FDI in the Service Sector – Propagator of Growth for India?

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18 April 2011

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Abstract

The last two decades have witnessed an unprecedented growth of the Indian service sector. This paper aims to analyze the growth dynamics. This study intends to see whether the growth in FDI has any significant impact on the service sector growth and also investigates whether a growth in this sector causes the GDP to grow. The results suggest that there has been a significant positive impact of the FDI on services sector and this service sector growth has in turn a significant effect on the GDP. The study also looks into the sub-sectoral dynamics and indicates towards the fact that the trade, hotels and restaurants, transport, storage and communications sub-sector contributes the most in the growth of Indian service sector. Therefore FDI can be truly be used as a propagator of economic growth, via its favourable effect on the growth in the services sector. Finally, the study addresses the long running sustainability debate regarding the Indian service sector.

Key words: Service sector, FDI, Economic growth

I. Introduction:

Since 1991, after the liberalization and economic reform, India's growth rate has been particularly impressive. With the liberalization in 1991, India bid goodbye to the slow, cautious and conservative so-called "Hindu rate of growth" and started growing at a much faster rate. According to Tarun Das (ex chief mentor, Confederation of Indian Industry), "Our Berlin Wall fell….and it was unleashing a caged tiger". Since then the growth rate has hovered around the 6% mark and in recent years it reached as high as 9.7%[†]. The services sector in India assumes a central role in this growth story. Indian services sector has experienced unprecedented growth

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2. The author appreciates valuable discussions with Dr. Gagari Chakrabarti, Mr. Bibek Sen and Dr. Umashankar Venkatesh. The remaining errors are the author's only.

[†] All data used in this study has been collected from the website of Reserve bank of India, UNCTAD and Business Beacon database.

during the last two decades. Although it is natural that when a country becomes more developed, its GDP share in agriculture eventually decreases, but Indian services sector's growth has particularly been astounding. Service-led growth is a common phenomenon in the theory of economic growth (Clark, 1940; Kuznets, 1957; Chenery, 1960). But traditionally, the service-led growth has been associated with the tertiary phase of growth, where a major part of the demand for service comes from the developed manufacturing sector (the secondary sector). But Indian growth has been an altogether different story. The growth of Indian service sector is largely independent of the manufacturing sector. India, in its process of growth has been able to bypass the stage of manufacturing-sector led growth and reached straight into the third stage – service-led growth. This pattern of Indian growth is distinctly dissimilar from the growth pattern of its Asian peers namely Vietnam, Indonesia, China, Thailand, Malaysia and Korea. While for these Asian countries, export-oriented manufacturing sector has been instrumental in the growth, in India, the dominant services sector, led by information technologies and information technology enabled services has grown faster than all other countries in the last three decades (Walters, Stapleton and Andrews, 2007). This fast-growing sector has always been crucial in Indian economic growth.

Foreign direct investment (FDI) has been instrumental behind the growth of services sector in India. Since the opening up of the economy in 1991, FDI in India has grown in leaps and bound. From a mere 45.46 million dollars in 1970, FDI has grown into a mammoth 40418.39 million dollars in 2008. Just between 1991 and 2008, the FDI inflow has increased by a staggering 53791.2% (Fig. 1).

Figure 1. Foreign Direct Investment in India
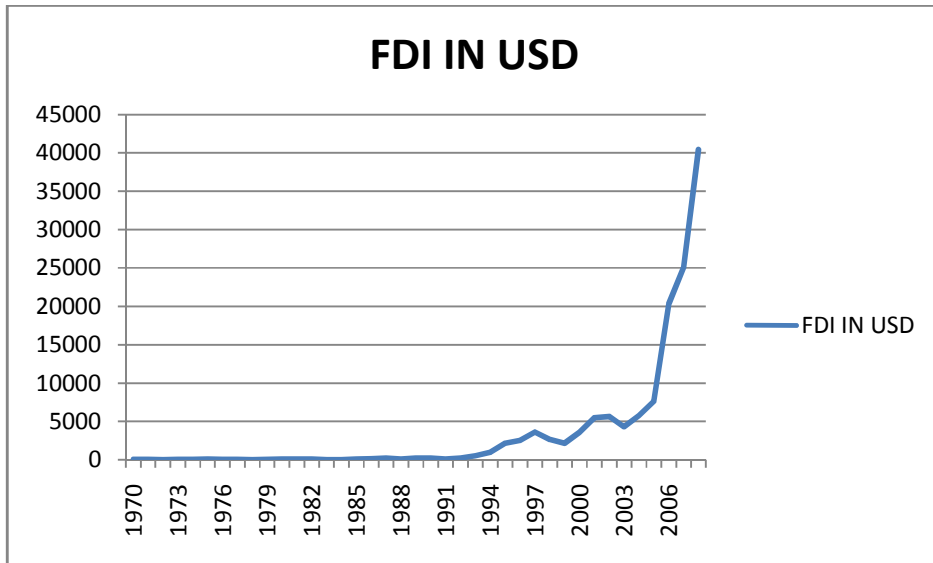
A substantial part of the FDI has gone into the services sector. And FDI's contribution to this sector has only grown overtime. Fig.2 shows the share of FDI that has gone into each sector of the economy for the period 1990-1999 and Fig.3 shows the sector-wise FDI for 2000 – 2009. During the later phase, FDI in services sector has grown to 21%, in comparison to the 7% in the earlier phase.

