Determinants of Foreign Direct Investment in India’s Service Sector
Niti Bhasin

Abstract

With the ever-growing importance of services sector in India’s economy, this paper seeks to identify the determinants of FDI in the services sector. The study uses ordinary least squares regression analysis and examines the impact of GDP, GDP per capita, trade openness, FDI openness, and labour cost on FDI inflows. We also use another specification to include the lagged dependent variable as an explanatory variable. Using annual data for the period 1991 to 2010, we find that FDI inflows in the services sector in India are significantly determined by national income, GDP per capita, trade openness, FDI openness and skilled labour availability. This confirms the view that FDI in the services sector is efficiency-seeking and greater availability of skilled labour in India leads to greater inflows of FDI in services sector.

Keywords: FDI, Services sector, GDP, Skilled labour

1.0 Introduction

The beginning of the 21st century has marked a tremendous growth of international investments, trade and financial transactions along with the integration and openness of international markets. According to the International Monetary Fund (1977), FDI is defined as “investment that is made to acquire a lasting interest in an enterprise operating in an economy other than that of the investor; the investor’s purpose being to have an effective voice in the management of the enterprise.” The essence of FDI is the transmission to the host country of a package of capital, managerial, skill and technical knowledge. FDI is generally a form of long-term international capital movement, made for the purpose of productive activity and accompanied by the intention of managerial control or participation in the management of a foreign firm.

Dr. Niti Bhasin, Assistant Professor, Department of Commerce, Delhi School of Economics, University of Delhi.
Developing countries of the world have seen an unprecedented growth in FDI over the last decade or so. According to UNCTAD World Investment Report 2011, in 2010, for the first time, developing economies absorbed close to half of global FDI inflows. They also generated record levels of FDI outflows, much of it directed to other countries in the South. This further demonstrates the growing importance of developing economies to the world economy, and of South-South cooperation and investment for sustainable development. FDI inflows to East Asia, South-East Asia and South Asia as a whole rose by 24 per cent in 2010, reaching $300 billion.

1.1 Rationale of the study

India's foreign direct investment (FDI) inflows into the services sector went up by 55 per cent to USD 910 million (Rs 4,053 crore) during April-May in 2010-11, according to the industry ministry's latest data. India with a services sector share of 52 per cent in national GDP in 2009 and 55.2 per cent in 2009-10 compares well even with the developed countries in the top 12 countries with the highest overall GDP. With the ever-growing importance of services sector in India’s economy, it becomes important to formulate policies that create a conducive environment for FDI in services sector.

A study of trends and determinants enables policymakers to understand the scale and direction of FDI flows. It enables them to focus on those areas or factors to which FDI is most sensitive. Policymakers have to be aware that various measures intended to induce FDI are necessary and would lead to incremental investment, i.e., investment which will occur only if these measures are taken. In this respect, it becomes imperative to study the determinants of FDI in the sector. Identification of the important determinants will enable policymakers to concentrate on those factors or areas to which FDI in the services sector is most sensitive. Another reason to constantly study and review FDI determinants is that those determinants which were sufficient in the past, may prove to be less relevant in the future. Hence, the importance of determinants keeps changing over time.

Through this paper, we would also like to examine if FDI in services in India is largely efficiency-seeking owing to a large pool of relatively inexpensive skilled labour.
2.0 FDI in services: Global trends

The global economic and financial crisis had a dampening effect on cross-border FDI flows. Though the crisis took a heavy toll on flows to manufacturing activities, the services sector was also affected. As per the United Nations Conference on Trade and Development (UNCTAD), the impact of the crisis across sectors has resulted in a shift in their relative weights in FDI flows—it has fallen in manufacturing, relative to the primary and services sectors. The share of manufacturing in total cross-border mergers and acquisitions (M&As) was lower in developed countries—where it stood at 30 per cent of their value in 2009—than in developing and transition economies, where it accounted for 32 per cent of the transaction value. The shares of the primary sector and services in total cross-border M&As by value, on the other hand, were higher in developed countries than in developing and transition economies. Business services were among the sectors where investment expenditures were hard hit by the crisis, registering a reduction of greenfield investment projects in the world by 20 per cent in 2009 compared to the previous year. Greenfield investments in financial services also declined from 1616 in 2008 to 1267 in 2009. On the positive side, at global level, medium term prospects for services are generally better than those for the manufacturing sector with international investment in the services sector expected to grow relatively faster. In addition, many services transnational companies, which some years ago were mainly focused on their home markets, are now pursuing internationalization strategies involving ambitious investments abroad. Developing and transition economies, particularly in Asia, are considered as most attractive destinations.

