

## Modern Services Exports from Emerging Countries— Perspectives and Opportunities

SHAHBAZ NASIR

### 1. INTRODUCTION

Traditionally, developed countries are the major exporters of services; however, technological developments in IT and communications over the last two decades have made it possible for developing countries to exploit their comparative advantage in some modern services. The driving force for this comparative advantage is the large pool of semi-skilled and skilled graduates in emerging countries who can deliver their services across borders, using advanced communication technologies. Why do emerging countries have increasing modern services exports? How are these exports explained by theory? What are the factors behind this export growth and the reasons to expect future growth? These are some of the important questions that researchers and policy-makers would like to find answers to and an attempt has been made to answer these questions in this paper.

Identification of the sources of services export growth from emerging and developing countries can be attempted through established theories of goods trade and production. This paper reviews selected theory and empirical work in order to explain the underlying causes for growing exports of services. Causes for the export of modern services may include a comparative advantage of the exporting country, cost reduction for the importing firm through outsourcing, reduction in trading costs due to technological improvements and an increase in gains from services trade.

Trade in services can take different forms. Services can be an intermediate as well as a final product and services can be delivered through foreign presence or cross-border trade using communication networks.<sup>1</sup> This study focuses on modern services, including IT and IT enabled services. These services are delivered largely through the cross-border mode of trade, and outsourcing has contributed to the increase in these exports from emerging countries [Bhagwati (2004)]. The discussion in this paper focuses on the literature related to cross border trade and outsourcing of services.

Shahbaz Nasir <shahbaz.nasir@alumni.anu.edu.au> is affiliated with the Pakistan Telecommunication Authority (PTA), Islamabad and Asian Development Bank, Manila.

<sup>1</sup>A firm can deliver its services across borders to individual customers directly, or on behalf of an importing firm. This kind of services come under the category of final products, for example, a consultant firm providing its consultancy services to individuals overseas or a call centre services provided to overseas customers of importing firm. On the other hand, an exporter firm can deliver its services directly to an importing firm, which the importing firm uses as part of its production process, for example, accounting services, data mining, and examination of x-rays for a hospital.

The paper begins with a brief discussion of recent trends in global services trade. Section 3 provides various explanations for modern services exports from emerging countries in light of the theory and empirical evidence of services trade. Section 4 discusses future growth prospects. The last section concludes.

## 2. TRENDS IN SERVICES EXPORTS

The services sector has been the most dynamic segment of the global economy in the last decade. In the domestic economy, the services share in the GDP of middle and high income countries has been rising and the services sector has contributed 72 percent of the global GDP growth during the period 2001-2009. In the external economy, services have been dominating the landscape of both trade and FDI; most FDI in the last decade has been in the services sector and growth of modern services trade has surpassed growth in the goods trade. At the aggregate level, total world trade in commercial services has increased from US\$ 0.82 trillion in 1990 to US\$ 3.4 trillion in 2009, representing a growth of 319 percent. Modern services are the main source of this growth with their current volume of over US\$ 1.8 trillion, which covers more than 53 percent of total global services trade. High income countries are dominant players in commercial services with their current share of 80 percent in world trade, which was even higher at 87 percent in 1990 (see Table 1).

The outsourcing of services to developing countries has been raised as a concern by some policy-makers in the developed world. If we look at the aggregate figures, only 8 percent of world exports of modern services are from lower middle income countries. It is only in the ICT services where lower middle income countries have a share of 23 percent, most of which is contributed by India. Lower middle income countries, excluding India, have not experienced a significant change in their share of world modern services exports, showing that the benefits of the increase in modern services is still limited to a few emerging countries.<sup>2</sup>

Telecommunications, computer and information services, and business and professional services (BPS) cover more than 60 percent of modern services. These are the fastest growing segments of services trade for the emerging economies engaged in outsourcing activities. The increase in IT and BPS exports of these countries has been largely due to the increasing trend of outsourcing activities. Total world market estimates for the trade in computer and information services reached over US\$ 225 billion in 2009, increasing from US\$ 18.5 billion in 1997 and an average annual growth of 25 percent was recorded for this period. India, Ireland, the UK, Germany, the US, the Netherlands, Sweden, Canada and China are among the top exporters of computer and information services. With the exception of India, other emerging economies in South Asia and ASEAN have a small share in the world trade of computer and information services. However, these countries have improved their world share over the years and showed an average annual growth rate of more than 29 percent in the period 2000-2009. Currently, in the world market of BPS exports, the US, the UK, Germany and Japan are the main players while in South Asia and ASEAN regions India, China and the Philippines are high growth achieving countries. Other emerging countries can also exploit their potential and benefit from these expanding markets.

