ADBI Working Paper Series

**Global Economic Crisis: Impact
and Restructuring of the Services
Sector in India**

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No. 311
September 2011

Asian Development Bank Institute

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Suggested citation:

Das, A., D, R. Banga, and D. Kumar. 2011. Global Economic Crisis: Impact and Restructuring of the Services Sector in India. ADBI Working Paper 311. Tokyo: Asian Development Bank Institute. Available: http://www.adbi.org/working-paper/2011/09/30/4727.global.economic.crisis.impact.services.india/

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Abstract

The Indian economy has shown considerable resilience to the global economic crisis by maintaining one of the highest growth rates in the world. The services sector accounted for around 88% of the growth rate in real gross domestic product in 2008–09. To demystify the relatively resilient growth of the services sector in India, this study examines both the demand-side and the supply-side factors that have contributed to its growth To assess the role of external demand, income elasticity of export demand for the aggregated services and some of the disaggregated services of India were estimated. It was found that the main driver of growth in India's services sector is growth in the domestic demand for services and not growth in the export of services. The contribution of the growth of the export of services to the growth of the overall services sector was only 22%. In order to examine the role of supply-side factors, total factor productivity growth was estimated in the services sectors that have contributed substantially to overall growth, which are the software and banking services. Using Data Envelopment Analysis at the firm level, it was found that both these sectors experienced productivity growth above 10% after 2000. High domestic demand and high productivity growth largely explain the resilience of India's services growth.

JEL Classification: F14, L86, O47

Contents

1. INTRODUCTION

Unlike many other developing countries, India has shown a considerable resilience to the global economic crisis by maintaining one of the highest growth rates. It recorded a growth rate of 6.7% in 2008–09, which was only 2.1 percentage points lower than its average growth of the last five years. One of the main drivers of India's growth during the global economic crisis has been the services sector, which accounted for around 88% of the growth rate of the real gross domestic product (GDP) in 2008–09. The services sector grew at a rate of 9.3%, even as agriculture and industry recorded a steep decline in their growth rates. India's services-led-growth is even more intriguing considering the laggard growth of the global services sector, which has remained far behind the global manufacturing sector and is showing few signs of recovery.[1]

To demystify the relatively resilient growth of the Indian services sector in the face of the global economic crisis, it is important to look closely at the changing structure of the Indian economy and examine its dependence on the export of services. The services sector, which constituted around 49% of the GDP in 1990–91, now contributes 64.5% of the GDP (2008–09). Of this, the export of services comprises around 16% of the services GDP and is less than 10% of the total GDP.[2]

Within the services sector, the largest component of exports is information technology enabled services and business processing and outsourcing (ITeS-BPO), which constituted almost 45% of the total services exports of India in 2008–09 and grew at an annual average of 30% in 2005–06 and 2007–08. In 2008–09, exports in this sector increased by 28% from the previous year and reached US$40.8 billion out of total services exports of US$90.1 billion (NASSCOM, 2009). The limited impact of the global economic crisis on the export of ITeS-BPO services and the low share of exports in the total output generated by the services sector, along with the limited exposure of the Indian financial sector to international financial institutions, explains to a large extent the Indian services growth miracle. However, this macro-picture of the services sector does not reflect the dynamics of the restructuring of India's services sector that has taken place over time.

In this context, the main objective of this paper is to analyze both the implications of the global crisis on India's services sector and also the sector's changing composition. Trends in the different sub-sectors are examined with special reference to the quarterly changes during the global economic crisis. Global income elasticities are estimated for India's aggregated and disaggregated services sectors to compare the significance of existing global and domestic demand for India's services. To assess the supply-side factors contributing to the growth of services, we estimate total factor productivity growth (TFPG) in specific services sectors, which are retail/wholesale trade services, software services, and banking services. These services are a large proportion of the GDP and contribute significantly to the growth of the services sector. A detailed firm-level analysis using Data Envelopment Analysis (DEA) is undertaken for banks and information technology (IT) firms to examine these sectors' sources of productivity growth and assess the impact of the global crisis on productivity. The paper further discusses the factors that may have affected productivity growth in the services sector, such as government policies, and provides future policy directions for supporting productivity growth in specific services sectors and for aligning the restructuring of the services sector with the growing domestic demand.

The paper is organized as follows: Section 2 examines the over time contribution of India's services sector to GDP growth. An in-depth analysis is undertaken of the changing composition of the services sector and inferences are drawn on the contribution of disaggregated services to

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[1] J. P Morgan's Global Services Business Activity Index pointed to a decline in services activity for the 13th successive month in June 2009. It also indicated that global manufacturing activity is far stronger than global services activity.

[2] Source: Central Statistical Organisation (CSO).

GDP growth. Section 3 analyzes the implications of the global economic crisis on India's export of services by estimating income demand elasticities. Section 4 analyzes the role played by the domestic demand for services during the global economic crisis. Section 5 discusses methodology and presents the estimates of TFPG in specific services sectors. Section 6 highlights the roles played by domestic demand, global demand, and productivity growth in retail/wholesale services, software services, and banking services, and also provides recommendations for the further improvement of productivity growth in these services. Section 7 concludes the paper.

2. CONTRIBUTION OF THE SERVICES SECTOR TO INDIA'S GROWTH

Changing sectoral composition and the rising significance of services

Amidst the global economic crisis, the growth rate of the Indian economy decelerated to 6.7% from an average growth of 8.8% in the period 2002–2007. This was 2.3 percentage points lower than the previous year. Table 1 shows the quarterly growth rate of GDP and shows that in Q4 2007–08, the impact of the global economic crisis was felt for the first time when the growth rate fell from 9.3% (Q3 2007–08) to 8.6% (Q4 2007–08). Although the quarterly growth rate of GDP fell continuously until Q3 2008–09, it stabilized in Q4 2008–09, grossing 6.7% of the annual growth rate.

Table 1: Growth Rates of Real GDP (%)										
Sector	2007-08*	2008-09#		2007-08				2008-09		
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	2	3	4	5	6	7	8	9	10	11
1. Agriculture and Allied Activities	4.9 (17.8)	1.6 (17.0)	4.3	3.9	8.1	2.2	3.0	2.7	-0.8	2.7
2. Industry	7.4 (19.2)	2.6 (18.5)	8.5	7.5	7.6	5.9	5.1	4.8	1.6	-0.5
2.1 Mining and Quarrying	3.3	3.6	0.1	3.8	4.2	4.7	4.6	3.7	4.9	1.6
2.2 Manufacturing	8.2	2.4	10.0	8.2	8.6	6.3	5.5	5.1	0.9	-1.4
2.3 Electricity, Gas and Water Supply	5.3	3.4	6.9	5.9	3.8	4.6	2.7	3.8	3.5	3.6
3. Services	10.8 (63.0)	9.4 (64.5)	10.8	10.7	10.2	11.3	10.0	9.8	9.5	8.4
3.1 Trade, Hotels, Restaurants, Transport, Storage and Communication	12.4	9	13.1	10.9	11.7	13.8	13.0	12.1	5.9	6.3
3.2 Financing, Insurance, Real Estate and Business Services	11.7	7.8	12.6	12.4	11.9	10.3	6.9	6.4	8.3	9.5
3.3 Community, Social and Personal services	6.8	13.1	4.5	7.1	5.5	9.5	8.2	9.0	22.5	12.5
3.4 Construction	10.1	7.2	11.0	13.4	9.7	6.9	8.4	9.6	4.2	6.8
4. Real GDP at Factor Cost	9	6.7	9.2	9.0	9.3	8.6	7.8	7.7	5.8	5.8
* : Quick Estimates.		# : Revised Estimates.								

Source: Central Statistical Organisation.

Note   : Figures in parentheses indicate shares in real GDP

India's GDP growth in 2008–09 was one of the highest in the world. This reflected the relative resilience of the country's growth impulses to a severe external shock and demonstrated the impact India's policy response had on containing the adverse effects of the global economic crisis on domestic growth.

Figure 1 shows the sectoral shares of total GDP between 1990–91 and 2008–09, highlighting the change in sectoral composition of India's GDP. The agriculture sector's share of the total GDP decreased from 31.4% in 1990–01 to 17% in 2008–09, and the industrial sector's share fell from 19.8% in 1990–01 to 18.5% in 2008–09. Meanwhile, the services sector's share increased substantially from 48.8% in 1990–01 to 64.5% in 2008–09. During the global economic crisis, the services sector's share in real GDP increased from 63% in 2007–08 to 64.5% in 2008–09, while that of the agricultural and industrial sectors decreased. The services sector experienced the smallest decline in growth rate compared to the other two sectors. The growth rate of the services sector fell from 10.8% in 2007–08 to 9.3% in 2008–09, a decline of 1.5 percentage points, compared to declines of 3.3 and 4.7 percentage points in the agricultural and industrial sectors, respectively.

Figure 1: Change in Sectoral Composition of India's GDP (%)

**Change in Sectoral Shares in GDP: 1990–91 to 2008–09**
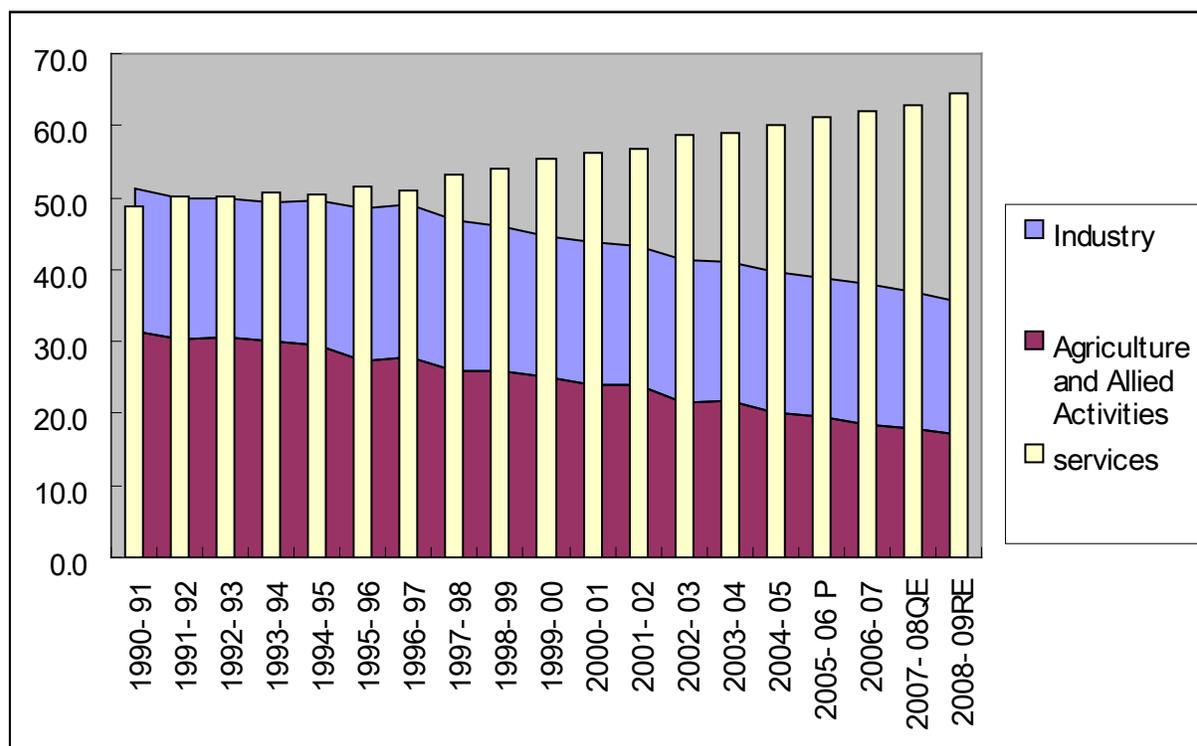
Notes: GDP = gross domestic product, P = Provisional, QE = Quaterly Estimates, RE = Revised Estimates.