2.1 FDI in services: India

The past decade has seen a tremendous growth in FDI inflows into the services sector. The sectors attracting the highest FDI inflows in the services sector include financial and nonfinancial services; computer hardware and software; telecommunications; and housing and real estate. Together, their share in FDI equity inflows in April 2000–December 2010 is around 44 per cent. The financial and non-financial services sector which falls purely in the services category is the largest recipient of FDI equity inflows with a 21 per cent share.
This is followed by the other two sectors, namely computer software and hardware, and telecommunications each with 8 per cent share. Housing and real estate, and construction with 7 per cent share each were next in importance (Table 1).

Table 1: Share of various sub-sectors in FDI inflows

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Services Sector (financial &amp; non-financial)</td>
<td>28,516</td>
<td>20,776</td>
<td>13,044</td>
<td>1,18,274</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(6,138)</td>
<td>(4,353)</td>
<td>(2,853)</td>
<td>(26,454)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Computer Software &amp; Hardware</td>
<td>7,329</td>
<td>4,351</td>
<td>3,054</td>
<td>47,144</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1,677)</td>
<td>(919)</td>
<td>(670)</td>
<td>(10,601)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Telecommunications (radio paging, cellular mobile, basic telephone services)</td>
<td>11,727</td>
<td>12,338</td>
<td>6,021</td>
<td>46,727</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2,558)</td>
<td>(2,554)</td>
<td>(1,327)</td>
<td>(10,258)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Housing &amp; Real Estate</td>
<td>12,621</td>
<td>13,586</td>
<td>4,680</td>
<td>42,049</td>
<td>7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2,801)</td>
<td>(2,844)</td>
<td>(1,024)</td>
<td>(9,380)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Construction Activities (including roads &amp; highways)</td>
<td>8,792</td>
<td>13,516</td>
<td>4,109</td>
<td>39,802</td>
<td>7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2,028)</td>
<td>(2,862)</td>
<td>(911)</td>
<td>(8,964)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Economic survey 2010-11
*figures in parentheses are US$ million

Of the total cumulative FDI in different categories of the service sector, financial services constitutes almost half the total foreign direct investment, followed by banking and other services with 10% and 21.5%, respectively. Due to the increase in FDI in services, its share in total FDI inflows in India increased from 16.4 per cent in 2005 to an astounding 35.4 per cent in 2006, but this share declined in 2007 to 18 per cent, yet maintaining the net increase over the period 2005-08. (NCAER, 2009)

3.0 Review of literature

There exists considerable literature on the factors that determine the FDI flows to a country. Using a theoretical model based on the derived demand for
foreign capital of a profit maximising, multiple product monopolist, Lucas (1993) examined the determinants of FDI flows in seven East and Southeast Asian economies (Indonesia, South Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand) over the period 1960-87. FDI inflows are found to be less elastic with respect to costs of capital than to wages, and to be more elastic with respect to aggregate demand in export markets than domestic demand.

Dunning (1993) states that FDI takes place when three sets of determining factors exist simultaneously – the presence of ownership-specific competitive advantages (e.g. proprietary technology) in a MNC, the presence of locational advantages in the host country (e.g., large markets or lower costs of resources or superior infrastructure), and the presence of superior commercial benefits through internalization which arise from exploiting imperfections in external markets (i.e., adopting FDI rather than arm’s length transactions). Imperfections in external markets are exploited by a reduction in uncertainty and transaction costs and reduction of state-generated imperfections such as tariffs, foreign exchange controls and subsidies.

While the first and third conditions are firm-specific determinants of FDI, the second is location-specific and has a crucial influence on host country’s inflows of FDI. If only the first condition is met, the firms will rely on exports, licensing or the sale of patents to service a foreign market. In the presence of internalization incentives (e.g., protection from supply disruptions and economies of common governance), FDI becomes the preferred mode of servicing foreign markets but only in the presence of location-specific advantages. Within the trinity of conditions, for FDI to occur, locational determinants are the only ones that host governments can influence directly (UNCTAD, World Investment Report, 1998).