<sup>2</sup>Figures in this paragraph are based on Balance of Payments data reported by the World Development Indicators and the IMF's Balance of Payments statistics and cover cross-border mode of services trade.

Table 1

Table 1

*Commercial Services Exports and World Shares*

	1990					2009				
	World US\$ billion	High Income %	Upper Middle Income %	Lower Middle Income %	South Asia %	World US\$ billion	High Income %	Upper Middle Income %	Lower Middle Income %	South Asia %
<u>Commercial Services</u>	816	87.3	6.5	5.2	0.8	3418	80.3	7.7	11.2	3.1
Modern Services	300	91.6	3.5	4.1	1.0	1811	87	4.2	7.8	3.9
1 Information and Communications Technology (ICT) Services						303	70	4.9	23.5	18.5
<i>of which</i>										
1.1 Computer and information services						225				
1.2 Telecommunications services						58				
2 Insurance and Finance	44	89.5	6.1	3.8	0.8	278	92.2	5.0	2.5	1.7
3 Other Modern Services	256	92	3.0	4.2	1.1	1231	90.1	3.5	6.0	2.6
3.1 Business and Professional Services	176					891				
3.2 Modern services not included elsewhere	80					340				
Traditional Services	516	83.4	7.9	5.6	0.7	1606	73	11.4	13.2	2.0
1 Transport	231	85.9	6.8	5.5	0.8	717	80.2	8.1	10.9	2.7
2 Travel	285	81.4	8.9	5.7	0.7	889	67.2	14.2	15.1	1.4

*Source:* Authors' calculations, using World Development Indicators, World Bank, and IMF's Balance of Payments statistics.

*Note:* Commercial services are obtained by excluding government services from total services exports; Figures for 2009 are estimates.

### 3. CAUSES OF MODERN SERVICES EXPORTS FROM EMERGING COUNTRIES

The literature on trade in services provides various explanations for the growth of services exports from emerging countries. These explanations include comparative advantage, specialisation, outsourcing or splintering of the production process, technological development, reduced trading cost, trade liberalisation and gains from services trade. Many causes apply both to goods and services trade. The distinguishing characteristics of services that make them different from goods make it necessary to specifically examine these explanations for services exports.

#### 3.1. Comparative Advantage

The basic model used in international trade theory to explain trade patterns is based on the comparative advantage of countries in producing different goods and services. Comparative advantage can be primarily due to differences in technologies or factor supplies. The theoretical arguments of comparative advantage can be equally applied to trade in goods and services though services may require their specific features to be accounted for in the theoretical modelling. First, we look at the differences in countries based on their factor endowments. According to the Heckscher-Ohlin (HO) theorem, a country will export the good (or service) that uses intensively the factor of production it has in abundance. Some developing countries have tertiary level educated workers and professionals in general abundance. Large emerging countries, including China and India, have also shown a significant increase in the enrolment rates in engineering and IT education. Therefore, these countries have the potential for the export of tradable services if advanced IT and communications infrastructure is in place.<sup>3</sup> The services in which some emerging countries have seen an increase are mostly IT and IT enabled modern services. These services intensively use semi-skilled and skilled workers and professionals that include IT and engineering graduates among other supporting professionals. For example, call centres and software companies in developing countries, including India, the Philippines and Pakistan, provide their services across borders to US firms. These exports are driven by labour costs and utilise abundant resources of English speaking and computer literate graduates in these countries. For the theoretical justification, most of the graduates in these countries are suitable for medium skilled activities in services and not for high end services products. On the other hand, the US still has a natural comparative advantage in high end services products which intensively use high skills. These skills are attained due to high education and learning standards in place in US universities.

The comparative advantage of countries in IT and IT enabled services can also be due to relative technological differences. In the Ricardian model with technology differences, countries export products in which they have a comparative advantage in terms of productivity. Using productivity differences, it is simple to explain IT based services exports of emerging countries to the developed world [Feenstra (2008)]. For instance, productivity levels of IT based business services, including call centre and

<sup>3</sup>McKinsey (2005) shows that emerging economies have enormous resources of these young professionals that can be used in the emerging market of global services.

