend of exports and imports in telecom sector during the period of 2000-2013.
- To study the impact of exports of telecom sector on the growth of the Indian services sector.
- To study the impact of imports of telecom sector on the growth of the Indian services sector.

4. Hypothesis

- H₀₁ There is no significant impact of exports of telecomm sector on the growth of the Indian service sector.
- H₀₂ There is no significant impact of imports of telecomm sector on the growth of the Indian service

5. Research Methodology

5.1 The Study

The study is empirical in nature. The study attempts to understand trends of exports and imports of telecom equipments. The paper also tries to study the impact of exports and imports of telecomm sector on the growth of service sector. The study is undertaken to understand the contribution of telecom sector towards the growth of Indian service sector.

5.2 The Data

The service sector is divided into two categories on the basis of the nature of services namely first is trade, hotels, transport and communication and the second is finance, business, insurance, real estate and business services. The GDP of service sector (trade, hotels, transport and communication) was taken as proxy for the growth of service sector.

Thus, the data pertaining to the GDP (at constant prices) for the growth of service sector was taken as dependent variable and the exports and imports of telecomm equipments were taken as independent variables. The exports and imports of telecom equipments were studied individually to measure the impact on the growth of service sector independently.

5.3 Period of Data

The exports and imports data of telecom equipment's was taken for the period 2004 to 2013. Further, the GDP of service sector data was also collected for the period of 2004-2013.

5.4 Tools for Data Collection

The secondary data for the present study was collected from various official sources and website like TRAI, World Bank, TEMCO etc.

5.5 Tools for Data Analysis

The cumulative average growth rate for the exports and imports was calculated after calculating beta with the help of regression. The collected data was further analyzed with the help of simple regression equation to study the impact of independent variables exports and imports of telecom equipments on the dependent variable that is the growth of service sector (GDP of Services) respectively.

6. Results and Discussions

TAs per the first objective the percentage annual Growth Rate (GR) was calculated for exports and imports of telecom equipments with the help of ordinary Least Squares Method through semi-log function.

$$Log Y_t = a_0 + a_1 T + \varepsilon_t \qquad -----(1)$$

Table 1. Exports of Indian Telecom Equipments (2004-2013)

1 1		
Year	Exports of Telecom Equipments	
2004-05	400	
2005-06	1500	
2006-07	1898	
2007-08	8131	
2008-09	11000	
2009-10	13500	
2010-11	15000	
2011-12	201989	
2012-13	109266	

Source: TEMCO Report 2013.

Where T = time period, and a's are regression coefficients. The trend growth rate is calculated from the estimate of al parameter. The per cent annual Growth Rate (GR) is obtained as:

G.R. =
$$[Antilog(a_1) - 1] \times 100$$
 ----(2)

The results reveals that exports of telecom equipments for the study period show as percentage growth of 100.67 percent which means that year on year to basis the exports of telecom equipments have shown tremendous increase. The exports of telecom was 400 crore in 2004-05 which reached 13500 crore in 2009-10 that was more than double and in the year 2012-13 it reached 109266 crore.

The results for imports of telecom equipments show that there is percentage growth of 15.44 percent which means that year on year to basis the imports of telecom equipments is increasing but at a slow rate. The imports of telecom was 14269 crore in 2004-05 which reached 67216 crore in 2009-10 whereas it reached 53971 crore in the year 2012-13

Source: TEMCO Report 2013.