Loree and Guisinger (1995) examine the effects of policy and non-policy variables on the location of new U.S direct investment abroad (i.e., the equity component of FDI that flows to countries as distinct from reinvested earnings of existing affiliates) for two years: 1977 and 1982. The policy variables employed include performance requirements (such as exporting a minimum amount, importing no more than a certain amount etc.) and investment incentives (e.g., tax concessions, tariff concessions and subsidies). The non-policy variables examined are political stability, cultural distance, market characteristics,
infrastructure and wage levels. Their results show statistically significant effects for investment incentives, performance requirements and host country effective tax rates. Further, significance is also found for non-policy variables such as political stability, distance, GDP per capita and infrastructure.

Singh and Jun (1995) expand on earlier studies of the determinants of foreign direct investment (FDI) by empirically analyzing various factors including political risk, business conditions, and macroeconomic variables that influence direct investment flows to developing countries. Wei (1997) studies the effect of corruption on FDI covering bilateral investment from 14 source countries to 45 host countries during 1990-91. His findings show that a rise in either the tax rate on MNCs or the corruption level in the host country reduces inward FDI.

Gastanaga et al. (1998) identify the relative importance of host country reforms on foreign investment across a sample of less developed countries (LDCs). The various policy/institutional variables examined for the purpose include corporate tax rates, tariff rates, degree of openness to international capital flows, exchange rate distortions, contract enforcement, nationalisation, bureaucratic delay and corruption. The effects of such policies are analysed in a multivariate regression analysis with panel methods for 49 LDCs over 1970-95. The size of country effect is dealt with by defining the dependent variable in terms of FDI per units of GDP. The results, in general, show significant effects of most variables including tax rates, tariff rates, degree of openness to international capital flows, GDP growth rate, contract enforcement, bureaucratic delay and corruption. Nunnenkamp (2001) focuses on location-specific determinants of FDI that can be influenced by host country governments. His classification of location-specific factors draws largely on UNCTAD’s classification (UNCTAD, 1998). Accordingly, host country determinants of FDI are grouped into three broad categories, viz., the overall policy framework for FDI, economic determinants and business facilitation measures. The overall policy framework includes economic and political stability as well as regulations governing the entry and operations of MNCs.

Noorbakhsh et al. (2001) argue that developing countries might enhance their attractiveness as locations for FDI by following policies that raise the level of local skills and build up human resource capabilities. Taking 36 developing
countries from Africa, Asia and Latin America over the period 1980-94 and carrying out regression analysis, they find that human capital is a statistically significant determinant of FDI inflows.

Asiedu (2002) finds the determinants of FDI to developing countries and analyses whether these variables have a differential impact on FDI flows to sub-Saharan Africa (SSA). She examines why SSA has been relatively unsuccessful in attracting FDI although the last decade of the twentieth century witnessed a dramatic increase in FDI to developing countries. Using cross-sectional data on 71 developing countries about half of which are in SSA, cross-section regressions are carried out where the variables are averaged over the period 1988-97. Then, estimates are obtained using panel regressions where variables are averaged over three sub-periods: 1988-90, 1991-93 and 1994-97. The dependent variable is the ratio of net FDI flows to GNP which is contemplated as a function of return on investment in the host country, infrastructure development, openness of the host country, political risk and other factors such as inflation rate and growth rate of GDP. After examining the effect of these variables on FDI flows, Asiedu includes a dummy variable (AFRICA) to test whether countries in SSA, on an average, receive less FDI relative to countries in other regions.

The results indicate that a higher return on investment and better infrastructure have a positive impact on FDI to non-SSA countries, but have no significant impact on FDI to SSA. Further, it is seen that trade openness promotes FDI to SSA and non-SSA countries although the marginal benefit from increased openness is less for SSA. The Africa dummy variable is found to be significant with a negative estimated coefficient, implying that countries in SSA, on an average, receive less FDI than countries in other regions by virtue of their geographical location, i.e., there is an adverse effect on FDI for being an African country. These results suggest that Africa is different and therefore, policies that have been successful in other regions may not be equally successful in Africa.

Baniak et al. (2002) focus on the links between macroeconomic and legal stability and the inflow of FDI. Focusing on some select transition economies (Georgia, Kyrgyzstan), their analysis shows that macroeconomic and legal instability and high volatility of fiscal and business regulations reduces the flow of FDI. Therefore, for flow of long-term foreign capital, a stable economic and institutional environment is needed.
Broadly, the existing literature on determinants of FDI identify the host country’s GDP, labour cost, trade openness, tariffs and tax rates and political and economic stability as major factors affecting the amount of FDI entering a country. This paper would focus on FDI flows to the services sector in India.