Figure 2. Sector-wise FDI in India: 1991-1999 (Source: Sirari and Bohra, 2011; RBI Bulletin 2010)
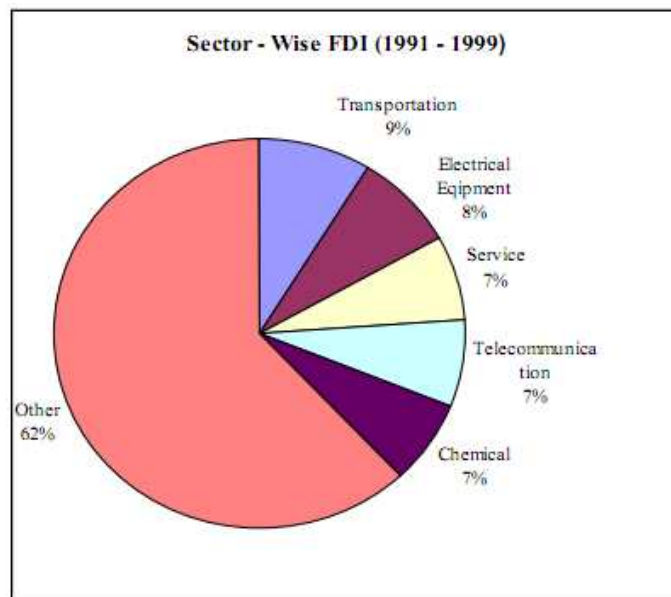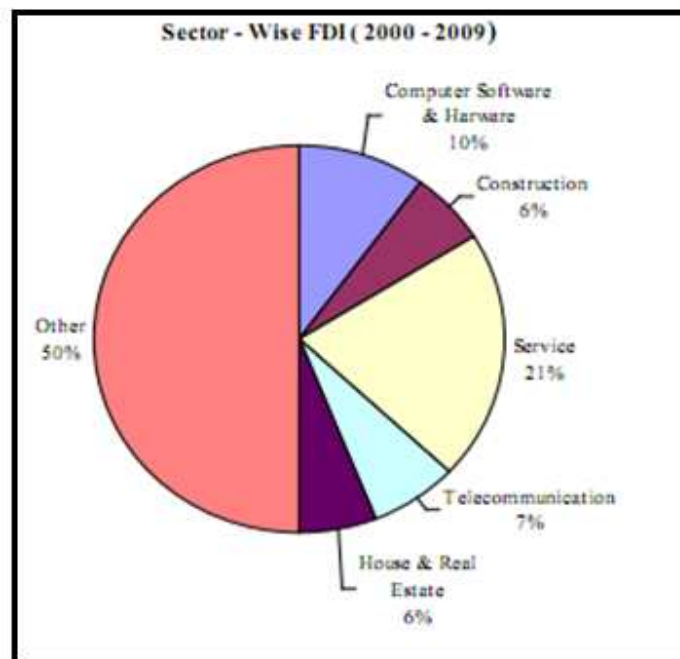
Figure 3. Sector-wise FDI in India: 2000-2009 (Source: Sirari and Bohra, 2011; RBI Bulletin 2010)

There has been a few studies in Indian context that examined the service led growth of India. Eichengreen and Gupta (2009), Eichengreen and Gupta (2010) and Bosworth et al (2006) have all shown that Indian growth has been largely influenced by the services sector performance. The objective of this study is to understand the growth propagation from FDI to GDP via the services sector. The paper goes farther to investigate the service sub-sectors' performance in the process.