The second and third objective was to find the impact of exports and imports of telecomm equipments on the

Table 2. Imports of Indian Telecom Equipments (2004-2013)

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Year	Exports of Telecom Equipments			
2004-05	14269			
2005-06	27010			
2006-07	34042			
2007-08	41600			
2008-09	44800			
2009-10	67216			
2010-11	51460.61			
2011-12	52441.23			
2012-13	53971.01			

growth of Indian service sector. The regression model was applied to estimate the relationship between growth of service sector and exports and imports. The GDP (At constant Prices) of service sector was taken as proxy for the growth of service sector. Following equations were formulated to test the relationship:

$$Y_t = a_1 + a_2 X_1 + e$$
 ----- (3) Where

Y₁ = GDP of Service Sector (Dependent)

X₁ = Exports of Telecommunication Sector (Independent Variable)

Further, for analyzing the impact of imports of telecom equipments on the growth of service sector.

$$Y_t = a_1 + a_2 X_1 + e$$
 -----(4)

Where,

Y_t = GDP of Service Sector (Dependent)

X₁ = Imports of Telecommunication Sector (Independent Variable)

The results of the regression model depicts that the estimated coefficients of exports and imports (F = 74.288and 20.71, p < 0.05) respectively shows a positive impact on growth of service sector. It means that exports and imports of telecom equipments have contributed positively which has resulted in the growth of service sector.

Further, if we analyze the results in detail then the significance value was found to be 0.0000056 for exports and 0.002 for imports which is lower than 0.05 which means that the independent variable exports and imports explains with confidence 95 percent of the model to predict the dependent variable i.e. Growth of service sector, thus we accept the both the model.

If we discuss the Model Summary in Table 3 and 4 then the following results can be interpreted in detail as follows:

and 0.864 which indicate a good level of prediction for both equations.

R-Square measures the proportion of the variation in the dependent variable that was explained by variations in the independent variables. The value of R Square was found to be 0.911 for exports and 0.74 for imports. Thus, 91 percent of the variation (and not the variance) was explained by exports and 74 percent variance in the dependent variable (GDP of service sector) was explained by imports. The value of R-Square should lie between 0-1 and a higher value is better thus the R-Square value in both equations was found to be fairly good.

The Adjusted R-Square measures the proportion of the variance in the dependent variable that was explained by variations in the independent variables. In the present study the value was 0.90 which shows that 90 per cent of the variance was explained by exports. For imports the value was found to be 0.711 which means imports explain 71 percent variation. The standard value should be below 1 and a higher value is better. Thus, adjusted R-Square explains the measure of goodness of fit in a better way as it is sensitive to addition of irrelevant variable.

Further, the Standard Error of the estimated value is considered and this value should be smaller compared to the mean of the predicted dependent variable. The value of standard error was found to be 0.035 for exports and

Table 3. Model summary for exports of telecom equipments

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.955974	0.913887	0.901585	0.035156

Dependent: GDP of Service Sector

Table 4. Model summary for imports of telecom equipments

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.86454	0.74743	0.711348	0.060208

Dependent: GDP of Service Sector

R represents the multiple correlation coefficients which is a measure of the quality of the prediction of the dependent variable. The value of R was found to be 0.95 0.0602 for imports which is small as compared to the mean of the predicted dependent variable.

Therefore, from the above results it can be interpreted that in case of Indian service sector the growth is positively affected by increase in exports and imports of telecomm sector. The null hypothesis that there is no significant impact of exports and imports of telecom sector on the growth of service sector cannot be accepted.

7. Conclusion and Suggestions

Services sector is the fastest growing sector in India, contributing significantly to GDP, growth, trade and FDI inflows. The sector is projected to be on a high growth in the next decade as the total share of this sector to India's GDP is around 65 percent. The share of services sector in India's total trade is higher than the global average and India is among the top 10 WTO member countries in services exports and imports.

India's export competitiveness is in a few services sector and there are wide variations in growth across different sub-sectors of services. The paper found that the growth of services sector is significantly affected by the exports and imports of the telecom sector.

It is important for a developing country like India to attract voluminous private investments in key infrastructure services such as transport, energy and telecommunications. It can only attract FDI and private investment with a stable, transparent, non-discriminatory and competitive policy environment that will further enhance India's global competitiveness and trade in services. The paper concludes that the exports of telecom equipments can boost the growth of not only the telecom

sector but can also contribute to the growth of service sector as well.

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