4.0 Determinants of FDI in Service sector of India: An Empirical Analysis

4.1 Research Methodology

To identify the determinants of FDI inflows in services in India, this study uses ordinary least squares (OLS) regression analysis. It examines the impact of GDP, GDP per capita, trade openness, FDI openness, and labour cost on FDI inflows. The dependent variable initially used is FDI inflows in the services sector. The selection of independent variables is explained below.

The size of domestic market in the host country is typically found to be a major determinant of FDI flows to developing countries. So, this study uses India’s GDP as an indicator of the market size. A larger GDP per capita indicates higher buying capacity of people. It may have an additional effect if the demand for host country goods is characterised by higher income elasticity of demand. Greater GDP per capita in a country also may indicate a more productive workforce. This may favour skill-intensive sectors such as services in this country rather than another. Trade openness, in general, is expected to have a positive impact on FDI. Developing countries, including India, have significantly liberalised their trade regimes. Open economies encourage more confidence and foreign investment since. Similarly, FDI openness is also expected to have a positive effect on FDI inflows. High levels of education are regarded as the most important element in human resource development (see, for example, OECD, 1998c and World Bank 1999). Efficient education systems may result in a labour force that is literate and skilled in the use of modern production facilities and techniques. In this respect, therefore, the most critical manpower requirement tends to be for people with tertiary education (having high level of technical and managerial skills) who can be managers, administrators or professional technicians. This is particularly true of the services sector which is largely skilled-labour intensive. Skilled labour availability is an important consideration for FDI in services sector as the investment is labour-intensive, efficiency-
Determinants of Foreign Direct Investment in India’s Service Sector

seeking FDI. For a given level of productivity, labour typically costs less than in
developing countries as compared to developed countries. This emphasises the
need to include skilled labour as an additional explanatory variable. Thus, higher
skilled labour is expected to be associated with increased levels of FDI.

The following estimating equation is used in the analysis:

\[
\text{FDI inflows in service sector} = \alpha + \beta_1 (\text{GDP}) + \beta_2 (\text{GDP per capita}) + \beta_3 (\text{trade openness}) + \beta_4 (\text{FDI openness}) + \beta_5 (\text{skilled labour})
\]  

Thereafter, an alternative specification is employed with FDI flows in
service sector expressed as a percentage of GDP as the dependent variable. In
this specification, the growth rate of GDP is taken as a measure of the
attractiveness of the host country’s market. The growth of the domestic market in
host countries is typically found to be a major determinant of FDI flows to
developing countries (UNCTAD, 1998). Continued expansion of FDI requires
that market growth prospects be favourable. This ensures long-term commitment
by foreign investors as rapid economic growth leads to increase in income and
consumer demand for goods and services.

The estimating equation for the above specification is as follows:

\[
\frac{\text{FDI in service/GDP}}{} = \alpha + \beta_1 (\text{GDP}) + \beta_2 (\text{GDP per capita}) + \beta_3 (\text{trade openness}) + \beta_4 (\text{FDI openness}) + \beta_5 (\text{skilled labour})
\]

Introducing lagged dependent variable

Finally, the estimated regressions include the lagged change in the dependent
variable. The presence of this variable can be rationalised on the basis that past
FDI inflows embody information on operating conditions and the general quality
of the business climate in a host country. This information leads potential
investors to view locations accordingly. Further, empirical evidence has shown
that investors tend to favour familiar countries and regard territories that they do
not know as risky.

To take into account the fact that the adjustment from current level of
investment to the desired level may take some time to accomplish, it is useful to
include the lagged dependent variable as an explanatory variable. Using a partial
adjustment model, it is assumed that there is an optimum or desired level of
capital stock needed to produce a given output under the given state of technology, rate of interest etc. Corresponding to it, there is a desired level of investment which is composed of a desired level of domestic investment and a desired level of foreign direct investment. Since the desired level of foreign direct investment is not directly observable, the partial adjustment model postulates the following hypothesis:

\[ FDI_t - FDI_{t-1} = \delta (FDI^*_t - FDI_{t-1}) \]  \hspace{1cm} (i)

where \( \delta \) such that \( 0<\delta \leq 1 \) is known as the coefficient of adjustment and where \( FDI_t - FDI_{t-1} \) = actual change and \( (FDI^*_t - FDI_{t-1}) \) = desired change. The actual FDI adjusts to the desired level of FDI with speed \( \delta \).