Table 2

*Annual Number of Graduates in IT, Engineering and Sciences (In Thousands)*

	2002	2003	2004	2005	2006	2007	2008	Average Annual Growth Rate
India	425	450	466	477	566	734	759	10.6
Pakistan	12	13	15	22	26	34	34	19.5
China	429	660	875	1,101	1,237	1,292	1,556	24.9
Indonesia	76	83	92	93	74	70	96	5.4
Malaysia	78	87	91	83	88	82	84	1.5
Philippines	76	82	98	97	103	106	110	6.4
Thailand	97	132	125	126	128	133	144	7.4

Source: Author’s calculations, using UNESCO (2010).

Notes: These are estimates based on enrolment data.

support services, are almost same in the US and India due to more or less similar levels of prevailing scientific and engineering knowledge. However, productivity of workers in the manufacturing sector of developing countries, including India, is generally much lower than in developed countries. Therefore, relative productivity of IT based business services workers in developing countries is higher than in developed countries. Thus, it is possible for emerging countries to have a comparative advantage in certain IT enabled services exports.

### 3.2. Outsourcing

The modern services we focus on in this paper cover to a large extent the phenomenon of outsourcing of services to emerging countries. Outsourcing of services is concentrated in IT and computer related services, and business services that include accounting, auditing, marketing, call centres, and after sales services. A firm can outsource some of its production processes or services to outside firms which were earlier part of the production process of that firm. This outsourcing can be to other services or manufacturing firms domestically or across the border. In our discussion, we use the term ‘outsourcing’ to refer to outsourcing which occurs abroad. In the literature, the term ‘offshoring’ is also used to refer to outsourcing abroad.<sup>4,5</sup>

Before going into the theoretical discussion of outsourcing, a simple context for the outsourcing phenomenon is presented. Outsourcing enables a profit maximising firm to purchase less costly goods or services. The cost structure of a profit maximising firm in country ‘i’ can be divided into services and production cost. Let the total cost of producing one unit of a product be decomposed into two main components: ‘service cost’ and ‘production cost’:

$$c = sc + pc \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (1)$$

<sup>4</sup>The phenomenon of outsourcing in services is similar to outsourcing in manufacturing. The basic idea is to fragment the production process into different parts and then the production of these parts can take place in different countries/territories, based on cost advantages.

<sup>5</sup>Outsourcing generally refers to the offshoring of services to developing countries. Developing countries also outsource services to developed countries for high value added and high end tasks. For example, the software industry in India and Pakistan also imports the services of US professionals for the tasks for which the expertise and availability in these countries are scarce.

where, service cost 'sc' can be further divided into tradable 'sct' and non-tradable 'scnt' components. We can write total cost, without outsourcing as:

$$c = sct + scnt + pc \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (2)$$

The firm can take the decision to outsource part of these tradable services 'sct' to another country 'j' if the cost of the imported service 'scmt', including transaction cost incurred (in terms of delivery, coordination, customisation of service according to domestic consumer needs and travel) is less than the cost of domestically available services. Other services inputs that are tradable but not outsourced will be purchased from the local market 'scdt'. Therefore, with outsourcing, the cost of tradable services for the firm should be less than the local production cost of these tradable services:

$$sct > scmt + scdt \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (3)$$

$$\text{and } c = sct + scnt + pc > scmt + scdt + scnt + pc \quad \dots \quad \dots \quad (4)$$

The main motive for services outsourcing to emerging countries is the cost savings for the importing firm. We can divide our discussion of outsourcing into two streams: first, the division of the production process into different tasks and the outsourcing of tradable tasks to offshore locations due to low wages and deliverability [Deardorff (2005); Grossman and Hansberg (2008); Rodriguez-Clare (2010), among others] and; second, the explanation for trade in services that facilitates and provides links to the goods trade and fragmentation of the production process [Jones and Kierozkowski (1990, 2000)].