Source: Central Statistical Organisation.

A closer look at the composition of the Indian services sector reveals some very interesting facts (Figure 2). Within the services sector, the highest share in services GDP has been domestic trade (retail and wholesale trade). It averaged around 23.2% of the total services GDP in FY1990-91–FY1999-2000, and then further increased to 23.4% in FY2000–FY2007, thereby remaining the most significant sector in terms of its share of the total services output. This is followed by real estate with an average share of 13.7% in FY1990-01–FY1999-2000, which fell by 1.0 percentage point to 12.7% in FY2000-01 to FY2007-08. Next in importance in terms of share of services output are the public administration and defense and construction services with respective average shares of 12% and 11.2% in FY1990–FY1999, which then fell marginally to 10.8% and 10.2% in FY2000-01–FY2007-08. What is interesting is that the top five services categories remained the same over time in terms of their share of the total services sector output. These services are also those that have low tradability within the Indian context. The fifth and sixth ranking are banking and insurance and transport services, which averaged 10% and 8.5%, respectively, across the whole analysis period.

What is most striking is the rise in the average share of the GDP contributed by communication services, which rose from 2.4% to 7.0%. There has been a consistent rise in the share of communication services in the total services output; however, it must be noted that the share has remained less than 10% of the total output of services at all times.

Figure 2: Composition of India's Services Sector, 1990–91 to 2007–08

Shares of Disaggregated Services in Total

Services GDP: 1990–91 to 2007–08
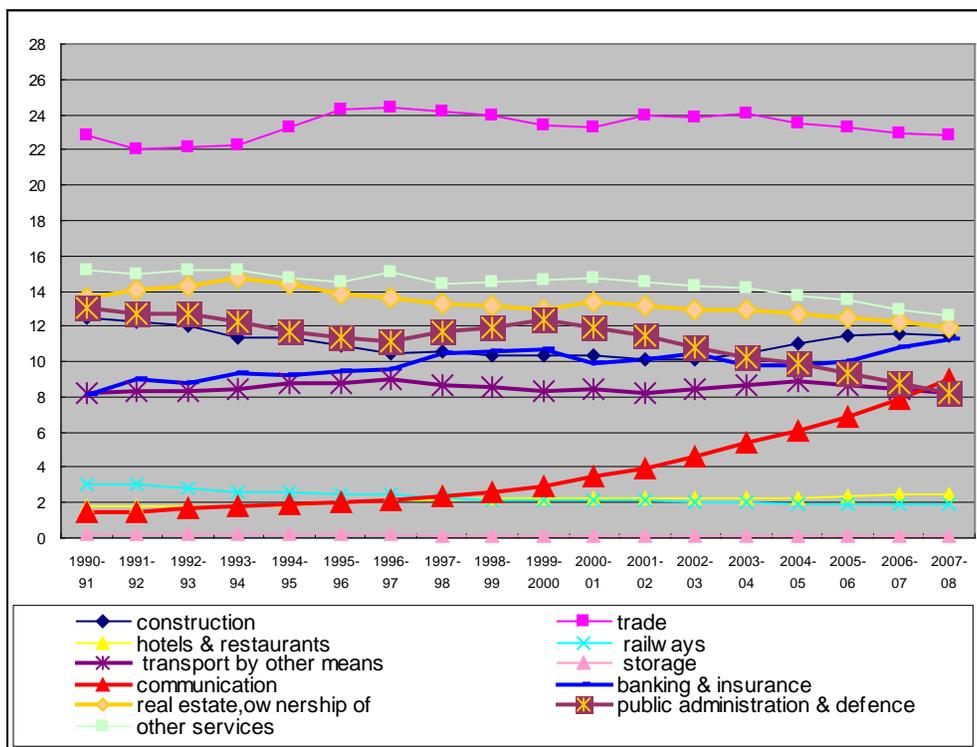
Source: Reserve Bank of India.

2.1 Decomposition of India's GDP growth rate: contribution of the different services sectors

Decomposing GDP growth into the growth of the three sectors of the economy (Table 2), we find that in 2008–09 the Indian economy recorded a growth rate of 6.7%, of which 5.9 percentage points were contributed by the services sector. The manufacturing sector contributed 0.5 percentage points, while the agriculture sector contributed 0.3 percentage points. In fact, in 2008–09, almost 88% of GDP growth was explained by the growth of the services sector. The contribution of services to GDP growth over the years clearly shows that the main momentum for the growth of real GDP has come from the services sector, especially during global economic crisis.

**Table 2: Sectoral Decomposition of GDP Growth, 1990–91 to 2008–09**

Year	Growth of GDP at factor cost	Agriculture	Industry	Services
1991–92	1.4	(0.6)	(0.1)	2.1
1992–93	5.4	2.0	0.6	2.7
1993–94	5.7	1.0	1.4	3.2
1994–95	6.4	1.4	2.0	3.0
1995–96	7.3	(0.2)	2.6	4.8
1996–97	8.0	2.7	1.7	3.6
1997–98	4.3	(0.7)	0.4	4.6
1998–99	6.7	1.6	0.7	4.3
1999–00	6.4	0.7	0.7	5.0
2000–01	4.4	(0.1)	1.3	3.2
2001–02	5.8	1.5	0.5	3.8
2002–03	3.8	(1.7)	1.3	4.3
2003–04	8.5	2.1	1.2	5.2
2004–05	7.5	0.0	1.7	5.8
2005–06	9.5	1.2	1.6	6.7
2006–07	9.7	0.8	2.1	6.9
2007–08	9.0	0.9	1.4	6.7
2008–09	6.7	0.3	0.5	5.9

GDP = gross domestic product.

Source: Authors' calculations.

Figure 3 shows the growth rate of the various services within the services sector. The figure shows that the maximum contribution to GDP growth rate in 2007–08, which was 6.7%, came from the domestic trade sector (retail and wholesale), which contributed 1.42 percentage points out of the 6.7% growth. This was followed by communication services (which includes telecommunication and software services) and banking and insurance services, which contributed 1.25 and 1.03 percentage points, respectively. Construction services, other services, and real estate services contributed 0.72, 0.68, and 0.65 percentage points, respectively. These were followed by transport and public administration and defense services. The contribution of hotels and restaurants and railways to services growth was less than 0.2 percentage points.

This analysis shows that the main drivers of GDP growth have been domestic trade, communication services, and banking and insurance services.

Figure 3: Decomposition of Services Sector's Growth Rate
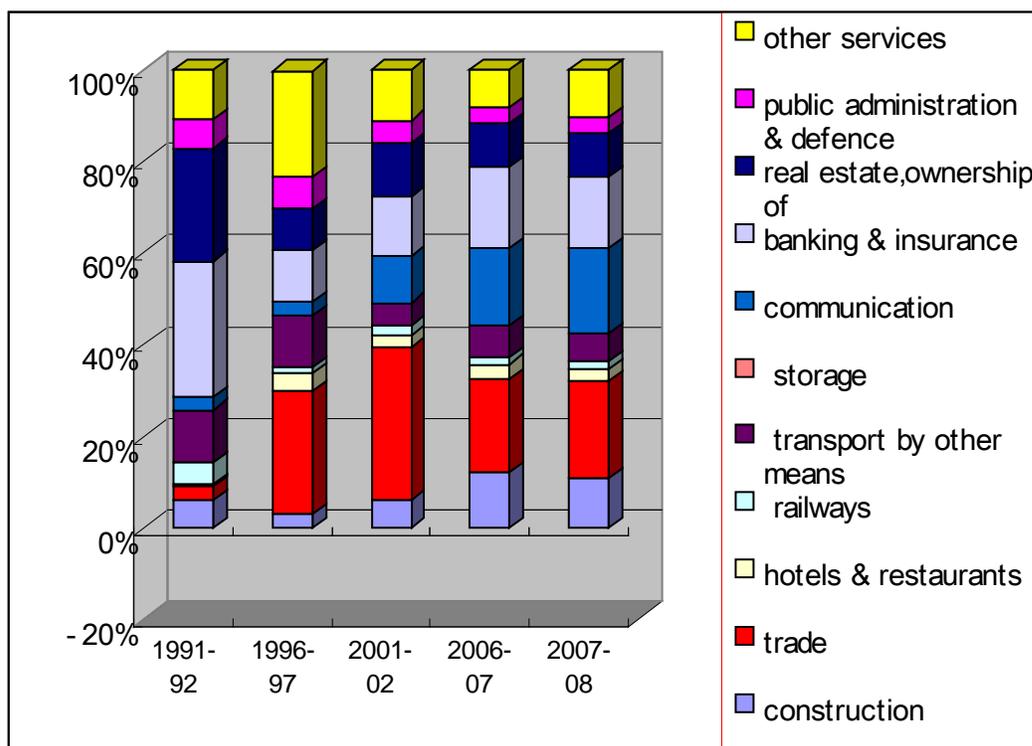
Source: Central Statistical Organisation, National accounts Division.

3. IMPLICATIONS OF THE GLOBAL ECONOMIC CRISIS ON INDIA'S EXPORT OF SERVICES

3.1 Share of India's Export of Services in Total Services Output and GDP

Although India's services sector has grown in a sustained fashion since 2003–04 and recorded a growth rate above 5%, it is important to examine to what extent this growth has been driven by external demand and the export of services. In less than two decades, India has become one of the top five exporters of services amongst the developing countries, and it has surpassed some of the other Asian countries that dominated the services trade in the 1990s. India has been deemed a major exporter of services in the world with a market share of 2.6% in 2007 as opposed to 0.6% in 1995. India's services sector has matured considerably in the last few years and has been globally recognized for its high growth (NASSCOM 2009).

Indian services export grew at a compounded annual growth rate of 17% in 1993–00 and at a much faster pace of about 24% in 2001–08. The export of services grew from US$20.8 billion in 2002 to US$90.1 billion in 2007–08 and then further to US$101 billion in 2008–09. India's services sector's growth has mainly been attributed to its exports. It is interesting to note, however, that although there has been rapid growth in the export of services from 2002 onwards, the export of services still remains around 15.1% of the total services output and around 9.4% of the total GDP of the economy (Table 3).

Table 3: Share of Services Exports in Services Output and GDP,

1990–91 to 2008–09

Year	Share of Export of Services in Total Services Output	Share of Export of Services in GDP
1990–91	3.2	1.6
1991–92	4.2	2.1
1992–93	4.0	2.0
1993–94	4.2	2.1
1994–95	4.2	2.1
1995–96	4.5	2.3
1996–97	4.2	2.1
1997–98	4.8	2.5
1998–99	6.4	3.4
1999–00	6.9	3.8
2000–01	6.9	3.9
2001–02	6.8	3.9
2002–03	7.6	4.4
2003–04	8.2	4.9
2004–05	11.2	6.7
2005–06	12.9	7.8
2008–09	15.1	9.4

GDP = gross domestic product.

Source: Reserve Bank of India, Handbook of Statistics, 2008-09

What is also noteworthy is that a decomposition of services export growth (Figure 4) clearly shows that it is not growth in exports of services that is driving growth in the services sector, but it is instead the growth in domestic demand that is the main driver. The contribution of the growth of the export of services to the growth of the overall services sector was only 22%, i.e., out of the 17.5% growth of the service, the contribution of the growth of the services sector was a mere 3.93 percentage points. However, we do find that over the years the contribution of the growth of exports of services to total services growth has increased. This indicates that although the export of services is becoming important for India's services sector, it is not the main driver of its growth.