Since \( FDI_t - FDI_{t-1} \) is the change in foreign direct investment between two periods, equation (1) can alternatively be written as

\[ \Delta FDI_t = \delta (FDI^*_t - FDI_{t-1}) \]  \hspace{1cm} (ii)

where \( \Delta FDI_t \) = change in the level of foreign direct investment in time period \( t \) over period \( t-1 \).

Equation (2) postulates that the actual change in foreign direct investment in any given time period \( t \) is some fraction \( \delta \) of the desired change for that period. If \( \delta=1 \), it means that the actual FDI inflows are equal to the desired amount of FDI; i.e., actual FDI adjusts to the desired FDI instantaneously (in the same time period). However, if \( \delta=0 \), it means that nothing changes since actual FDI at time \( t \) is the same as that observed in the previous time period. Typically, \( \delta \) is expected to lie between these extremes since adjustment to the desired level of FDI is likely to be incomplete because of rigidity, inertia, contractual obligations, etc.- hence the name partial adjustment model. The adjustment mechanism in equation (1) can alternatively be written as

\[ FDI_t = \delta FDI^*_t + (1-\delta)FDI_{t-1} \]  \hspace{1cm} (iii)

showing that the observed level of FDI at time \( t \) is a weighted average of the desired level of FDI at that time and the FDI existing in the previous time period, \( \delta \) and \( (1-\delta) \) being the weights.

Using equation (3) and assuming a linear relationship among the dependent and independent variables as above, the estimating equation can be specified as:
Determinants of Foreign Direct Investment in India’s Service Sector

\[ Y = \delta \{ a_0 + a_1 \text{ (real GDP)} + a_2 \text{ (lagged GDP)} + a_3 \text{ (tax rate)} + a_4 \text{ (trade openness)} + a_5 \text{ (skilled labour)} + a_6 \text{ (political stability)} \} + (1-\delta)Y_{t-1} \]

---------- (3)

where \( Y \rightarrow \) dependent variable (FDI inflows in services in the first case and FDI inflows in services as a fraction of GDP in the second case).

Alternatively, equation (3) may be rewritten as:

\[ Y = \alpha + \beta_1 \text{ (GDP)} + \beta_2 \text{ (GDP per capita)} + \beta_3 \text{ (trade openness)} + \beta_4 \text{ (FDI openness)} + \beta_5 \text{ (skilled labour)} + \beta_6 \text{ (political stability)} + \beta_7 Y (-1) \]

---------- (4)

where \( Y(-1) \rightarrow \) lagged value of the dependent variable

The effect of the lagged dependent variable is expected to be positive and the coefficient of the lagged dependent variable should be smaller than one.

4.2 Sample Period and Data Sources

The regression analysis is done on annual data from the period 1991 to 2010. Data on FDI inflows in the services sector has been obtained from various issues of SIA Newsletter, Department of Industrial Policy and Promotion. Data on GDP and GDP per capita has been obtained from Handbook of Statistics on Indian Economy. As is standard in the literature, trade openness has been calculated by dividing (exports + imports) by India’s GDP. FDI openness has been calculated as FDI stock divided by GDP. The data on exports, imports and FDI stock has been obtained from RBI Bulletin and Handbook of Statistics on Indian Economy. For skilled labour, gross enrolment in tertiary education (ISCED levels 5 and 6) was taken as an indicator of skilled labour level. Data on gross enrolment in tertiary education was taken from education database of UNESCO Institute for Statistics.

4.3 Results of Regression Analysis

The results of the regression analysis obtained by using the first specification (equation 1) mentioned above are reported in Table 2. In general, the data fits the model reasonably well with adjusted \( R^2 \) around 97%. All the coefficients are statistically significant at the conventional levels of 5% and 10%. The coefficient of GDP has a negative sign indicating that as GDP increases, FDI falls. A
possible explanation lies in the fact that the importance of market-seeking FDI has declined in recent times. For the services sector, FDI is largely efficiency-seeking motivated by low cost skilled labour. A larger GDP indicates a large market size and hence larger employment of factors of production, including skilled labour. This, in turn, reduces labour available to MNCs contemplating investment in services sector in India. Consequently, this could cause a fall in FDI.