We can divide the production process of a good or a service into a continuum of tasks [Feenstra (2008)]. Along the value chain, these tasks can be divided according to the level of skill required from unskilled to high skilled. Assuming an equal amount of capital and trading cost required for each task, we can expect less skilled tasks to be outsourced to developing countries on the basis of relative wage differences [Bhagwati (2004); Feenstra (2008); Baldwin (2007); Rodriguez-Clare (2010)]. These less skilled tasks outsourced to developing countries are of a routine nature and involve less problem solving and management knowledge [Antras, *et al.* (2006)]. These views come from a firm's hierarchal models. Dei (2010) also shows that in a firm's hierarchy, developed countries will keep the core tasks while outsourcing the peripheral tasks to developing countries with the condition that workers in these countries have a minimum level of skills. This minimum skills requirement explains the case of many developing countries which have not attracted developed countries for their outsourcing activities.

In the context of outsourcing to emerging or developing countries, trade theory explains the relocation of less skill intensive activities (more labour intensive) to developing countries. However, empirical evidence shows that outsourcing of modern services also includes services that intensively use skilled labour. Some recent papers have addressed this new form of outsourcing, for example, Deardorff (2005); Markusen (2007); Grossman and Hansberg (2008).<sup>6</sup>

Deardorff (2005) was the first to explore skilled labour outsourcing and provides two possibilities for outsourcing. First, more productive activities in developed countries will not

<sup>6</sup>The literature focuses less on explaining the reasons for such high skilled job outsourcing and has concentrated more on the welfare and wage impacts of this outsourcing.

normally be outsourced and will only move when the savings in wages are higher than the loss in productivity. Second, activities that have almost the same technology in developed and developing countries will be outsourced as long as wages are lower in the developing countries. This outsourcing can therefore be in activities that are intensive in skilled-labour, and can result in offshoring of skilled jobs. This explains the outsourcing of some of the IT tasks that are highly skilled such as computer programming to emerging countries. These tasks can be performed equally well in developing and developed countries. Therefore, the relative cost of these tasks is high in developed countries compared to other tasks in which a developed country is better [Deardorff (2005)]. Thus, a developed country will outsource such tasks if communication technologies make it possible.

Markusen (2007) presents the case for outsourcing of skilled labour jobs from developed countries to emerging countries. He builds his framework on the idea that the availability of skilled engineers in India or some other developing countries may be in abundance but these skilled persons may not have anything to do at home. Therefore, their relative prices may be low in skill scarce nations. This argument provides good support for the outsourcing of skilled jobs to developing countries in a factor-proportions or HO approach [Markusen (2005)].

Tradability of tasks has an important influence on a firm's decision to outsource. Grossman and Hansberg (2008) examine the possibilities that some tasks can be outsourced while others not. In their model they assume that each task has different trading costs. If technological improvement is biased towards reducing the trading cost for the high skilled task then these tasks will be offshored more compared to low skilled tasks. This again explains the outsourcing of high skilled tasks in IT and IT enabled services to emerging countries.

The literature also highlights the demand for international tradable services in managing the growing fragmentation of production process in manufacturing. The basic idea of a service link in the product fragmentation literature provided by Jones and Kierzkowski (1990) focused on services that support the international trade in goods. Today, these service links provide important support for organisation of the production process at different stages. Multinationals now take part in the fragmentation of their production processes at low cost locations in various countries using these 'Services links'.<sup>7</sup> Efficient communication services, back office services and transportation services play an important role in reducing the cost of these 'Services links'. In the theoretical framework of international production fragmentation, increasing tradability of services across borders allows low cost services and increases the possibilities of production blocks to be fragmented across countries [Jones and Kierzkowski (2000); Golub, *et al.* (2007); Deardorff (2001)].<sup>8</sup> For example, many multinationals are increasingly shifting their administrative and support services to a 'shared service centre' at a single place to serve the production network units in different economies [Grimes (2006)].<sup>9</sup> This kind of

<sup>7</sup>The knowledge/technology intensive industries (office and computing machinery, professional goods, electrical apparatus, communications equipment, vehicles and industrial chemicals) are the main users of these services links [Francois and Woerz (2008)].

<sup>8</sup>The literature also recognises the importance of liberalisation of trade in services in fragmentation processes [Jones and Kierzkowski (1990, 2000); Deardorff (2001)].

<sup>9</sup>In this context, production of a final manufactured good has manufactured inputs as well as embodied service components in the form of service inputs and support services.

trade in services results in fixed cost savings and savings resulting from economies of scale [Deardorff (2001)]. Organisation of these production processes requires more efficient service links that are provided by outsourcing of routine tasks to less costly locations in emerging and developing countries.