Figure 4: Decomposition of Growth of Services: Growth in Domestic Demand Versus Growth in Exports
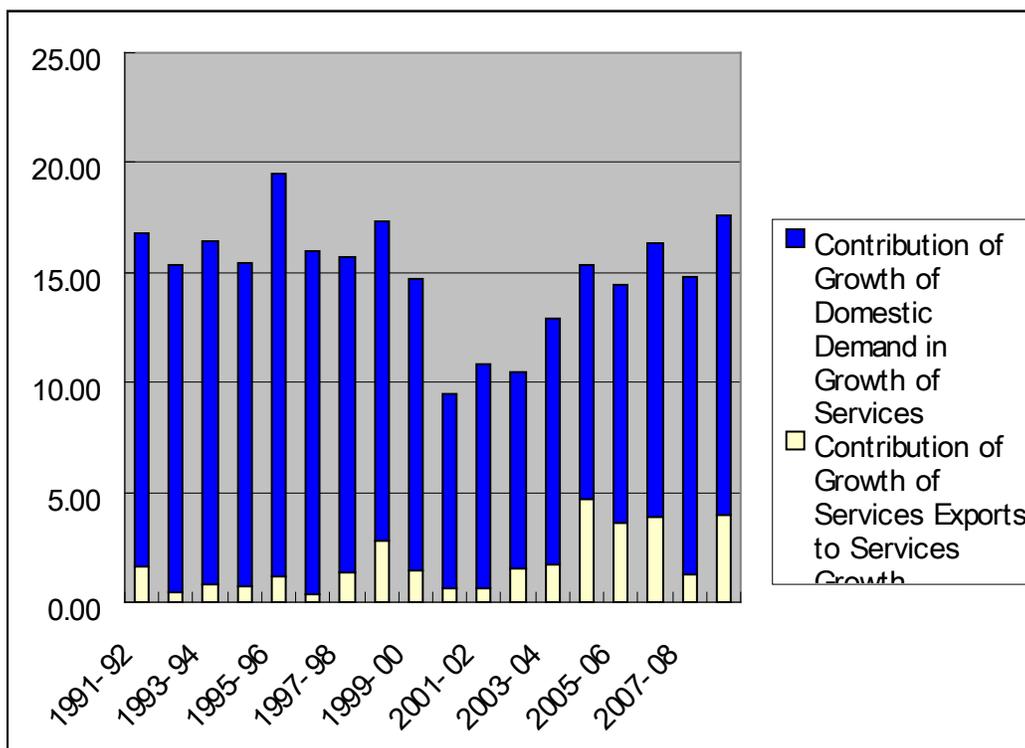
Source: Reserve Bank of India, Handbook of Statistics, 2008-09.

3.2 Composition of India's Export of Services

Within the export of services, we find that India's export basket has not diversified much over time. Only a few services comprise the whole of India's export basket, with the software services accounting for the largest share, i.e., around 41% in 2005–06 and 47% in 2008–09. Together with software services, non-software services, which comprise business and professional services, account for around 70% of India's exports (Figure 5).

Figure 5: Composition of India's Export Basket: 2005–06 to 2008–09
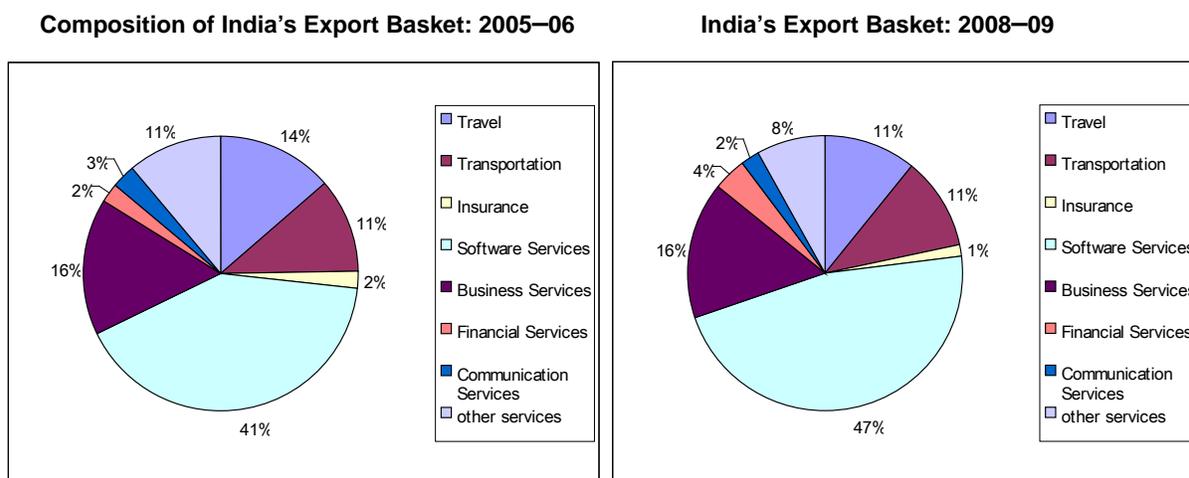
Source: Reserve Bank of India, Handbook of Statistics, 2008–09

3.3   Estimation of the Impact of the Global Economic Crisis on India's Export of Services: Income Elasticity of Export Demand

To assess the implication of the global economic crisis on the external demand for services, we estimated the income elasticity of export demand for the aggregated services and some of the disaggregated services for which data is available.

3.3.1   Existing Literature

Global demand plays an important role in determining the export growth of a sector. As global incomes rise, the demand for normal and luxury products/services rises, while the demand for inferior products/services declines. The income elasticity of demand for luxury products is expected to be greater than one, while that for normal goods is expected to be between zero and one. The kind of products/services a country exports, i.e., the income elasticity of demand of the product/services, is an important factor that determines the impact of external demand shocks, like global economic crises, on the country's exports. Along with income elasticity, price competitiveness may also determine the impact of global economic crises on exports. If the exported services are less price-sensitive, during an economic slowdown, the option of lowering prices to maintain market shares may not be feasible.

There exists a vast bulk of literature estimating income/price elasticities for the export of goods, but very few studies exist, especially for developing economies, that estimate the income elasticity for the export of services. Even fewer studies exist that estimate the income elasticity for Indian services exports. The small number of empirical time-series studies that exist on the determinants of the United States (US) export of services largely model export volumes in terms of foreign income and the real exchange rate. These studies all show that conventional models of merchandise trade can be applied successfully to the trade in services, as argued by Van Welsum (2003a). Recent examples of these studies include Huang and Viana (1995), Wren-Lewis and Driver (1998), Deardorff et al. (2000), Ansari and Ojemakinde (2003), and Mann (2004).

Most of these studies have found that the income elasticity of demand is above unity, while relative price effects are comparatively small to those typically found for merchandise trade. For example, Wren-Lewis and Driver (1998) used a number of different estimation techniques and found that the income elasticity of demand for the aggregate volume of exports of services in the

US lies in the range 1.50–1.95%, while the relative price elasticity lies in the range –0.21% to –0.40%. The findings of Huang and Viana (1995), Deardorff et al. (2000), and Mann (2004) raise the possibility of heterogeneous income and price elasticities for different categories of exports of services, although none of these studies seek to test this explicitly. Huang and Viana (1995) and Deardorff et al. (2000) both find much higher income and price elasticities of demand for passenger fares and other travel-related exports, than for other categories of service exports. In a panel-data analysis of sub-categories of business and technical services, Mann (2004) reports that relative price elasticities are typically insignificant and, in some cases, are not negative as expected.

Empirical evidence of low price-elasticity and high income-elasticity of export demand in general has important implications for exports from developing countries. Firstly, it suggests that the export growth of developing countries is highly dependent on the economic performance of developed countries. Secondly, it implies that developing countries may have limited ability to lower prices to maintain or increase exports.

It has been recognized in the literature that the higher the income elasticity of export demand, the more powerful exports will be as an engine of growth (See Houthakker and Magee (1969), Goldstein and Khan (1985) . Senhadji and Montenegro (1999) found that the Asian countries had the highest estimated values for income elasticity among the developing and industrial countries. This advocated the view that exports have been a powerful engine for growth in the Asian region. This has an important implication: the higher the income elasticity of export demand, the more severe will be the impact of a slowdown in growth of GDP on developing countries exports and growth.

To estimate the likely impact of a slowdown of global GDP growth on export demand for India's services, we estimate income elasticities for aggregate services exports and exports of travel services, transportation services, financial services, and software services.[3] We use time-series data from 1970–2008.

3.3.2 Methodology and Data

To assess the impact of a slowdown on India's exports, we estimate the standard export demand equation for India using data from 1970–2008. According to the standard export demand function, exports depend on price competitiveness as measured by the real exchange rate, and on global income as measured by global GDP.

To measure relative price, it is necessary to look at price and exchange rate data. The volume of exports depends on nominal exchange rates after adjusting for the domestic level of inflation,[4] through which, we arrive at the real effective exchange rate (REER). Real exports of services are arrived at by deflating nominal exports with the GDP deflator. World GDP in real terms captures the income effect. The estimated model is as follows:

$$LNEXPSER_{INDIAt}^{d} = \alpha_1 + \alpha_2\,LNGDP_{WORLDt} + \alpha_3\,LNREER_t + u_t \;\ldots\ldots\ldots\ldots\ldots(1)$$

t = 1970 to 2008

Where $LNEXPSER_{INDIA}$ is the log of real exports of Indian services to the world, $LNGDP_{WORLD}$ is the log of real world GDP, and $LNREER$ is a product of effective exchange rate and relative prices. The data for the world GDP at current and constant prices is taken from World Development Indicators, the exchange rate is taken from the Economic Research Service's

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[3]   The choice of services sectors was governed by the availability of data.

[4]   Real exchange rate (R) = nominal exchange rate (e) × foreign price (p*)/domestic price (p). The nominal exchange rate is measured as domestic currency per unit of foreign currency.

International Macroeconomic Data Set, and India's export of services is taken from the Reserve Bank of India. Equation 1 is estimated for aggregate services exports and separately for exports of travel services, transportation services, financial services, and software services. However, since data for software services to the world for this period is not available, the estimations are undertaken for imports of US software services. Data was extracted from the Organisation for Economic Co-operation and Development's database for services. The equation estimates the income elasticity of exports of software services to the US. These results are indicative, as 60% of the total exports of India's software services are directed towards the US.

We followed the standard procedure in the literature to check for unit roots in each series before estimating a model that involves time-series data. If there was a unit root, then that series was considered to be non-stationary. The stationarity of each series was tested using the following unit root tests: (a) Augmented Dickey–Fuller test; and (b) Phillips–Perron test. Since regressions have been run for aggregate exports as well as sector-specific exports, we have undertaken the tests separately. The results of the tests are reported in Annex I. We found that most of the series used are stationary at levels. Wherever we found that a contained the unit root in levels, but no unit roots in first differences, we have used the popular Engle and Granger (1987) method to estimate the export demand functions. According to Engle and Granger (1987), it is possible to have a linear combination of these non-stationary variables that is stationary. Two estimation steps were carried out. First, the best possible linear equation—as shown in equation (1)—was estimated and residuals were collected. Then a unit root test was used to test whether residuals were stationary. We found that they are indeed stationary, which implies that there exists a long-run equilibrium relationship, and, therefore, a meaningful regression estimate can be carried out.

3.3.3   India's Income Elasticity of Total Exports of Services

To examine the likely impact of a slowdown of the world GDP growth on India's export growth of services, we estimated the above equation (equation 1) for exports of disaggregated services, transportation services, travel services, and financial services to the world, and the export of software services to the US. Table 4 presents the results of the estimations.