The services sector has been the best performing among the three major sectors in Indian economy (service, agriculture and industry). After 1980, the growth in services sector has always been much higher than the growth rate of the agricultural sector and even the industrial sector. Figure 4 plots the growth curve for all three sectors. The growth curve for services sector clearly leads the race with an exponential growth.

Figure 4. Comparison of Growths of Services, Agricultural and Industry
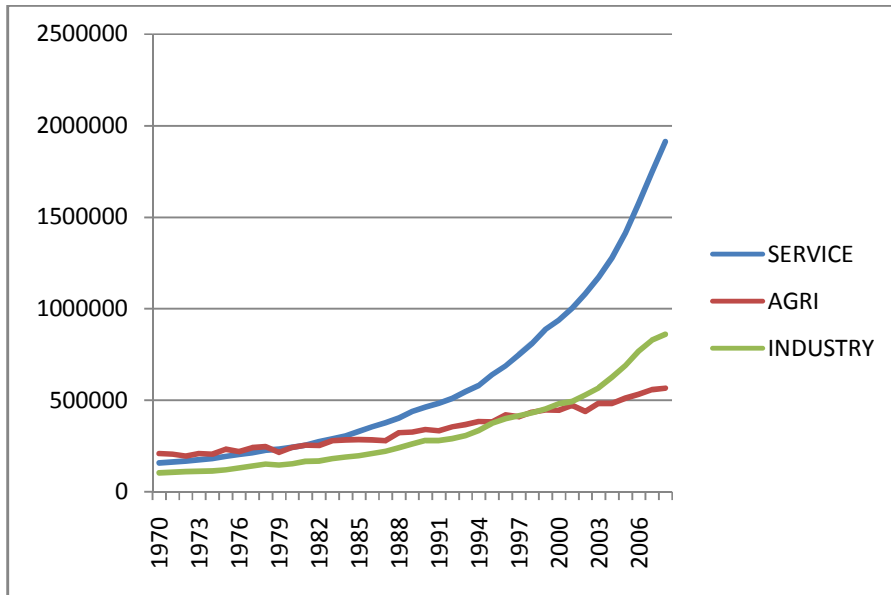
Not only services sector grew at a superfast rate, it is the only sector which in the last four decades has never experienced a negative growth rate. Figure 5 shows the growth rates of the three sectors of the economy. As the figure suggests, while agriculture and industry experience negative growth rates at regular intervals, during this period services sector does not have a single year with negative growth rate.

Figure 5. Growth Rates of Services, Agriculture and Industry
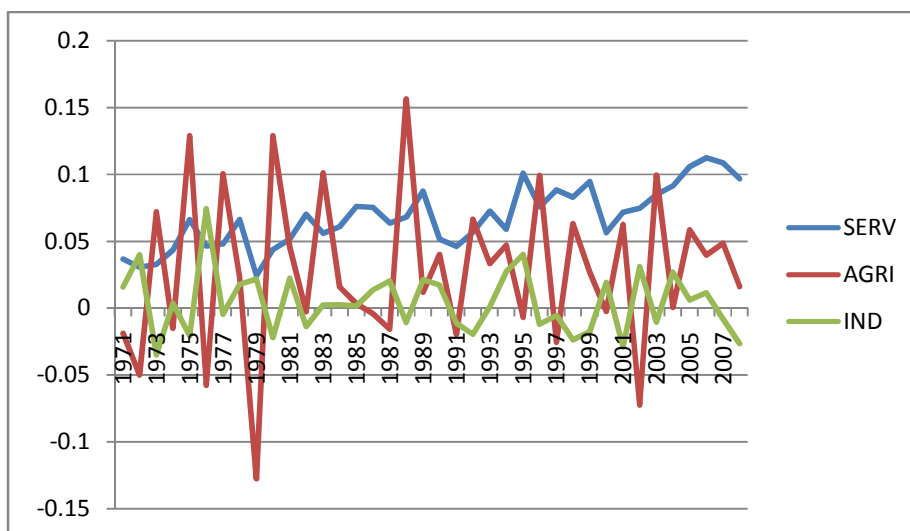
The strong performance of the services sector is reflected by its share in GDP. Figure 6 shows the GDP share of the three sectors. From 1970s, the services sector has experienced a consistent growth in its share in GDP. From 33.28% in 1970, the services sector has increased to a 57.28% of the total Indian GDP in 2009. Agriculture's share in GDP has decreased consistently, while industry's share increased at a very slow rate. Whatever the agricultural sector lost, was gained by the services sector.