### 3.3. Technological Change and Declining Trading Cost

Growth in IT and IT enabled services from emerging countries has benefited greatly from technological improvements and a drastic reduction in trading costs and services trade liberalisation. In the trade literature, we are familiar with the trading costs that are attached to any transaction in international trade. For goods, these costs include transportation and tariffs.<sup>10</sup> The respective trading costs in cross-border services trade are delivery cost and trade restrictions/regulations/policy barriers. The delivery cost for modern services can be divided into digitisation of tasks, and coordination and transmission costs. Standardisation of tasks with the help of industry standards helps in devising digitisation of tasks or a whole process [Gereffi, *et al.* (2005)]. Use of computers over the last two decades has enabled digitisation of several business services, such as customer and support services and medical services. A task characterised by becoming digitised or codified has larger possibilities of being offshored to low cost destinations [Leamer and Storper (2001)]. Similarly, routine tasks are also good candidates to be offshored. At the same time, the transmission cost has fallen significantly over the last two decades due to massive investments by telecommunications companies in transnational optic fibres. These technological improvements have helped developing countries in two ways: first, new technologies have enabled many services to be delivered through fast broadband networks which were not possible before; and second, the cost of these ICTs has fallen sharply over the last decade and made the transaction cost low enough to create new exportable service products for the offshore markets. Digitisation and standardisation along with low transmission costs has provided new openings for developing countries to deliver services to long distance customers.

In outsourcing, there is an additional ‘search cost’ to find a suitable service or input provider. Once the firm has taken the decision to outsource a portion of its production process,<sup>11</sup> it will search for a suitable partner for the supply of inputs. Grossman and Helpman (2005) using a model of incomplete contracts incorporate the features of modern outsourcing in goods and services. They find that firms prefer a thicker market in which it will be easy to find a partner with appropriate skills, that are necessary to produce tailor made services for the final producer needs. The cost of this search will be less if the partner country has better quality communications and transport infrastructure. In addition, Grossman and Helpman (2005) find that the extent of outsourcing depends on the relative cost of customising input services or goods that largely depend on the kind of technology that is used by the potential partner. The thicker market argument of Grossman can explain the expansion of outsourcing activities to

<sup>10</sup>In a broader definition of trade cost, the literature also includes costs related to factors including exchange rates, domestic licensing and ports handling [see Khan and Kalirajan (2011)].

<sup>11</sup>Grossman and Hart (1986) and Grossman and Helpman (2002) examine the ‘make or buy’ decision of firm. They show that a firm’s decision to outsource may depend on the relative costs associated with the search for a new input provider and incomplete contracts compared to the firm’s own governance for vertical integration. Grossman and Helpman (2002) also observe that competition in an industry also has an impact on the cost saving margins required in the decision for offshoring locations.

India and China, as markets in these countries can provide wide choices of input providers in services and manufacturing respectively.

### 3.4. Gains for the Importing Economy

There are gains for the importing economy from services outsourcing that provide motives for the increase in outsourcing of services to developing countries. As with goods trade, there are also welfare gains from trade in services. Both consumers and producers in the importing economy benefit from a wider variety of services and lower prices. Most theoretical papers suggest welfare gains for countries that outsource some of their services. For example, Markusen (2005) works with different services outsourcing models that have both skilled and unskilled workers. His simulation results show that developed countries gain from outsourcing of services except for cases when there are adverse movements in terms of trade. These negative effects in the terms of trade are expected to be offset by positive productivity effects [Bhagwati, *et al.* (2004) and Mankiw (2006)]. In the long run, the importing country will gain because research and other economic activities will be able to adjust to the new environment [Rodriguez-Clare (2010)]. Outsourcing of services also serves to increase the skilled or unskilled labour force and to increase the national income of developed countries [Bhagwati, *et al.* (2004)].