Table 4: Income Elasticities of India's Export Demand

Service	Income Demand Elasticity for Exports of Services	Price Elasticity for Exports of Services
Aggregate Services	3.22*	(0.56)**
Transportation Services	1.98*	(0.57)*
Travel Services	3.54*	(0.95)*
Financial Services	2.37*	(0.64)
Software Services	6.04*	(0.23)

* Figure is statistically significant at 1% level of significance.

** Figure is statistically significant at 5% level of significane.

Source: Authors' estimations.

The results show that India's exports of aggregated services to the world are much more responsive to income changes than to price changes, although both factors are found to be significant. A 1% decline in world GDP growth will lead to a 3.22% decline in India's growth of exports to the world. However, a much higher price competitiveness is required to increase

exports. It should be noted that the price elasticity inter-alias captures the effect of currency depreciation and the lowering of relative prices. This implies that it will be very difficult to increase India's export growth through improvements in its price competitiveness.

As found by other studies, there exists a large difference in income elasticities of different services exports. The highest income elasticity of exports to the world is for travel services, which is consistent with other studies (Huang and Viana 1995; Deardorff et al. 2000). The income elasticity for US transportation services is found to be higher than 1 but much lower than that for travel services exports. Financial services exports have an income elasticity of 2.37, which implies that as growth of the global GDP rises, India's export of financial services will rise more than proportionately.

The income elasticity of India's export of software services to the US is found to be the highest at 6.04. A few other studies on the export of IT services have also found very high income-elasticities. According to the estimates by Nomura (2009), the income elasticity of demands for India's export of business services and ITeS-BPO services to the Organisation for Economic Co-operation and Development member countries were as high as 9.6 and 7.1, respectively. The high income-elasticity of India's export of software services explains to a large extent the exponential growth in its exports post-2000.

3.4 Export of India's Services: Implications of the Global Economic Crisis

The high income-elasticities of India's export of services imply that a slowdown in the growth of the global GDP will have a far-reaching impact on the external demand for India's exports. The global economic crisis arrested the stupendous growth of India's exports of services. The growth of exports of total services decreased from 28% in 2006–07 to 12.4% in 2008–09. To analyse the extent to which the global economic crisis affected the growth of services, we examined the annual and quarterly trends in the export of services, especially those that have been identified as having a high income-elasticity for exports.

Examining the growth of exports of disaggregated services (Table 5), we find that in 1993–00, the fastest growing export of services was for government services (not included elsewhere) followed by miscellaneous services (including both software and non-software services). However, in 2000–08, there was a substantial rise in the compound annual growth rate of exports of travel services (15.8%), transportation services (21.96%), insurance services (25.29%), and software services (26.01%).

Table 5: Growth of India's Exports of Disaggregated Services

	Invisibles by Service Export of Transactions					
	CAGR 1993-00	2000-01	2003-04	2006-07	2007-08	CAGR 2000-08
Travel	4.56%	3,497	5,037	9,123	11,349	15.85%
YoY Growth		*15.18%*	*52.08%*	*16.17%*	*24.40%*	
Transportation	2.57%	2,046	3,207	7,974	10,014	21.56%
YoY Growth		*19.86%*	*26.46%*	*26.07%*	*25.58%*	
Insurance	9.29%	270	419	1,195	1,639	25.29%
YoY Growth		*16.88%*	*13.55%*	*12.52%*	*37.15%*	
G .N .I .E	52.75%	651	240	253	330	-8.14%
YoY Growth		*11.86%*	*-18.09%*	*-19.43%*	*30.43%*	
Miscellaneous of which:	31.99%	9,804	17,935	55,235	66,745	27.09%
YoY Growth		*-3.44%*	*26.04%*	*31.18%*	*20.84%*	
Software		6,341	12,800	31,300	40,300	26.01%
YoY Growth			*33.33%*	*32.63%*	*28.75%*	
Total	16.91%	16,268	26,868	73,780	90,077	23.85%
YoY Growth		*3.56%*	*29.40%*	*27.96%*	*22.09%*	

CAGR = Compound Annual Growth Rate, GNIE = Government Services, Not included elsewhere, YoY = Year on Year.

Note: Government services not included elsewhere. Figures in US$ million.

Source: Reserve Bank of India, Handbook of Statistics, 2008-09

Exports of software and ITeS increased to US$40.3 billion in 2007–08 compared to US$6.3 billion in 2000–01. Out of the US$40.3 billion in 2007–08, US$29.4 billion constituted IT services exports, while US$10.9 billion constituted ITeS-BPO services (Table 6).

Table 6: Exports of Software Services, 1995–96 to 2007–08

Indian Software Services Exports (US$ million)			
Year	IT Services Exports	ITeS-BPO Exports	Total Software Services Exports
1995–96	754	—	754
1999–00	3,397	565	3,962
2000–01	5,411	930	6,341
2001–02	6,061	1,495	7,556
2002–03	7,100	2,500	9,600
2003–04	9,200	3,600	12,800
2004–05	13,100	4,600	17,700
2005–06	17,300	6,300	23,600
2007–08	29,400	10,900	40,300

IT = information technology, ITeS-BPO = information technology-enabled services and business processing outsourcing.

Source: National Association of Software and Service Companies.

Growth in software services, which constitutes close to 50% of India's export of services, has shown remarkable resilience to the global slowdown in demand. It should be pointed out that cost cutting becomes a priority in times of economic deterioration. This may make outsourcing more attractive.

The banking, financial, and insurance sector, which has been the epicenter of the global economic crisis, accounts for approximately 50% of the revenues of IT and ITeS providers. This makes IT and ITeS highly vulnerable to the global slowdown in terms of delayed decision making and reductions in IT spending by customers of frontline IT companies. Given these vulnerabilities and the heavy dependence on only a few markets (the US and UK account for 80% of the market), it is remarkable that the Indian IT-BPO sector was able to achieve a growth rate of 28.7% in 2007–08, although this is lower than its growth rate of 32.6% in 2006–07.

Figure 6 shows the year-on-year growth rate of disaggregated services during the global economic crisis. Most of the services sector experienced a decline in the growth rate of exports in 2008–09, except for the financial services, which experienced a rise in its export growth. Travel, insurance, business services, and communication services all experienced a negative export growth.

Figure 6: Growth Rate of India's Exports, 2007–08 to 2008–09

Growth Rate (YoY) of India's Exports of Disaggregated Services
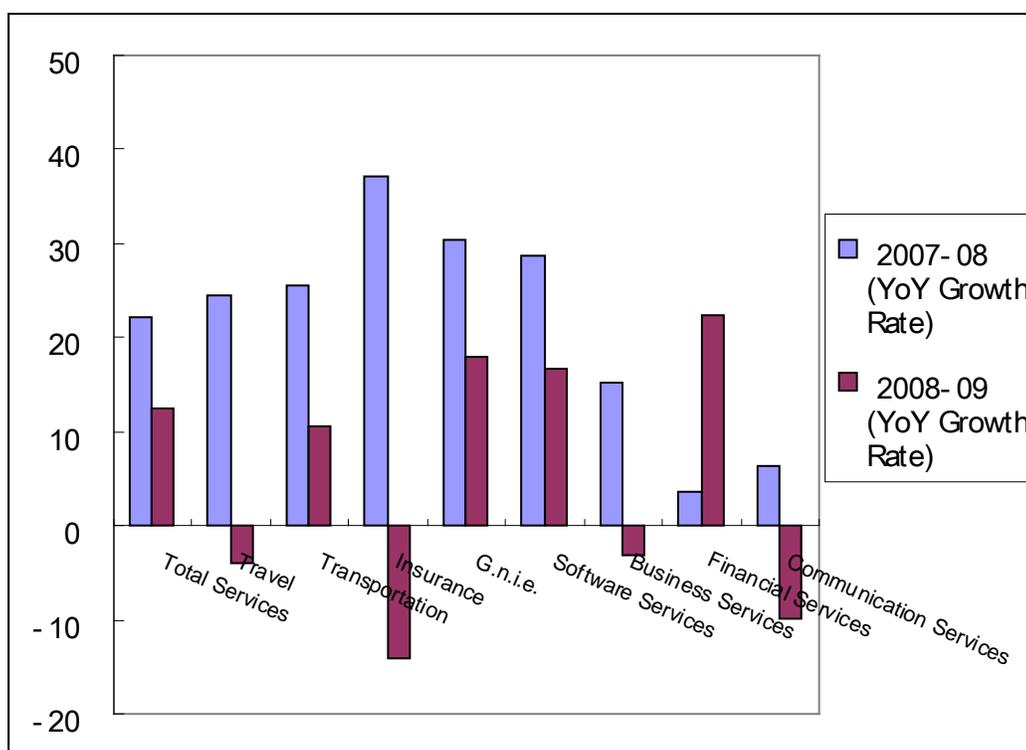
GNIE = Government Services, Not included elsewhere, YoY = year-on-year.

Source: Reserve Bank of India, Handbook of Statistics, 2008-09

Although the rate of growth of software services decreased from 26% in 2007–08 to 16% in 2008–09, it continues to remain positive and relatively high. The positive annual growth in India's export of software services shows that despite the global economic crisis leading to a fall in the export growth of software services, growth has still remained at around 16% in 2008–09. Quarterly trends (Figure 7) show the fall in export growth more clearly. Comparing the quarterly growth in 2008–09 to the same quarter in the previous year we find that since Q3 2008–09, the decline in the export of services has been sharp. The growth rate in total services exports became negative in Q4 2008. Most of the services exports experienced a negative growth rate, with the largest decline being in the communication services, followed

by the insurance and travel services. The decline in the software services has not been as large as in the other services.

Figure 7: Quarterly Growth in Exports of Services, 2008–09

Quarterly Growth in 2008–09 vis-à-vis the Same Quarter in 2008–09
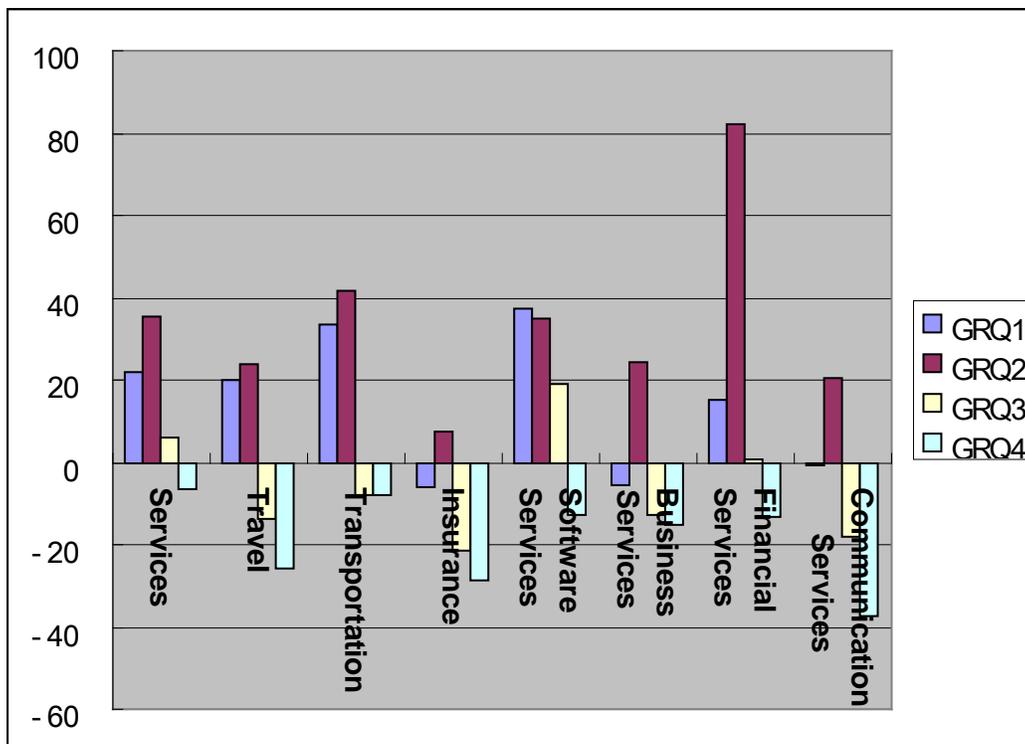
GRQ = Growth Rate Quarter.