Table 2: OLS estimates with FDI in services as the dependent variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>-2.329</td>
<td>0.504</td>
<td>-4.621</td>
<td>0.0003</td>
</tr>
<tr>
<td>GDPPC</td>
<td>135.928</td>
<td>381.158</td>
<td>3.566</td>
<td>0.0028</td>
</tr>
<tr>
<td>TOPEN</td>
<td>967.357</td>
<td>130.272</td>
<td>7.425</td>
<td>0.0000</td>
</tr>
<tr>
<td>FOPEN</td>
<td>60.36</td>
<td>667.754</td>
<td>9.039</td>
<td>0.0000</td>
</tr>
<tr>
<td>HC</td>
<td>0.0178</td>
<td>0.0074</td>
<td>2.387</td>
<td>0.0306</td>
</tr>
</tbody>
</table>

All other variables have expected signs. The GDP per capita has a positive sign indicating a positive impact of increased buying capacity on FDI inflows. Trade openness and FDI openness also have a positive effect on FDI flows. The availability of skilled labour has a favourable effect on FDI in services sector, which is normally expected in case of FDI in services.

Table 3 gives the regression results when the dependent variable is FDI as a fraction of GDP, i.e., specification as per equation (2). Here again, we get a negative sign and significant coefficient for GDP of the host country, i.e. India, thereby reinforcing the importance of market-seeking FDI. The coefficients of other variables have expected signs. While the coefficients of GDP per capita, trade openness and FDI openness are significant at 1%, 5% and 10% levels, the
coefficients of human capital is significant at 10% level. The results reinforce the importance of all these variables in influencing FDI in services.

Table 3: OLS estimates with FDI in services as a percentage of GDP as the dependent variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>-2.82E-06</td>
<td>6.44E-07</td>
<td>-4.386</td>
<td>0.0005</td>
</tr>
<tr>
<td>GDPPC</td>
<td>0.0015</td>
<td>0.0004</td>
<td>3.157</td>
<td>0.0065</td>
</tr>
<tr>
<td>FOPEN</td>
<td>6.9770</td>
<td>0.8524</td>
<td>8.185</td>
<td>0.0000</td>
</tr>
<tr>
<td>TOPEN</td>
<td>1.4653</td>
<td>0.1662</td>
<td>8.811</td>
<td>0.0000</td>
</tr>
<tr>
<td>HC</td>
<td>1.95E-08</td>
<td>9.55E-09</td>
<td>2.041</td>
<td>0.0592</td>
</tr>
</tbody>
</table>

Introducing the lagged dependent variable

As mentioned in equation (4) above, we will now estimate another specification with lagged value of FDI as an explanatory variable. The rationale of introducing this variable is that FDI in the current period may be affected by FDI in the previous period as it contains information about the conditions of the host economy. It may embody information about the general quality of the business climate in a host country which could lead potential investors to view locations accordingly. Table 4 gives the results of the specification where we have used FDI in services as the explanatory variable. We do not see a significant difference in $R^2$ from what was observed in Table 1. We get a negative sign for GDP variable and a positive sign for rest of the explanatory variables. For the new variable introduced, i.e., FDI lag, we get a positive sign. However, the estimated coefficient is insignificant. Thus, while lagged value of FDI has a positive relationship with FDI in services, the pattern is not definite.
Table 4: OLS estimates including lagged value of FDI (dependent variable- FDI in services)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>-2.3241</td>
<td>0.523</td>
<td>-4.439</td>
<td>0.0006</td>
</tr>
<tr>
<td>GDPPC</td>
<td>134.463</td>
<td>404.567</td>
<td>3.330</td>
<td>0.0050</td>
</tr>
<tr>
<td>TOPEN</td>
<td>983.142</td>
<td>181.087</td>
<td>5.429</td>
<td>0.0001</td>
</tr>
<tr>
<td>FOPEN</td>
<td>59.526</td>
<td>943.156</td>
<td>6.311</td>
<td>0.0000</td>
</tr>
<tr>
<td>HC</td>
<td>0.017</td>
<td>0.078</td>
<td>2.265</td>
<td>0.0398</td>
</tr>
<tr>
<td>FDILAG</td>
<td>0.024</td>
<td>0.184</td>
<td>0.130</td>
<td>0.8980</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.975</td>
<td>Mean dependent var</td>
<td>60749.1</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.967</td>
<td>S.D. dependent var</td>
<td>10130.8</td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>2.433</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5 gives the results of the specification where the explanatory variable is FDI in services as a percentage of GDP. The GDP coefficient is negative and significant. The coefficients of GDP per capita, trade openness and FDI openness are positive as well as significant. The coefficient of human capital is significant only at 10% and has a positive sign. The coefficient of lagged value of FDI has a positive sign. However, it is not significant.