Services imports bring additional benefits to the importing economy in terms of an increase in productivity in the manufacturing and other sectors, which are larger than the benefits from the goods trade. Theoretical studies based on the argument of economies of scale and specialisation strongly support the positive role of trade in intermediate services for the manufacturing output and goods trade [Melvin (1989); Francois (1990); Marrewijk, *et al.* (1997)]. Trade in services provides a greater variety of services and induces the production process to be more specialised because efficient intermediate services can provide better management and coordination of specialised production processes. At the firm level, there are two simple theoretical reasons to expect a productivity increase [Gorg, *et al.* (2008)]. First, imports of services inputs may allow a firm to gain a higher quality of service that can directly contribute to a productivity increase. Second, outsourcing of inefficient in house services production may result in cost savings. In addition, outsourcing of services can have more positive effects than material offshoring. For example, outsourcing of computing and information services may increase the overall efficiency of workers [Amiti and Wei (2006)].

The empirical evidence is also strong for the positive impact of services imports and services trade liberalisation on manufacturing productivity. For the US economy, Amiti and Wei (2009) estimated the effects of services and material offshoring on labour productivity of the manufacturing sector, using industry level data. They find that services offshoring contributed to 10 percent of productivity growth in the period 1992–2000, which is double the contribution of 5 percent of material offshoring. In a similar study, using firm level data of Ireland, Gorg, *et al.* (2008) find a strong positive effect of input imports of intermediate services on firm productivity.<sup>12</sup> The impact of services

<sup>12</sup>Due to non-availability of data on offshoring of services on industry or firm level, both these studies use indirect measures. Amiti and Wei (2009) use the national figure of 2.2 percent of imported business services in the US and assume that each industry has the same fraction of imported business services used in its production. On the other hand, Gorg, *et al.* (2008) define services offshoring as opportunity cost of wages.

trade liberalisation is also seen in other papers. For example, using input output tables data of OECD countries, Nordas (2008, 2010) finds a positive empirical effect of liberalisation of FDI in services, on the exports and productivity of downstream manufacturing. He also finds that countries with superior organisational technologies can have larger positive effects in competitiveness and exports of high-technology manufacturing because these exports use these services intensively. Arnold et al. (2007) find similar results while analysing the impact of liberalisation of entry of foreign firms in services on firm level data of the Czech Republic. The positive empirical evidence on manufacturing productivity for the US and other OECD countries strengthens the argument for the gains from outsourcing.

Other studies that show the benefits of services trade liberalisation on the overall economy use the Cumulative General Equilibrium (CGE) modelling and simulate the benefits in terms of gains in GDP. Most studies report gains to world GDP both in developing and developed countries. Among recent studies, estimates of a report by the Centre for International Economics [CIE (2010)] show that services trade liberalisation (in terms of removing barriers to trade in Mode 1 and Mode 3) can result in annual average gain of US\$ 114 billion in the period 2011-2025 which represents a 0.2 percent gain in annual real GDP growth.<sup>13</sup> Another study by Dee, *et al.* (2011) shows positive effects from removing barriers to services FDI in G20 countries. Their findings show that, in the short run, countries will have productivity gains that may affect the labour market, but in the long run, the labour market will benefit after reallocation of labour.

Outsourcing of services similar to other forms of trade can be expected to have overall positive effects on the economy but may reduce or increase a particular individual's earnings. Given the data limitations on outsourcing related activities, the McKinsey (2003) has made an effort to estimate the impact of outsourcing on incomes in the US and India, using interviews of the firms involved in outsourcing, data from national statistical agencies, and users of these outsourced services in the US. The cost-benefit analysis of the impact of outsourcing on both countries includes savings to US firms and consumers, profits to US and Indian firms, and employment adjustments in both economies. The results of the study show that for each dollar of offshore outsourcing to India net gains to US income is of US\$ 0.12 to US\$ 0.14, while India achieves a net gain of US\$ 0.33 cents. These positive gains from outsourcing, when combined with other studies, including productivity gains reported by Amiti and Wei (2006, 2009), and the lesser negative impact on employment shown by Van Welsum and Reif (2005) and Dee, *et al.* (2011) strengthen the argument for an increase in services outsourcing. Services outsourcing has become an integral part of the global trading system and occupies a similar place in the global production process as has been seen for the outsourcing of manufacturing activities to East Asian countries.