Source: Reserve Bank of India, Handbook of Statistics, 2008–09.

Within the software services, according to the National Association of Software and Services Companies (2009), Indian IT-BPO grew by 12% in FY2009 to reach US$71.7 billion in aggregate revenue. Software services exports (including exports of IT services, BPO, engineering services and research and development [R&D], and software products) reached US$47 billion, contributing nearly 66% to the overall IT-BPO revenue aggregate.

One of the reasons for the growing demand for Indian IT-BPO services is that although the US (60%) and the UK (19%) remained the largest IT-BPO export markets in FY2008, the industry footprint is steadily expanding to other geographies. Exports to Continental Europe in particular are growing at a compounded annual growth rate of more than 51% over FY2004–08. The industry's vertical market exposure has been well diversified across several mature and emerging sectors. Banking, financial services, and insurance remained the largest vertical market for Indian IT-BPO exports, followed by hi-tech/telecom, which together accounted for 61% of the Indian IT-BPO exports in FY2008. All this contributed to the favorable export growth of software services, which in turn limited the impact of the global economic crisis on exports of India's software services.

4. THE GLOBAL ECONOMIC CRISIS AND THE ROLE OF DOMESTIC DEMAND FOR INDIA'S SERVICES

The analysis in the previous section shows that the global economic crisis has adversely affected the growth rate of the export of almost all services. Despite this, the growth rate of most of the services has remained positive leading to an increase in the contribution of the services sector to the total GDP from 63% in 2007–08 to 65% in 2008–09. One of the probable reasons for this growth in the sector's contribution despite the decline in exports is growing domestic demand, which accounted for 77.6% of the services sector's growth.

Hallmarks of the robust growth of the Indian economy in 2003–08 have been robust domestic demand and a low share of external demand. This has provided the economy an in-built resilience to external demand shocks, especially in the services sector. The contribution of private consumption to GDP growth increased from 46.3% in 2005–06 to 53.8% in 2007–08 (Table 7). Government consumption contributed a much smaller part to the domestic demand, which increased from 7.1% in 2005–06 to 8.0% in 2007–08. However, in 2008–09, due to the movement of the global economic crisis into real sector growth, the contribution of private consumption to GDP growth fell drastically to 27%. This decline was cushioned by a substantial 32.5% increase in the contribution of government consumption to aggregate growth. In 2008–09, the contribution of domestic demand to aggregate growth of GDP, therefore, increased from 44.5% in 2007–08 to 59.5% in 2008–09; while external demand, as seen by the net export of goods and services as a percentage of GDP, decreased from –4.6% in 2007–08 to –6.05 in 2008–09.[5] Thus, even in the face of a drastic fall in external demand, the fall in GDP growth was moderated.

Table 7: Contribution of Domestic Demand and External Demand to GDP growth

	Growth of GDP					
	2003–04	**2004–05**	**2005–06**	**2006–07**	**2007–08**	**2008–09**
GDP at market t prices	8.4	8.3	9.3	9.7	9.1	6.1
Consumption (pvt.)	5.9	5.2	7.1	6.3	8.5	2.9
Consumption (Govt)	2.6	3.6	6.2	5.5	7.4	20.2
Gross capital formation	17.6	21.8	19.5	13.2	14.7	na
Gross fixed capital formation	13.6	18.9	17.6	14.5	12.9	8.2
Change in stocks	-8	140.1	61.9	5.4	51.7	2.9
Exports	9.6	27.2	17.6	21.1	2.1	12.8
Imports	13.8	22.2	41.1	24.5	6.9	17.9
Contribution to growth (per cent)						
Consumption (pvt.)	45.1	38.8	46.3	38.7	53.8	27
Consumption (Govt)	3.6	4.8	7.1	5.8	8	32.5
Gross capital formation	52.4	71.3	63.8	45.6	55.7	na
Gross fixed capital formation	38.4	56.4	51.3	43.9	43.6	42.5
Net exports	-6.3	10.1	-41.1	-13.2	-14	-29.5
Relative share (per cent)						
Consumption (pvt.)	62.3	60.5	59.3	57.5	57.2	55.5
Consumption (Govt)	11.1	10.6	10.3	9.9	9.8	11.1
Gross capital formation	27.1	30.5	33.3	34.4	36.2	na

GDP = gross domestic product, pvt. = private, Govt. = Government.

Source: Economic Survey 2009–10.

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[5]Macroeconomic and Monetary Developments, First Quarter review 2009–10, RBI.

Regarding the role played by domestic demand in building the resilience of the Indian services sector growth, it can be seen that there has been only a marginal decline in the growth of private final consumption expenditure for services like transport and communication in 2007–08 as compared to 2006–07; while private final consumption increased for services like medical care and health services, recreation, education and cultural services, and miscellaneous goods and services.[6]

Domestic demand also provided much-needed support for the growth of the ITeS and BPO services. Software and services exports are expected to have reached US$47 billion and the domestic market is expected to have reached US$12.6 billion in FY2009 (Figure 8).

Figure 8: Total Revenue (from Domestic and External sources) of Indian IT Services

Indian IT industry revenue
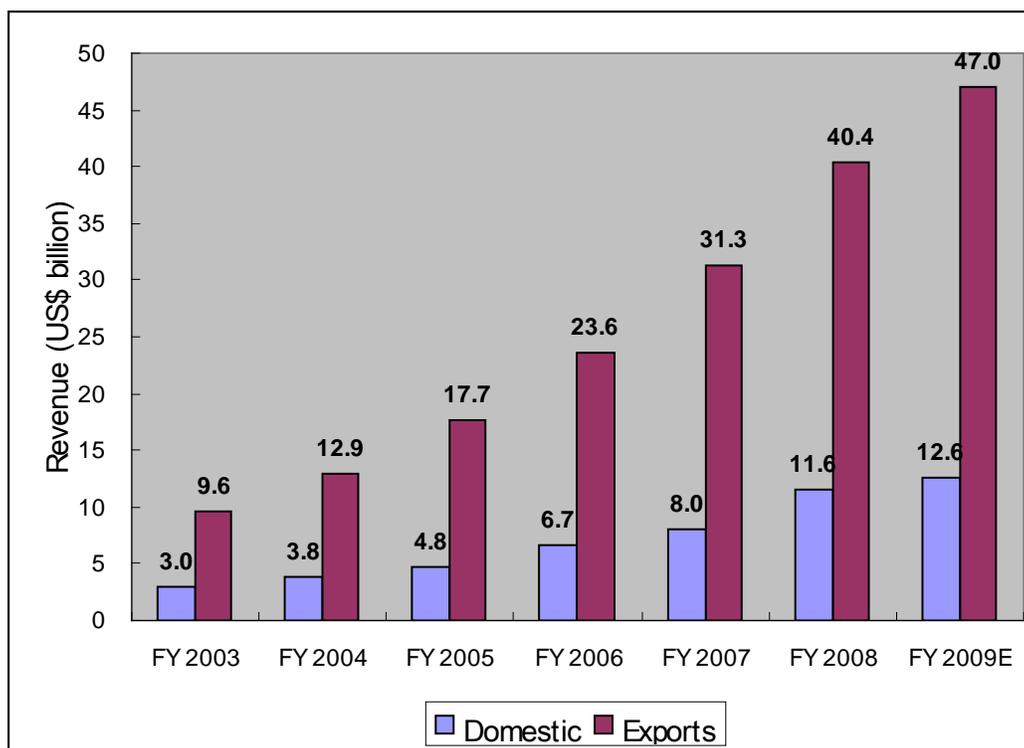
E = Estimated, FY = fiscal year, IT = information technology.

Source: NASSCOM, Factsheets: 2008 and 2009.

Growth of domestic consumption (year-on-year) for IT services increased from 22.2% in 2007–08 to 43.6% in 2008–09, while growth in domestic consumption for IT-BPO services increased from 22.2% in 2007–08 to 45.5% in 2008–09. However, growth in exports for both IT services and IT-BPO services decreased in this period due to the global economic crisis. Vertical segments of the IT services also witnessed a rise in their domestic demand. Growth of domestic demand for engineering and R&D and software services increased from 23.15% in 2007–08 to 30.6% in 2008–09 (Table 8). Growth in revenue from software services exports decreased from 37.2% in 2005–06 to 29.1% in 2008–09.

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[6]   See Economic Survey (2009-10), pp 5

Table 8: Growth in Domestic Demand and Exports in India's ITeS-BPO Services, 2005–2008

	FY2005	FY2006	FY2007	FY2008
IT Services (Exports)	37.0	33.0	35.3	28.3
ITeS-BPO-Domestic	100.0	50.0	22.2	45.5
Engineering Services and R&D, Software (Exports)	24.0	29.0	22.5	30.6
Engineering Services and R&D, Software (Domestic)	75.0	85.7	23.1	37.5
Total Software and Services Revenues of which, exports are	37.2	33.3	32.6	29.1

FY = fiscal year, IT = information technology, ITeS-BPO = information technology enabled services and business processing and outsourcing, R&D = research and development.

Source: NASSCOM, Factsheets: 2008 and 2009

These trends highlight the role played by domestic demand in mitigating the adverse impact of the global economic crisis on the growth of many services sectors, including those that are mainly exportable services like the IT-BPO services.

The literature supports the growing use of IT-BPO services domestically. Apart from IT-BPO, growth of domestic demand for most services increases rapidly as the economy grows. Pilat (2000) found that with the increasing complexities of modern industrial organizations, manufacturing activities have become more and more service intensive both upstream (e.g., design and R&D) and downstream (e.g., marketing and advertising). Further, he argues that the competitive advantage of firms will depend more on providing specialized services like financing and after-sales facilities than on production. This explains the increased demand for intermediate specialized services.

With respect to the developing economies, the rise in service inputs into manufacturing has been confirmed by a number of empirical studies, including Park (1989), Park and Chan (1989), and Uno (1989); however, very few studies have empirically estimated the extent of increase in the use of services in the manufacturing sector. In the Indian economy, Gordon and Gupta (2004) measured the increasing usage of services in other sectors through changes in input–output coefficients. The matrices for different years show that the use of services sector input to industry increased by about 40% between 1979–80 and 1993–94.

The increased usage of services by the manufacturing sector was estimated by Banga and Goldar (2004) for the 1980s and 1990s. For this purpose, they empirically estimated the contribution of services as an input to manufacturing (organized) output growth in Indian manufacturing using the KLEMS (capital, labor, energy, materials, services) production function. The results of the analysis demonstrated that the use of services had a significant favorable effect on the growth of output from Indian manufacturing in the 1990s. The contribution of service input to output growth in manufacturing was about 1% in the 1980s, and it increased to about 25% in the 1990s.

5. ROLE OF PRODUCTIVITY GROWTH IN INDIA'S SERVICES SECTOR

The resilient growth of India's services sector and the sector's increasing contribution to GDP growth during the global economic crisis can be explained to a large extent by the increasing domestic demand for services. However, the mere presence of demand is not sufficient for a sector to grow. Also of importance are the supply-side factors that allow the expansion of output

to meet the existing demand. Productivity growth is an important factor that enables sectors to grow steadily and increase their share of the total GDP. Using firm-level data, an attempt has been made to estimate productivity growth in services firms in India in three sectors: retail/wholesale trade, software services, and banking services. It must be noted, however, that a very limited amount of literature exists that estimates productivity growth in services through the identification and measurement of the outputs and inputs of services sectors, and the literature that does exist is generally beset with conceptual problems.