Table 5: OLS estimates including lagged value of FDI (dependent variable- FDI in services as percentage of GDP)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>-2.82E-06</td>
<td>6.69E-07</td>
<td>-4.220</td>
<td>0.0009</td>
</tr>
<tr>
<td>GDPPC</td>
<td>0.0015</td>
<td>0.0005</td>
<td>2.970</td>
<td>0.0101</td>
</tr>
<tr>
<td>FOPEN</td>
<td>6.964</td>
<td>1.204</td>
<td>5.781</td>
<td>0.0000</td>
</tr>
<tr>
<td>TOPEN</td>
<td>1.467606</td>
<td>0.231</td>
<td>6.344</td>
<td>0.0000</td>
</tr>
<tr>
<td>HC</td>
<td>1.95E-08</td>
<td>9.99E-09</td>
<td>1.949</td>
<td>0.0715</td>
</tr>
<tr>
<td>FDILAG</td>
<td>3.50E-09</td>
<td>2.36E-07</td>
<td>0.014</td>
<td>0.9883</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.972014</td>
<td>Mean dependent var</td>
<td>0.07892</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.962018</td>
<td>S.D. dependent var</td>
<td>0.12049</td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>2.524251</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.4 Analysis of the results and inferences

In general, the results in Tables 1 to 4 show expected signs for all the explanatory variables taken up for study except GDP. The coefficient of GDP has a negative sign indicating that as GDP increases, FDI falls. This can be explained as follows. Conventionally, GDP is an important explanatory variable for market-seeking FDI. It is argued in literature that one of the most significant traditional FDI determinants, the size of national markets, has decreased in importance. In fact, efficiency-seeking FDI has emerged as an important type of FDI. The intention of the efficiency-seeking firms is to take advantage of different institutional arrangements, and economic systems and policies. Accordingly, the competition for FDI would be based increasingly on cost differences between locations, the quality of infrastructure and business-related services, the ease of doing business and the availability of skills. As our dependent variable is FDI in the services sector, the chances of FDI being market-seeking is relatively less. This is because services sector is largely driven by skilled labour availability. India is a country with abundant skilled labour available at a comparatively low cost. Hence, it may be anticipated that FDI coming to the services sector may largely be efficiency-seeking to take advantage of relatively low cost skilled labour available. In such a scenario, a high GDP would imply a large market. This, in turn, would imply more employment of factors of production, including skilled labour. In such a case, greater competition for skilled labour could dampen the advantage that MNCs would seek to derive from host economy and hence reduce FDI.

The GDP per capita has a positive sign indicating that as GDP per capita rises, FDI inflows increase. GDP per capita indicates the buying capacity of consumers in the host economy and hence larger buying capacity will have a positive impact on FDI inflows. Trade openness and FDI openness also have a positive effect on FDI flows. The new business environment of globalization and liberalization have substantially reduced barriers to trade and investment and created conducive conditions for MNCs to invest in other countries. Hence, greater trade openness and FDI openness of the host country (India) would increase FDI inflows.

Another important variable included in our analysis is human capital, or the availability of skilled labour. We believe that for FDI in services, this is an
important explanatory variable as services sector is largely skilled labour-intensive. The results show that availability of skilled labour has a positive effect on FDI in services sector. Thus, as skilled labour availability increases, it leads to greater FDI inflows.

The lagged value of FDI was also taken as an explanatory variable in the last two specifications. While the estimated coefficient was positive, it was found to be insignificant in both the cases. This implies that while larger lagged values lead to larger FDI in the current period, the impact is not definite.

Thus, based on the above analysis, we conclude that FDI inflows in the services sector in India are significantly determined by national income, GDP per capita, trade openness, FDI openness and skilled labour availability.

5.0 Conclusions

This study focuses on FDI in services sector in India and its determinants. The empirical results in this paper find that GDP has a negative relationship with FDI in services. Other variables such as GDP per capita, trade openness and FDI openness have a positive relationship with FDI inflows in services. The contribution of this study, however, is in highlighting the importance of availability of skilled labour. It confirms that the FDI in services sector is efficiency-seeking and greater availability of skilled labour in India leads to greater inflows of FDI in services sector.

References