### 3.5. Domestic Policies and Multinationals

Most initiatives in IT and IT enabled services exports from emerging countries originated with the efforts of private entrepreneurs and, in the beginning, government

<sup>13</sup>These gains are based on global simulations with the assumption that all barriers in Mode 1 and Mode 3 are removed in 2011. The weakness of this study is that the tariff equivalents of trade barriers are based on Findlay and Warren (2000) which are ten years old. Although the study has adjusted the estimates of barriers for the current situation, the adjustment is arbitrary.

support was minimal.<sup>14</sup> As development in these high growth sectors became more evident, governments in many emerging countries embarked on several policies and initiatives to facilitate growth in this sector. Many developing countries established software technology and export parks that provided exclusive communication facilities and one stop support services for the service firms. Governments in many emerging countries also established organisations for export promotion and facilitation. For example, the Electronics and Computer Software Export Promotion Council was established in 1989 in India and the Software Export Board was later instituted in Malaysia, Pakistan and other countries. In addition, government support in the establishment of quality institutes helped successful countries achieve the critical mass required for the IT and IT enabled services. The Indian Institutes of Technology have played an important role in providing quality graduates for the IT and IT enabled services sector [Srinivasan (2005)]. Liberalisation of education policies in some developing countries, including India and Pakistan, has allowed the entry of private technology institutes that has also increased manifold the number of IT graduates in the last decade [World Bank (2010)]. In these developing countries, liberalisation of the telecommunications sector for foreign investment and competition has also allowed the IT and IT enabled services sector to benefit from alternate international gateways and the latest technologies.

Though many emerging and developing countries adopted these initiatives, the experience of highly successful countries such as India in IT and IT enabled services exports shows that these direct policies were not sufficient to promote growth in these exports. Apart from the fundamental factors discussed in previous sections for growth of IT and IT enabled services exports, other factors contributed to these success stories, including: entrepreneurship capabilities to enter into business ventures, brand name to gain confidence in the importing firms to engage in new outsourcing relations, a sufficient base of skilled graduates and a diaspora of these countries in the US and other European countries that help in exploiting the market opportunities [Pandey, *et al.* (2006); Arora and Bagde (2010)]. The literature suggests that the positive role of the diaspora cannot be ruled out in the export growth of IT and IT enabled services [Srinivasan (2005); Dossani (2005)].<sup>15</sup> In an empirical investigation, Tharakan, *et al.* (2005) find a significant positive impact of network connections on India's exports of software.<sup>16</sup>

The evolving structure of outsourcing of service activities has encouraged many multinational firms to establish their presence in emerging countries. As part of the fragmentation of their production process, multinationals, including IBM, Microsoft, Dell, and Acenture are expanding their service operations at different locations in

<sup>14</sup>In the 1970s, India was the only example among developing countries to engage in IT services exports and there was no government support at that time, although there were hurdles in foreign equity and import of main frame computers. IBM decided to leave India in the late 1970s due to these government hurdles [Pandey, *et al.* (2006)].

<sup>15</sup>The literature discusses the role of diaspora in the growth of IT exports from large emerging countries including India, China and Brazil, although countries that have small IT exports also received contributions from their expatriate skilled graduates in the US and Europe.

<sup>16</sup>The study used the share of people of Indian origin in an importing country's population as proxy for ability to tap into network connections.

developing countries. The establishment of subsidiaries by multinationals also provides them control of sensitive information and business processes. India's IT and IT enabled services industry that experienced initial growth in the 1980s and 1990s from local firms has also seen a rush of multinationals since 2000 [Dossani and Kenney (2007)].<sup>17,18</sup> Among other South Asian countries, Pakistan also has Microsoft and other services multinationals in its market. Due to security concerns, these multinationals have limited operations in Pakistan, below the country's potential. The Philippines has also attracted several multinationals for their operations in IT and IT enabled services. Other countries from the Arab region, including Egypt, Morocco, and Tunisia and small countries such as Malta and Mauritius are also attracting multinationals for their services operations. For example, Malta, due to its aggressive promotion of an ICT environment, has attracted leading IT players such as Microsoft, Oracle, HP and SAP [World Bank (2010)]. Investments by these multinationals contribute significantly to higher exports of IT and IT enabled services from these countries because most of these investments are export led rather than for domestic markets and help these countries move to higher value added service tasks.