Figure 6. GDP Share of Services, Agriculture and Industry
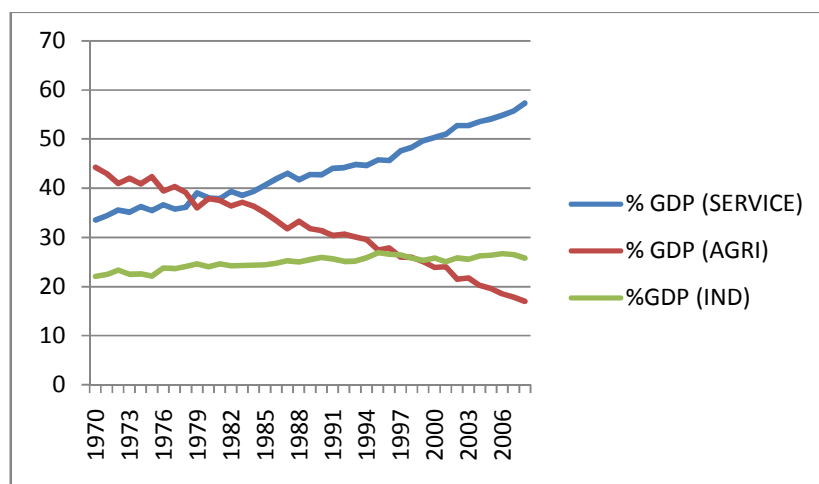
However, the contributions of services sub-sectors have not been evenly distributed. The three major sub-sectors in services are –

1.   Trade, hotels and restaurants, transport, storage and communications (this study will refer to this section as "Trade" now on)

2.   Community, social and personal services (public administration, defence and others) ("Community" now on)

2.   Financing, insurances, real estate and business services ("Finance" now on)

Figure 7 demonstrates the growth of the three service sub-sectors. The trade and transportation sector grows fastest. While community services and financial services sectors grow more or less in a similar fashion, they both lag behind the trade sector in terms of growth. This is one

interesting characteristic of the Indian services sector. As the country develops, one can expect the financial services sector to become predominant but this is not the case with India.

Figure 7. Growth of Service Sub-sectors
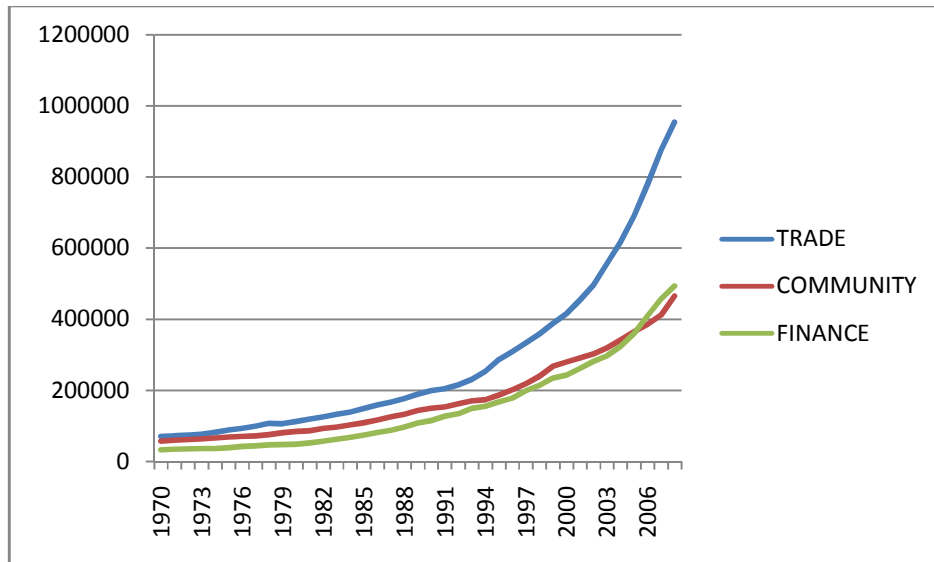
The dominant position of the trade sector is reflected through its growth rate in Figure 8. For the period 1970-2009, this sector experiences only a single year of negative growth, in 1979. In comparison, the community services sector has predominantly negative growth rate for most of the years (25 out of 39). The financial services sector is also characterized by several years of negative growth rate (14 out of 39).