5.1   The Debate on Services Versus Goods Productivity

It has been argued in the literature that services are less productive than goods. In response to Kaldor (1966), who emphasized that labor in the non-manufacturing sector is less productive, many studies have attempted to examine the lagging service sector productivity. Baumol (1967) points out that productivity improvements in services are harder to achieve than in goods producing industries. The unbalanced growth models by Baumol and Fuchs (1968) helped in popularizing the notion that because of their labor-intensive nature, service-sector activities cannot be made more efficient through capital accumulation, innovation, or economies of scale.

However, some of the studies argue that through the creation of new ways of satisfying wants, technological changes are as important in service sectors (such as health care) as in commodity sectors, but when it comes to cost reduction for existing products or services, technological change is more frequent and more powerful in its effects in the commodity sector. Therefore, service-sector productivity relative to commodity-sector productivity may vary inversely with the income level of the country (Kuznets 1955; 1966; Chenery and Syrquin 1975; Bhagwati 1984; Kravis et al. 1983). In other words, between poor and rich countries, the productivity differential in services is found to be lower than that in commodities.

Lower productivity in services compared to goods implies that a shift in the economy towards a larger service sector could lead to a reduction in the national rate of productivity improvement. However, these notions have led to alternative arguments for the lower productivity in services. Two important arguments put forward are (i) greater investment has been made in new technology in the service sector and this may take time to lead to productivity enhancement, and (ii) low services productivity is a product of the mis-measurement of services output, since an increasing portion of output is not captured in the basic statistics. Some studies have also attributed lower productivity in services to a lack of competition in the service sector (Fingleton 1995). A higher level of regulation in services, including foreign investment controls and less exposure to foreign trade, are important reasons for the lower competition in services.

5.2   Problems in Measuring Services Productivity

A key problem in measuring productivity relates to obtaining a suitable measure of output of services over time. Griliches (1994) points out that some of the services whose productivity growth rates in the 1947–73 era were as high or higher than productivity growth in the manufacturing industries have experienced a much lower productivity growth since 1973. Additionally, studies have found productivity slowdown particularly intense in services where output is hard to measure. For example, health services have had the largest labor productivity slowdown in the services sector, and both the banking and health services have had large multifactor productivity slowdowns. This points to the possible problem of mis-measurement, since in both the banking and health services, it is very hard to define and measure output.

The problems identified in the literature that lead to mis-measurement are that
(i)   market prices are not available for publicly provided services,

(ii)   it is difficult to identify precisely what constitutes a service activity in a particular industry and to account correctly for the quality changes in the services. This is further complicated due to inappropriate deflators that are not able to distinguish between quality improvements,

(iii)   the "quantity" of services is difficult to capture, as it often represents a process by which a user (consumer) or the user's good is changed (Hill 1977),

(iv)   compared to goods many services are characterized by a greater degree of heterogeneity (even uniqueness) so it is difficult to aggregate them, and

(v)   the quality of data on the services is poor.

Apart from the problems in the measurement of output and labor input, it is also recognized that there is no overall theme to the measurement problems in the different services. Specific measurement problems appear to be unique to the services measured.

5.3 Measurement of Total Factor Productivity Growth in Key Services

Due to the role played by productivity growth in the services sector, we have estimated TFPG in some of the key services in India and provide policy recommendations for improving the productivity and efficiency of these services. The services examined are those that have a high share in the total services output and those that are also contributing to the growth of the services sector. If productivity rises in these services, the potential gains to the economy could be very high, as these services in turn will improve productivity growth in the other sectors in which they are widely used. The services examined are trade (retail/wholesale), software services, and financial services. A firm-level analysis was undertaken to estimate TFPG over time in these sectors.

Given the nature of the retail services in India where only 2% of retail activities are undertaken in the organized sector, and the fact that data are only available for a very low number of organized retail firms, undertaking productivity growth estimates for India at the firm level has been avoided. However, broad policy directions for improving the efficiency of the sector are given. For software services, a firm level analysis was undertaken for 18 IT firms for the period 1994–95 to 2007–08 (14 years). For banking services, TFPG has been estimated for 67 banks for the period 1998–1999 to 2007–08 (10 years).

5.3.1 Productivity Measurement: Methodology Adopted

Productivity growth in most of the services is either estimated using labor productivity estimates, i.e., output measured per unit of labor employed, or by constructing multifactor productivity indices. Calculations of multifactor productivity take into account capital inputs as well as employment and hours worked. Many studies have found that the multifactor productivity data is broadly consistent with the labor productivity numbers, (e.g., Maclean 1997), but the multifactor productivity indices are considered to be superior as they relate to total factor productivity (Worthington 1999).

Most of the studies in the current literature use DEA, which is a linear programming methodology that constructs a nonparametric, piecewise-linear, best-practice frontier from observable input and output data to measure productivity in different services sectors. Using DEA, Malmquist indices are estimated to arrive at total factor productivity.[7] This index is a valuable tool since it allows for the decomposition of productivity into two components: innovation and imitation. Innovation, which is also referred to as technological change, captures any expansion of the production possibilities frontier. Imitation captures the convergence of firms toward the existing technology; this

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[7]In this study, DEAP: Version 2.1 (written by Tim Coelli) was used.

phenomenon is also called efficiency change or catching up. DEA has been most widely used for estimating productivity in services sectors.

One reason for preferring DEA to other approaches is that DEA does not require a preconceived structure or specific functional form to be imposed on the data in identifying and determining the efficient frontier, error, and inefficiency structures of the firms. Hababou (2002) further adds that it is better to adopt the DEA technique when it has been shown that a commonly agreed functional form relating inputs to outputs is difficult to prove or find. Such specific functional form is truly difficult to show for the sectors analyzed, which are financial services entities, IT firms, and hospitals. Avkiran (1999) acknowledges the edge of DEA by stating that this technique allows the researchers to choose any kind of input and output depending on the objective of the exercise, regardless of different measurement units—there is no need for standardization. However, the main weakness of DEA is that it assumes the data are free from measurement errors. Furthermore, since efficiency is measured in a relative way, its analysis is confined to the sample set used. This means that an efficient firm found in an analysis cannot be compared with other firms outside of the sample.

5.3.2   Productivity Growth in IT firms

Given the significance of the IT sector in the aggregate services sector, both in terms of domestic and external demand, an attempt has been made to estimate change in TFPG using a panel of 18 firms for the period 1994–95 to 2007–08 (14 years). Since the objective is to analyze whether there has been an improvement in productivity growth over time, a long time period has been selected. To arrive at a balanced panel, the number of firms was limited.8 Data was extracted from the Capital Line database, which provides data for all listed firms in India.

DEA enables examination of sources of productivity growth, i.e., whether total factor productivity has increased due to technological progress (technical change or innovation) and/or due to pure efficiency improvements and/or scale economies. For estimating productivity, total income was used as the output; the number of employees and the expenditure on plants, machinery, and buildings were used as the inputs. The results of the estimations are reported in Table 9.

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[8]Most of the big IT firms are I the sample, e.g., Hewlett-Packard, Wipro, Satyam, etc.

Table 9: Malmquist Indices for TFPG in IT firms in India

Year	Malmquist Indices (TFP)	Change in Technology	Change in Pure Efficiency	Change in Scale
1995–96	0.4364	0.0444	1.1203	0.272
1996–97	0.5931	0.0698	0.9746	0.5487
1997–98	0.6108	0.7473	0.9273	0.9363
1998–99	1.0867	0.5411	1.3126	1.2330
1999–00	0.7603	0.8774	0.9760	0.9069
2000–01	1.2369	1.2167	0.9273	1.0930
2001–02	1.9272	2.2118	0.9341	0.7813
2002–03	1.1584	1.2123	0.9978	0.9483
2003–04	1.2587	0.9545	1.2892	1.0150
2004–05	1.7232	1.6808	1.3962	0.6462
2005–06	1.5249	0.4714	1.2354	1.8182
2007–08	0.5736	0.7905	0.7234	1.0597
Annual Growth (1995–00)	(33.4)%	(74.4)%	5.34%	(3.01)%
Annual Growth (2000–08)	27.3%	13.34%	3.92%	(0.42)%

IT = information technology, TFP = total factor productivity, TFPG = total factor productivity growth.

Note: 1.0000 indicates no change in productivity growth, so 1.0188 would indicate 1.8% TFPG.

Source: Authors' Calculations

Table 9 summarizes productivity change results. The results show that in 1995–98, productivity was declining. Productivity increased by 8.6% in 1998–99. IT firms experienced a rapid increase in productivity after 1999–00 and experienced an annual productivity growth of 27.3% in 2000–2007.

Much of the change in TFPG post-2000 can be explained by technological change and innovation. Productivity due to efficiency improvements increased by an average annual growth rate of 3.92%, while productivity due to technical change and technological progress increased by 13.3%. The scale effect was relatively less important for improving productivity.

Overall the results indicate that productivity growth has been an important factor in the growth of software services in India, especially post-2000. The global economic crisis led to a fall in productivity in 2007–08, which was possibly due to excess capacity because of the fall in external demand.

5.3.3   Productivity Growth in Banks

Given the significance of the banking sector in the aggregate services sector, an attempt has been made to estimate the TFPG of banks using a panel of 67 banks for the period 2003–04 to 2007–08 (10 years). Data was extracted from the Capital Line database, which provides data for all the listed firms in India.

Banks are typically multi-input and multi-output firms. As a result, defining what constitutes input and output is fraught with difficulties, since many of the financial services are jointly produced and prices are typically assigned to a bundle of financial services. Additionally, banks may not be homogeneous with respect to the types of output actually produced. Given these limitations,

following one of the common approaches used in the literature (e.g., Berg et al. 1993), loans, advances, and deposits were used as the outputs, and labor and capital (plants and machinery) were used as the inputs. A summary of the results is reported in Table 10.

The results show that total factor productivity in banks grew at an annual growth of 11.27% in the period 1999–08. In 2007–08, there was a fall of 19% in productivity from the previous year. Productivity growth in banks can be explained by a mix of factors, such as technological change (5.46% annual growth), efficiency improvement, and scale economies (2% annual growth).

Table 10: Malmquist Indices for TFPG in Banks in India

Year	Malmquist indices (TFP)	Change in Technology	Change in Pure Efficiency	Change in Scale
1999–00	0.9136	0.7443	1.0455	1.1238
2000–01	1.2564	1.2211	1.0136	1.0228
2001–02	1.2173	1.1796	1.0318	1.0059
2002–02	0.9680	0.9910	0.9804	0.9966
2003–04	1.4411	1.5113	0.9444	0.9854
2004–05	1.1159	0.8182	1.2331	1.0646
2005–06	1.1524	1.1431	0.9777	1.0317
Annual Growth	11.27%	5.46%	2.19%	2.20%

TFP = total factor productivity, TFPG = total factor productivity growth.

Source: Authors' Calculations

Indian banks have been gradually deregulated and two major factors have been at work: a significant shift in the best-practice frontier, which was driven by a combination of technological advances, financial innovation, and different strategies suited to each bank's business philosophy and risk–return profile; and the changing composition of banks' input–output and reduction in total cost due to improvements in overall efficiency. While it is difficult to pinpoint the exact relative mix of these factors in raising productivity, the conclusion is clear: post-2000, Indian banks have witnessed significant productivity improvements.