Figure 8. Growth Rate of Service Sub-sectors
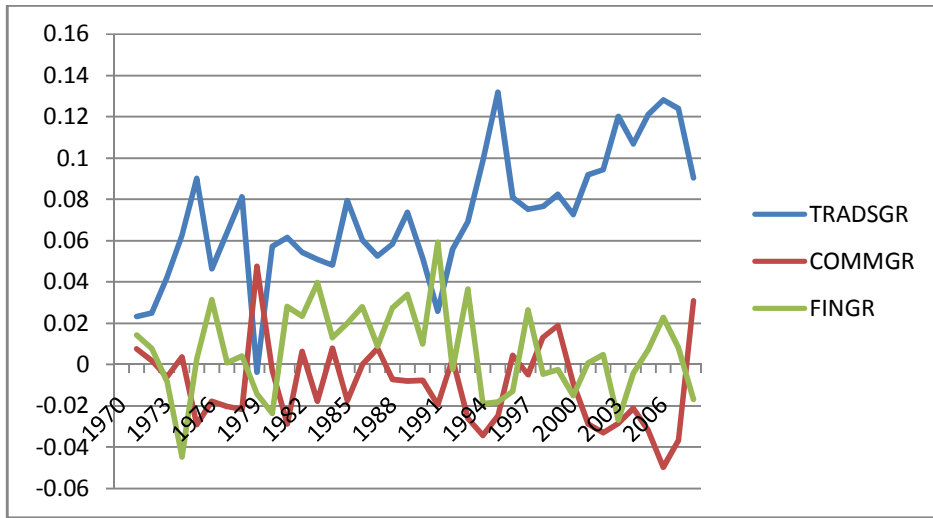
As expected, trade has the lion's share in the services sector. This sub-sector has consistently contributed for more than 40% in the services sector output. Lately, its contribution is touching 50%. The other two sub-sectors are clearly lagging behind this sub-sector. The community services sector experiences a steady decline in its share in services sector output (from 35.79% to 24.20%) and the financial services sub-sector, although characterized by a steady growth over the years (from 20.31% to 25.79%) is yet to catch up with the trade sub-sector.

Figure 9. Subsectors' Share in Services
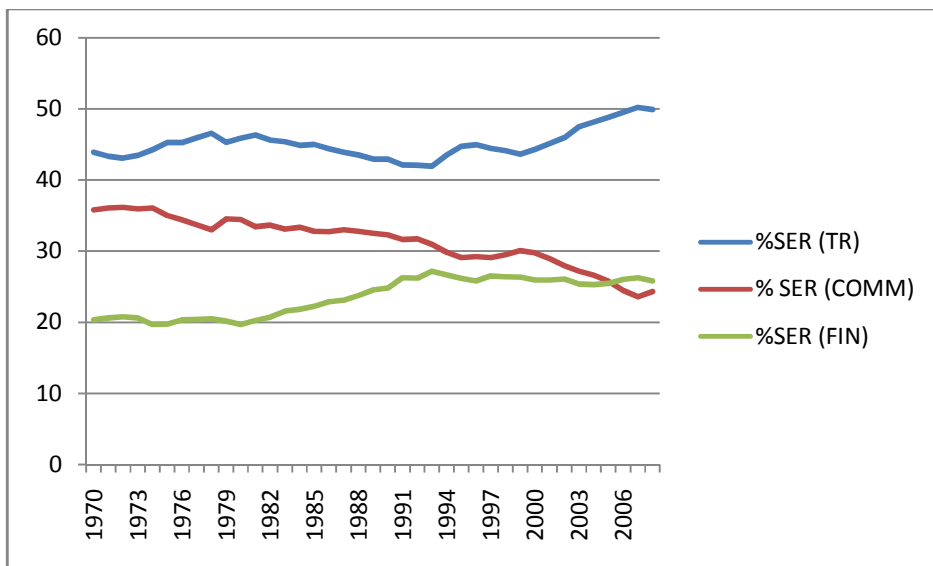
II. Database and Methodology:

This study uses annual data from 1970 to 2008 on the relevant macroeconomic variables. All data are collected from the website of RBI, UNCTAD and Business Beacon database. The study now examines whether FDI can be used as a propagator of growth for the Indian economy via its contribution to the services sector. For that, seven relationships are tested using regression models. The variables considered for the regression are natural logarithmic transformations of the raw data. Log transformations are very useful in handling exponential growths and stabilizing the variability in the data. Not only that, the slope coefficients of the regression equation will represent elasticities if log transformation is taken. It would be easier that way to gauge the impact of the regressors.

1.   The impact of FDI inflow on GDP: If FDI inflow has significant impact on GDP, then it can be said that FDI, if channeled properly, can be used as an engine of growth. To find out the impact of FDI on GDP, the following regression equation is estimated -

$GDP_i = \alpha_1 + \beta_1 FDI_i + u_{1i}$ Where GDP_i and FDI_i are the simple logarithmic transformation of the GDP output and FDI inflow data.

And a set of hypothesis is tested:

$H_0: \beta_1 = 0$ i.e. FDI has no influence on GDP

$H_{1 :} \beta_1 \neq 0$ i.e. FDI has a significant impact on GDP

2.   The impact of services sector, agricultural sector and industrial sector on the GDP:

Next, the study aims to investigate the comparative impacts of the three major sectors in Indian economy on the country's GDP. The three sectors are services sector, agricultural sector and industrial sector. The result will give a clear picture of the relative importance of the three sectors in GDP.

The regression equation is –

$GDP_i = \alpha_2 + \beta_2 SER_i + \beta_3 AGRI_i + \beta_4 IND_i + u_{2i}$ Where SER is the simple logarithmic transformation of the services sector output AGRI is the simple logarithmic transformation of the agricultural sector output and IND is the simple logarithmic transformation of the industrial sector output.

For this equation, three sets of hypotheses are tested. The hypotheses are:

Hypothesis I:

$H_0: \beta_2 = 0$ i.e. SER has no influence on GDP

$H_{1:} \beta_2 \neq 0$ i.e. SER has a significant impact on GDP

Hypothesis II:

$H_0: \beta_3 = 0$ i.e. AGRI has no influence on GDP

$H_{1:} \beta_3 \neq 0$ i.e. AGRI has a significant impact on GDP

Hypothesis III:

$H_0: \beta_4 = 0$ i.e. FDI has no influence on SER

$H_{1:} \beta_4 \neq 0$ i.e. FDI has a significant impact on SER

3.   The impact of FDI on the services sector as a whole: Thirdly, the study examines if the FDI inflow has any significant influence on the services sector output. If any discernible impact is noticed, it can be concluded that the growth in services sector is to some extent propagated by FDI.

The regression equation for this relationship is –

$SER_i = \alpha_3 + \beta_5 FDI_i + u_{3i}$

The hypotheses are:

$H_0: \beta_3 = 0$ i.e. FDI has no influence on SER

$H_{1:} \beta_3 \neq 0$ i.e. FDI has a significant impact on SER

4.   Impact of the services sector on FDI: Earlier, the study tested if FDI has any significant impact on the services sector output. In a macroeconomic perspective, a growing services sector would in turn attract FDI in the economy. The study goes on farther to test whether services sector output has any discernible impact on the FDI inflow.

The following regression equation is estimated-

$FDI_i = \alpha_5 + \beta_7 SER_i + u_{5i}$

The hypotheses are –

$H_0: \beta_7 = 0$ i.e. services sector output significantly influences the FDI
$H_1: \beta_7 \neq 0$ i.e. services sector output does not have any significant impact on FDI

5.   Impact of GDP on FDI: The study has already considered the impact of FDI on GDP. Now, the study tests any possible impact of GDP on FDI. Growing GDP symbolizes a country's positive growth. And a country that grows in a healthy rate also attracts FDI. Therefore, a positive directional relationship from GDP to FDI is expected. To test this, the following regression equation is estimated-

$FDI_i = \alpha_6 + \beta_8 GDP_i + u_{6i}$

The hypotheses are –

$H_0: \beta_8 = 0$ i.e. GDP significantly influences the FDI
$H_1: \beta_8 \neq 0$ i.e. GDP does not influence the FDI significantly

6.   Impact of the three sub-sectors on the services sector: Next, the study delves deeper and try to gauge the sub-sectoral performances of the services sector. A regression is run to examine the relative importance of the three major sub-sectors in the services sector output.