6. GROWTH REBALANCING: ROLE OF GOVERNMENT POLICIES

The analysis in the earlier sections highlights the services sector role in sustaining the growth rate of the Indian economy during the global economic crisis and the sectors role in building the resilience of the economy. Due to the growing contribution of the sector to GDP and its rising productivity, the services sector has emerged as the most dynamic sector in the economy. Many factors contributed to sustaining the growth of the services sector during the global economic crisis. The low ratio of services exports to GDP and the limited direct exposure of Indian banks to the US mortgage market and stressed international financial institutions considerably reduced the direct impact of the crisis.

Growing domestic demand provided a much-needed cushion to the falling external demand of the last two years. Much of this domestic demand was engineered by an increase in government final consumption when both private final consumption and investments decelerated. The rise in government consumption came in the form of four fiscal stimulus packages. These packages included tax reliefs to boost demand and increased expenditure on public projects to create

employment and generate growth in the economy. This has led to an increase in fiscal deficit from 2.7% of the GDP in 2007–08 to 6.2% of the GDP in 2008–09.

Apart from counteracting falling private consumption by increasing its expenditure, the Indian Government's response to the global economic crisis can been seen at various other levels. A number of monetary easing and liquidity enhancing measures have been undertaken, including reductions in the cash reserve ratio, statutory liquidity ratio, and other key rates. The objective has been to ease liquidity in the economy and boost consumer and investor confidence. To fulfill social objectives during the crisis, the government increased its expenditure on social services. The share of social services expenditure in total government expenditure increased from 19% in 2002–03 to 22% in 2007–08, and then further to 24% in 2008–09, of which 11% was spent on health and 5% on education.

In order to maintain the growth-enhancing role of the services sector it becomes important to ensure that the services that contribute relatively more to growth are placed on a higher productivity trajectory. The services identified as a priority by our analysis are software services, domestic trade (retail/wholesale distributive services), and financial services. For these services, a roadmap of specific policies needs to be drawn, not only to support their growth during periods of crisis, but also for accelerating their growth rate in the future. These sectors have shown a remarkable resilience despite relatively less support compared to other sectors. Efforts are required to improve both demand-side and supply-side factors in these services sectors. On the demand side, specific policies are required to improve domestic and external demand, and on the supply side, targeted policies are required to boost productivity growth.

6.1   Distributive Trade (Retail/Wholesale)[9]

Distributive trade is an important sector for India as it has the potential to provide employment to a large proportion of the population and significantly contributes to the GDP. However, 98% of trading activities are carried out in the unorganized segment of the economy. A significant impediment in policy formulation in this sector is that the statistics of this segment have not been adequately developed and are lacking in quality, comparability, and timeliness. There is no regular flow of data either from official sources or through annual surveys. As a result, estimates vary widely about the true size of retail business in India.

According to Central Statistics Office estimates, total domestic trade, both wholesale and retail, constituted about 15.1% of India's GDP in 2006–07, an increase from 13% of the GDP in 1999–00. The National Sample Survey Organization's *Employment and Unemployment Survey* for

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[9]   The term distributive trade refers to wholesale trade and retail trade that can be defined as an act of purchase of goods and their disposal by way of sale without any intermediate physical transformation of goods. This includes commission agents, commodity brokers and auctioneers, and all other wholesalers who trade on their own behalf and on the account of others. Retail trade covers units that mainly resell without transformation new and used goods for personal or household consumption. The terms wholesale trade and retail trade have comprehensively been defined in section G of the National Industrial Classification (NIC)-2004, which is based on International Standard Industrial Classification Rev.3.1. For national accounting in India, distributive trade activities form the part of the service sector other than public administration and finance. This sector covers a wide range of economic activities. Besides the sectors of trade, hotel and restaurant, transport, storage, communication, real estate and ownership of dwellings, banking, and public administration, it also covers the sectors of business services and 'other services'. Business services include business accounting, software development and data processing, business and management consultancy, advertisement, and other business services. The sector 'other services' comprises education, research & scientific services, medical and health services including veterinary services, sanitary services, religious and other community services, recreation and entertainment services, and personal services like domestic, laundry, dyeing and dry cleaning, and barbers and beauty shops.

2004–05 reports employment in the retail trade of around 35.06 million, which constituted about 7.3% of the workforce (459 million). The corresponding retail employment was about 30.62 million in 1999–00, which means that an additional 4.44 million jobs were added to this sector in the five-year period, 2000–05, showing an annual employment growth of 2.7% per annum. Wholesale trade, on the other hand, contributed 5.48 million jobs. Indian retail is dominated by a large number of small retailers consisting of the local *kirana* shops, which together make up the so-called "unorganized retail" or traditional retail, with a gradually rising organized retail sector. The total number of organized retail outlets rose from 3,125 in 2001 (covering an area of 3.3 million sq. ft.) to 27,076 in 2006 (covering an area of 31 million sq. ft.).

The impact of the global crisis on the retail/wholesale trade sector has been low. In 2007–08, the sector's contribution to GDP growth increased 1.42 percentage points, compared to an increase of 1.40 percentage points in 2006–07. This was in spite of a slight decline in the overall contribution of the services sector to GDP growth from 6.9 percentage points in 2006–07 to 6.7 percentage points in 2007–08.

6.1.1   Rising Domestic Demand and Foreign Direct Investment in Retail

The retail sector in India has steadily growing domestic demand, which is explained by a rapidly expanding middle class, sustained high economic growth during the last few years causing a rapid rise in disposable incomes, favorable demographics placing incomes on younger population with less dependency, and growing urbanization. Indian retail sales were about US$322 billion in 2006–07 (National Council of Applied Economic Research, *Market Information Survey of Households*), which amounted to about 35% of India's GDP. India is now the seventh largest retail market in the world, and the Indian retail industry is projected to grow to about US$590 billion by 2011–12 and is then to grow to over US$1 trillion by 2016–17. This implies there is huge growth potential in the country's retail sector.

Most of the retail sector activities are in the unorganized sector. In 2006–07, organized retail contributed roughly 4% to the total Indian retail sector, which is very small even compared with most of the emerging market economies. However, the scenario is fast changing. The organized retail real estate sector has grown from a miniscule 0.9 million sq. ft. in 1999 to 28 million sq. ft. in 2006. The growth until now has been rapid at over 60% per annum for the last seven years (although on a smaller base) and is expected to grow at least by 50% per annum in the next four to five years. It is estimated that organized retail will be contributing 16% to the total Indian retail sector by 2011–12. In this scenario, a lack of domestic demand may not be a serious hurdle to the growth of the retail/wholesale trade sector.

The growing retail sector in India has attracted the attention of many foreign retailers. A.T. Kearney annually ranks emerging market economies based on more than 25 macroeconomic and retail-specific variables through their Global Retail Development Index. In 2005, 2006, and 2007 India ranked number one, indicating that the country was the most attractive market for global retailers to enter. This is indicative of an untapped demand. While restrictions on foreign direct investment (FDI) have been a major deterrent to the entry of foreign retailers in this sector, there has been a calibrated liberalization over the past few years.

To facilitate easier FDI inflow, instead of having to seek Foreign Investment Promotion Board approval, FDI up to 100% is now allowed under the automatic route for cash-and-carry wholesale trading and export trading. FDI up to 51% has also been allowed with prior government approval for retail trade in single-brand products with the objective of attracting investment, technology, and global best practices, which caters to the demand for such branded goods in India. Notwithstanding these measures, restrictions on FDI in retail continue. Besides cash-and-carry wholesale trading, the commonly used channel for the entry of foreign retailers is through strategic licensing and franchising arrangements.

One of the main reasons for the government taking a cautious approach towards the opening of retail trade in India is the existing structure of the retail sector and its capacity for generating employment for unskilled labor. Since a large part of retail activity takes place in the unorganized sector, it absorbs labor across ages, skills, education level, and income class. Retailing with low capital and infrastructure needs is, to a large extent, providing a social safety-net for the economy's unemployed. This is supported by the fact that the number of self-employed workers in the retail sector is the largest category of labor.

It is widely acknowledged that FDI could benefit the sector tremendously by improving its efficiency, thereby leading to greater integration with the global market and ultimately benefiting consumers by providing price reductions and an improved selection. This may in turn lead to a higher output in the sector and greater growth. However, FDI driven modern retailing is found to be labor displacing and may generate unemployment in a sector that has in the past acted as a safety valve for the economy in terms of employment generation. Thus, in the face of large growing domestic demand, the government is taking a prudent approach towards tapping external demand.

6.1.2   Recommendations for Improving Productivity Growth in Retail

Organized retail has the potential for reducing inefficiencies and improving the productivity of the retail sector. Studies have shown that in the US, organized retail contributed one-fourth of the rise in productivity growth in the period 1995–99. However, in India, organized retail is less than 4% of the total retail sector. It is expected that organized retail, by forming linkages with the agriculture sector, can lead to productivity growth. Working with organized retail can encourage farmers to (ⅰ) improve yields by enabling them to obtain quality supplies, (ⅱ) adopt superior farm technology and practices, (ⅲ) access timely credit at reasonable rates, and (ⅳ) bypass unproductive intermediaries. The tie-up with organized retail may drive small/medium enterprises to become more efficient in order to meet the stringent delivery conditions of the retail market. Private labeling is the creation of brands in the name of modern retailers, and it has already begun in India in the food and grocery and apparel segments and is expected to expand rapidly. Small-scale manufacturers will be the major beneficiaries of private labels. Retail services, if they become more organized, have the potential for improving not only their own productivity, but also the productivity of other sectors, especially agriculture, which is marked by low productivity growth.

In order to increase the size of the organized sector and to encourage people to shift from unorganized retailing to organized retailing, the following policy directions should be considered:

(i)   The retail sector in India is severely constrained by the limited availability of bank finance. Suitable lending policies need to be designed that will enable retailers in the unorganized sectors to expand, employ better technology, and improve efficiencies. Policies that encourage unorganized sector retailers to migrate to the organized sector by investing in space and equipment should be encouraged.

(ii)   The government must actively encourage the setting up of co-operative stores to procure and stock commodities from small producers. This will address the dual problem of limited promotion and marketing ability, as well as market penetration, for the retailer. The government can also facilitate the setting up of warehousing units and cold chains, thereby lowering capital costs for small retailers.

(iii)   With 3.6 million shops retailing food and employing 4% of the total workforce, the food-retailing segment presents a focused opportunity for the government to catalyze growth and employment. Provision of training in handling, storing, transporting, grading, sorting, maintaining hygiene standards, maintaining refrigeration equipment,

packing, etc. is an area where the government can play a proactive role. This could give a substantial boost to the productivity of this sector.

(iv)   Quality regulation, certification, and price administration bodies should be created at district and lower levels for the upgrade of the technical and human interface in the rural to urban supply chain.

(v)   Competition generates productivity. Calibrated and gradual exposure to competition may lead to productivity spillover effects as domestic organized retailers learn ways of building effective supply chains from the foreign retailers. Some competition has already been induced by the government by allowing entry to foreign firms selling single-brand products. However, domestic organized retailers need to acquire a threshold size to have productivity gains from competition. Incentives to increase the size of domestic retail firms need to be designed.