$SER_i = \alpha_7 + \beta_9 TRADE_i + \beta_{10} COMM_i + \beta_{11} FIN_i + u_{7i}$

Where TRADE is the simple logarithmic transformation of output from trade, hotels and restaurants, transport, storage and communications; COMM is the simple logarithmic transformation of output from community, social and personal services and FIN is the simple logarithmic transformation of output from the financial services.

Three sets of hypotheses are being tested –

Hypothesis I:

H_0: $\beta_9 = 0$ i.e. TRAN significantly influences the SER
H_1: $\beta_9 \neq 0$ i.e. TRAN does not influence the SER significantly

Hypothesis II:

H_0: $\beta_{10} = 0$ i.e. COMM significantly influences the SER
H_1: $\beta_{10} \neq 0$ i.e. COMM does not influence the SER significantly

Hypothesis III:

H_0: $\beta_{11} = 0$ i.e. FIN significantly influences the SER
H_1: $\beta_{11} \neq 0$ i.e. FIN does not influence the SER significantly

7.   **Impact of the three sub-sectors on GDP:** And finally, the impact of the three sub-sectors on the GDP is examined.

The regression equation is -

$$GDP_i = \alpha_9 + \beta_{12} TRAN_i + \beta_{13} COMM_i + \beta_{14} FIN_i + u_{9i}$$

And three sets of hypotheses are tested:

Hypothesis I:

H_0: $\beta_{12} = 0$ i.e. TRAN significantly influences the GDP
H_1: $\beta_{12} \neq 0$ i.e. TRAN does not influence the GDP significantly

Hypothesis II:

H$_0$: $\beta_{13} = 0$ i.e. COMM significantly influences the GDP

H$_1$: $\beta_{13} \neq 0$ i.e. COMM does not influence the GDPsignificantly

Hypothesis III:

H$_0$: $\beta_{14} = 0$ i.e. FIN significantly influences the GDP

H$_1$: $\beta_{14} \neq 0$ i.e. FIN does not influence the GDP significantly

III.   Result:

The results from the seven regressions are summarized below.

TABLE 1.   IMPACT OF FDI ON GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	0.236335	0.014119	16.73846	0
R-squared	0.883346	Mean dependent var		6.029534

TABLE 2.   IMPACT OF FDI ON SERVICES SECTOR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	0.297801	0.017809	16.72231	0
R-squared	0.883146	Mean dependent var		5.66404

TABLE 3.   IMPACT OF SERVICES SECTOR, AGRICULTURAL SECTOR AND INDUSTRIAL SECTOR ON GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SER	0.634274	0.063329	10.01555	0
AGRI	0.201658	0.056943	3.541385	0.0011
IND	0.084058	0.084038	1.000232	0.3241
R-squared	0.999493	Mean dependent var		6.029534

TABLE 4.   IMPACT OF THE SERVICES SECTOR ON FDI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SERV	2.965563	0.145036	20.44702	0
R-squared	0.883146	Mean dependent var		2.55516

TABLE 5.   IMPACT OF GDP ON FDI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	3.737692	0.176227	21.2095	0
R-squared	0.883346	Mean dependent var		2.55516

TABLE 6.   IMPACT OF THE THREE SUB-SECTORS ON SERVICES SECTOR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TRADE	0.484068	0.005243	92.32082	0
COMM	0.272282	0.012486	21.80618	0
FIN	0.237714	0.007516	31.62839	0
R-squared	0.999991	Mean dependent var		5.66404

TABLE 7.   IMPACT OF THE THREE SUB-SECTORS ON GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TRADE	0.488688	0.027731	17.62229	0
COMM	-0.10651	0.081763	-1.30268	0.2012
FIN	0.335156	0.041644	8.048224	0
R-squared	0.999438	Mean dependent var		6.029534

The results furnished in Table 1 - 7 help determine the directional nature of interdependence among the variables.