6.2 Software Services

6.2.1 High Domestic and External Demand

Indian software services comprising ITeS and IT-BPO services have shown remarkable resilience to the global economic crisis. Software services grossed US$47 billion in 2008–09, growing by 17% from the previous year. This sector is a major contributor to the growth of the economy and has a multiplier effect in terms of export earnings, investments, employment, and overall economic growth. The total employment in the IT services is estimated to have reached 2.0 million in 2007–08 against 1.63 million in 2006–07, a growth of 22.7%. This represents a net addition of 375,000 professionals to the industry employee base in 2007–08. The indirect employment attributed to the sector is estimated to be about 8.0 million in 2007–08. This translates to the creation of about 10.0 million job opportunities, which can be attributed to the growth of this sector.[10]

One of the key features of this services sector is its wide use across the other services sectors and manufacturing industries. This provides a strong domestic demand for the sector. The revenue earned by software services from the domestic market is estimated to be US$11.7 billion in 2007–08 compared to US$8.2 billion in 2006–07, a growth of about 42.7%. Along with the existence of a strong domestic demand, the sector has a steadily rising external demand. Indian IT-BPO services are characterized by low costs of operations; a high quality of services; and English speaking, readily available, skilled manpower. Further, a favorable time zone difference with the US and Europe has added to its advantage. This has led to a double-digit growth in exports of IT-BPO services.

The global economic crisis led to a fall in the growth of software services, but the growth in domestic demand cushioned the adverse effects. Domestic demand for both IT and IT-BPO services grew much faster than their exports. A double-digit growth in exports of IT-BPO (29.8%) in a time of crisis reflects the competitive edge of Indian IT-BPO services over other suppliers. At present, India has over 400 delivery centers across 52 countries. This strategy of geographical diversification along with productivity growth and operational efficiency has provided a strong footing to the sector.

6.2.2 Recommendations for Improving Productivity Growth in Software Services

Estimations of productivity growth undertaken for 18 firms for the period 1994–95 to 2007–08 are indicative of high TFPG in this sector. If the sample can be taken as representative of the sector, it

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[10]   Source: Indian IT-BPO Industry Factsheet-2009, NASSCOM

indicates that productivity growth started in 2000–01 and has continued. However, in 2008–09 there was a marked decline in productivity growth, probably because of excess capacity with the lowering of external demand. Most of the productivity growth in the sector can be explained by improvements in technology and efficiency, while change in scale does not seem to have added to the productivity growth.

To sustain the growth of software services, targeted policies and strategies are needed. The sector is already at the frontier of the world and there is a need to capitalize on the gains that growing domestic and external demands offer. The following are some recommendations for sustained improvements for productivity growth:

(i)   With the changing global situation, especially after the slowdown in the growth rate of advanced countries, the nature of demand for software services (especially IT-BPO) has also begun to change. A recent National Association of Software and Services Companies–Everest research report shows that the outsourcing needs of buyers are changing with companies focusing on value drivers (integrated delivery models offering scale and value and speedy implementation), minimizing risks, and re-evaluating the sourcing model (re-thinking captive versus supplier mix, evolving risk-reward relationships with vendors, and opting for outcome-based pricing). It is important for IT-BPO services providers to build a strong and unmatched value proposition for themselves in specific, focused, niche segments. Super-specialization segments now need to be explored. Policy incentives need to be built for encouraging IT-BPO services to enter such specialty segments.

(ii)   IT-BPO services are not only increasing their depth by entering super-specialty segments, they are also increasing in width by bringing new areas into their ambit, e.g., legal process outsourcing, clinical research outsourcing, mobile applications, energy efficiency, and climate change. These are new areas that require massive investments and knowledge creation. It is recommended that the government takes initiative and encourages IT firms to enter these areas by creating policy incentives.

(iii)   Along with entering new segments and climbing up the value-chain, what is also needed for the sustained productivity growth of the sector is innovation. In line with providing incentives for R&D activities for the manufacturing sector, the government should also focus on developing incentives for innovations in IT services. Collaborative research between industry, academia, and government needs to be encouraged.

(iv)   The government can give direct support through greater outsourcing and moving away from low-value, high-volume back-office jobs and customer support activities, and instead moving towards higher value offerings by BPO services providers. The government role in expanding the domestic BPO industry is expected to be critical, as it can boost domestic business by taking forward programs such as e-governance and connectivity. This will further increase the growth of the domestic market and inject productivity growth into the economy.

(v)   The Indian software services sector has the potential to emerge as an IT hub in the region. But for that to happen, it is important for the government to provide opportunities within its various bilateral Free Trade Agreements. Concessions for IT service providers can be negotiated to increase exports and investments in other countries. Low-value end services can be outsourced to these countries and attempts can be made to develop supply chains.

6.3 Banking Services

The share of banking and insurance services of the total services output has remained consistently around 10%, while its share in GDP growth has increased steadily over time. In 2008, India had 88 scheduled commercial banks: 27 public sector banks (banks where the Government

of India holds a stake), 31 private banks (banks where the Government of India does not have a stake; they may be publicly listed and traded on stock exchanges), and 38 foreign banks. The banks have a combined network of over 53,000 branches and 17,000 automated teller machines. According to a report by ICRA Limited, a rating agency, the public sector banks hold over 75% of the total assets of the banking industry, with the private and foreign banks holding 18.2% and 6.5%, respectively.

Reforms in the Indian banking sector started in 1991 in order to promote a diversified, efficient, and competitive financial system. The ultimate objective was to improve efficiency and financial viability and undergo institutional strengthening. Beginning in 1992, Indian banks began being gradually exposed to the rigors of domestic and international competition. New banks from the private sector and the entry and expansion of several foreign banks resulted in greater competition in both deposit and credit markets. Consequent to these developments, there has been a consistent decline in the share of public sector banks in the total assets of commercial banks. With time, a stream of literature has evolved in India that explores the performance of financial institutions in the wake of financial liberalization. These studies are essentially micro-economic in nature and seek to analyze the efficiency and productivity of banking systems.

It is expected that privatization will unleash competitive forces. Such competition would, in turn, enable banks to alter their input and output mix. This, when combined with technological developments, facilitates increases in output that raises overall bank productivity and efficiency. This has led to a rising debate on the impact of ownership on bank efficiency, which is based on incentives for being efficient. On one hand, it is argued that private ownership will have more incentives for improving efficiency; on the other hand, it is expected that privatization is, in general, accompanied by an increase in operational costs and could induce financial fragility due to over-expansion of banking activity. Another debate in the area of banking productivity is the relationship between bank size and efficiency, as banking in the current world is technology driven and technological progress itself is scale augmenting. It is argued that productivity gains after privatization could be temporary and not sustainable in the long run. As a result, evidence in support of a unidirectional relationship between privatization and efficiency/productivity is not conclusive.

Most studies have found that TFPG has improved marginally in the post-deregulation period, but there is little evidence of a narrowing of productivity differentials across ownership categories (e.g., Kumbhakar and Sarkar 2003). Among various productivity indicators, labor productivity indicators like business per employee and profit per employee are most commonly used. In addition, business per branch is also used to judge branch-level productivity. Studies have found that profit per employee increased by a compound growth of around 17% in the period 1992–04 (Mohan 2005). Overall, the balance of evidence suggests distinctive productivity improvements in the banking sector over the reform period.

The TFPG analysis undertaken earlier in this paper for 67 banks over 10 years also indicated a substantial rise in the TFPG of banks. Except for 2007–08, there has been a continuous increase in bank productivity since 2000–01. Such an increase could be driven by two factors: technological improvement, which expands the range of production possibilities; and a catching up effect, as peer pressure amongst banks compels them to raise productivity levels. Within the context of gradual deregulation of the financial sector, two main factors may have been at work: a significant shift of the best-practice frontier, driven by a combination of technological advances, financial innovation, and different strategies pursued by banks; and/or reductions in total costs due to improvements in overall efficiency. Results indicate that in different years, different factors have become relatively more important. Although it is difficult to pinpoint the relative mix of these factors in raising productivity, the conclusion is clear: Indian banks have witnessed significant productivity improvements, post-reforms.

6.3.1   Recommendations for Increasing Productivity Growth in Banking Services

Higher sustainable growth is creating greater demand for financial savings. The Indian banking sector faces many challenges with the economy possessing one of the highest growth rates in the world. Not only does the banking sector require increased penetration to reach out to a wider customer base, but it also has to provide the best value to customers in terms of service levels and transparency. Indian banks will have to find ways to optimize each customer relationship as they compete with global players with deep pockets and deep customer insights. To help banks improve their productivity and efficiency and provide much needed support to the industry, our recommendations are the following:

(i)   Banks not only need to invest in infrastructure but they also need to leverage information technology to find more innovative ways to reach customers, such as utilizing new delivery mechanisms, economizing on transaction costs, and providing better access to the under-served. Electronic transactions substantially improve the efficiency of banking systems because they are faster in comparison with paper-based transactions. To help banks undertake these costs, more deregulation is required.

(ii)   Another critical challenge is the hiring and retaining of talent in the face of stiff competition from private institutions. Banks will also have to invest in new skill development and training. The government can provide vital support in this respect. As the share of public-sector banks is the highest, skill development and training of staff needs to be undertaken at regular intervals to keep them up-to-date with the latest technologies and customer care programs.

(iii)   Indian banks need to build on existing capabilities and also add new ones. This poses a more serious managerial challenge given the dynamic environment in which banks will be forced to continuously learn and reorient themselves while adopting new technologies for risk management, building innovative service mechanisms of delivery, and improving customer care. The consolidation of banks can prove to be an effective tool to achieve this objective. Banks with similar operations have an incentive to merge, thereby eliminating overlapping branches and freeing back office, administration, and marketing resources. Productivity gains from the implementation of new technologies would also be enhanced due to the incurring of large initial investments compared to the scale of operations. This may also lead to risk diversification, which is more relevant for smaller banks concentrated in particular regions serving niche markets. As banks merge and grow bigger they would be in a much better position to introduce customized financial instruments. The government can play a vital role in this through strategic policy intervention.

(iv)   With the implementation and acceptance of Basel II norms, banks would be able to capture operational risks better and, therefore, would need additional capital. This may make them turn increasingly to the flourishing capital market. The government needs to increasingly facilitate this process.

7. SUMMARY AND CONCLUSIONS

The onset of the global economic crisis has posed many new challenges for the Indian economy and has initiated a re-examination of the growth strategies that the economy had been following. A cautious, calibrated, but steady approach to the liberalization of key sectors has improved the economy's resilience towards external shocks. But at the same time, the role of strong domestic demand and supply-side factors like productivity growth in providing momentum for economic growth has been brought to the forefront. The impact of the global economic crisis on the Indian economy was relatively less severe due to a lower dependence on exports and the fact that a sizeable contribution to GDP comes from the services sector, which continued to grow at a steady rate and accounted for more than 80% of India's growth rate of 6.7% in 2008–09.

In this context, this paper attempts to demystify the services-led growth of India in the face of falling external demand. It examines the contribution of disaggregated services to total GDP, and decomposes growth of GDP with respect to the disaggregated sectors of the economy. It was found that most of the sectors that have high shares in the GDP are not dependent on external demand. The fall in external demand has, therefore, not led to a severe decline in their growth rates. However, domestic demand has also decreased in the wake of the current crisis as the second stage effects of the crisis get translated into the economy. The fall in private consumption has been compensated by a substantial increase in government consumption that has cushioned the adverse effects that may have been felt due to lower private consumption.

Three specific sectors have been identified for sustaining the momentum of growth of the Indian economy. These are retail/wholesale trade, software services, and banking services. All these services have high shares in the GDP and contribute substantially to its growth. These services have a strong growing domestic demand and are on a rising productivity trajectory. TFPG was estimated at the firm level for software firms and banks and shows that both sectors experienced productivity growth above 10% post-2000. Interestingly, all three identified services form important inputs into the manufacturing sector and contribute substantially to its productivity growth. Efforts need to be made for further boosting productivity growth in these services, as it will enhance productivity growth in other sectors of the economy, particularly manufacturing. Higher productivity in services can lead to a sectorally-linked productivity spiral.

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