- FDI has a significant positive impact on GDP as well as the services sector. For every unit increase in FDI, the GDP increases by 0.236 and the services sector output increases by 0.298 units (Table 1 and 2)

- Services sector has a positive impact on GDP, as reflected by its highly significant positive coefficient in Table 3. Not only that, among the three sectors, the coefficient for the services sector is highest (0.634), indicating that services sector has the strongest influence on GDP, one

unit increase in the services sector increases the GDP by 0.634 units. Interestingly enough, the industrial sector's performance has no significant impact on GDP.

- The services sector has a very strong positive and statistically significant impact on FDI (Table 4). FDI nearly trebles with a unit increase in the services sector output. The second regression showed that if FDI increases, services sector output also increases. The fourth regression shows that there is a feedback effect from the services sector to FDI. The growth in services sector actually helps FDI inflow to increase. This indicates towards a two way relationship between FDI and service sector output. The reason behind it is as services sector grows, especially in India where the services sector growth has mainly generated by hi-tech services and outsourcing to foreign countries, a well-performing services sector will encourage more FDI.

- Table 5 shows that GDP has a strong and statistically significant positive impact on FDI. For each unit increase in GDP, the FDI increases by 3.738 units. This indicates that whenever the economy is performing well, FDI increases in a multiplicative fashion. From the result of the first regression, FDI was found to have a significant influence on GDP. These two results together show that there is a two-way relationship between GDP and FDI; they influence each other.

- Table 6 and 7 takes the study to sub-sectoral level. Table 6 shows that of the three services sub-sectors, the trade-hospitality-transport sector has the strongest impact on the GDP. Financial services, although has a significant positive impact on the total services sector output, is the weakest of the three. Finally, Table 7 tries to measure the impact of the three services sub-sector on the GDP. Trade-transport-hospitality sector turns out to be the strongest while the community services sector has no discernible impact on the GDP.

The relationships 1 – 3 help identify the growth propagation from FDI inflow to GDP via services sector. Relationships 4 and 5 examines the FDI growth, resulting from the growth caused by it in the services sector output and GDP. 1 – 5 together explains the circular interaction channel among the FDI inflow, GDP and services sector output where each causes the other to grow and as a result grows itself. Table 7 -8 show the sub-sectoral contribution both to the total service sector output and GDP.

IV. Conclusion:

Based on these results, it can be inferred that the services sector in India, propelled by inflows of FDI help the economy grow. Not only that, the trade, hotels and restaurants, transport, storage and communications sector is most instrumental behind the phenomenal growth of the services sector. There is no doubt about the performance of Indian services sector and its role in the country's economic growth. But this brings us to the big question. Is this service-led growth sustainable?

A danger in the service-led growth lies in the over dependence on FDI. The service sector growth in India is largely led by hi-tech labour and outsourcing, with the main demand coming from abroad. This makes the sector somewhat vulnerable to external shocks. As the service sector has a multiplier effect on the economy, a negative shock in this sector will be reverberated throughout the whole economy and will spread into other sectors as well, thanks to inter-sectoral linkages of service sector. This also runs a risk of facing unfavourable terms of trade.

The major criticism of the service-led growth came from the fact that the service sector growth has largely been jobless (Gordon and Gupta, 2003). "While output generation has shifted to services, employment generation in services has lagged behind" (Banga,2005).Since independence, agriculture's share in GDP has gone down and services sector's share has gone up. But the services sector has not been able to make up for increasing unemployment. Moreover, the growth within the services sector has been lopsided. While some services grew at a fast rate, some other services experience a negative growth rate. A reason behind this lopsided growth has been the absence of a uniform service policy in India (Banga, 2004). Therefore, impact of the economic reforms could not spread evenly across different services.

Another criticism of service-led growth is that due to a comparatively static industrial sector and a declining agricultural sector, the service sector would not be able to generate its own demand and sustain its growth in the long run. However, Hansda (2002b) and Banga and Goldar (2004) showed evidence that there has been a significant impact of the services sector on the industrial sector output. Their study showed that the demand for services is rapidly increasing in the industrial sector and in turn, the services sector is actually contributing to the growth and output of industries. There are forward and backward linkages between services sector and other sectors

– services sector is actually growth inductive. Not only that, the services sector has the largest multiplier effect on the economy. According to Banga and Goldar, "This points to the possibility that the Indian services sector might not only succeed in sustaining its own growth but might also help in improving the growth rate of industrial sector in the near future".

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