### 3.6. Induced Growth

From previous discussions, it is clear that technically educated graduates, increasing outsourcing and technological developments have played an important role in the growth of services exports from emerging countries. Other factors have induced growth of these exports specifically from South Asia, in particular India. The manufacturing sector in India has been traditionally characterised by licensing regimes and heavy protectionism. This, combined with poor infrastructure, increased the cost of business in manufacturing. Therefore, the actual cost of business in manufacturing for new entrants was high and due to protection there was less incentive for innovation for the existing players. This policy bias resulted in a shift of entrepreneurs and innovative capacity in the economy towards other sectors which were more open to new ideas, and where general entry in these sectors was not restrictive and government intervention was limited. The IT and IT enabled services sector provided all these opportunities. These services rely on telecommunications infrastructure which has also improved over time due to large foreign and local investment and competition.

Another argument is based on the simple theory of induced innovation set out by Hicks (1932), which suggests that when the endowment of one factor becomes more abundant relative to another, a change in technology is induced towards using more the factor that is in abundance. IT and IT enabled services require less capital than the manufacturing sector but need more skilled and technical workers. Countries in South Asia, in particular India, are endowed with IT and engineering graduates, but capital and infrastructure for manufacturing has been inadequate. Therefore, technological knowledge and innovating processes in these countries have been directed towards IT and IT enabled services, in which the main factors of production are technically skilled graduates.

<sup>17</sup>Back office operations by firms such as General Electric, American Express, and British Airways have been in India since the 1990s.

<sup>18</sup>Companies of Indian origin such as Wipro and Infosys have emerged as large players in the global market of IT and IT enabled services.

#### 4. FUTURE GROWTH PROSPECTS

Current estimates for the global outsourcing of IT and IT-enabled services are above US\$ 100 billion.<sup>19</sup> The addressable market for these outsourcing activities was about US\$ 500 billion in 2008 and only 20 percent of this potential market was exploited [World Bank (2010)]. NASSCOM-Everest (2008) expects this aggregate market to reach US\$ 700 billion to US\$ 800 billion in 2012. Currently, most of the outsourcing activity is concentrated in computer and software services and business processes including call centres, accounting and finance. Increasing digitisation of economic sectors provides additional opportunities for outsourcing, for example, media, publishing, life sciences, energy and other utilities [NASSCOM-Everest (2008)]. High performing developing countries, including India, are capturing a small segment of the potential market for modern services.

Additionally, with increased usage of the internet in social life and economic activities, new opportunities are emerging for IT and IT enabled services. Both skilled and unskilled people in developing countries can work on these small activities and tasks on the internet to earn some or most of their living. For example, small tasks might include arranging on-line catalogues and helping with small tasks related to search engines, for example, Google. The World Bank (2011) reports that developing countries, with their low wages, have the potential to benefit from these emerging opportunities. These tasks can be performed by individuals, without being entrepreneurs. It is estimated that more than 100,000 people in China and Vietnam are earning a living on small activities involving on-line gaming alone [World Bank (2011)].

Both the theoretical and empirical studies show that the impact of services outsourcing on the US and other OECD labour markets has been insignificant. Most of the theoretical models discussed in this paper have predicted positive gains for the high skilled wages in the US market and a marginal impact on low skilled jobs.<sup>20</sup> On the empirical side, most studies have seen marginal labour effects. For example, Amiti and Wei (2006) find a small negative impact of services offshoring on labour demand in a sample of 450 industries in the US. This small negative effect becomes insignificant when the estimations are performed for 96 aggregate industry groups. Amiti and Wei (2006) suggest that the small negative impact of offshoring is offset by an increase in employment in other industries, within these aggregate industries. Later studies also include the impact of offshoring on skilled and unskilled labour. For OECD countries, Crino (2007) finds that there is a positive impact of outsourcing on high skilled jobs earnings and a small, negative impact on low and medium skilled jobs. Liu and Trefler (2008) examine the impact on US jobs and earnings from the outsourcing of services to India and China. They find an insignificant impact on US white collar job losses or a decline in earnings. These findings show that the political hype created in the US media against the outsourcing of services is not supported by the literature. In addition, the gains from services outsourcing for developed countries, in terms of overall welfare and higher productivity, make a strong case for the continuity of growth in services outsourcing to emerging countries.

<sup>19</sup>The corresponding figures for the total trade in IT and IT enabled services from the IMF cannot be extracted due to different IMF data classification.

<sup>20</sup>This stream of literature can be seen in Francois (2010) and Hoekman (2006).

On the supply side, three factors are important for future growth: domestic-led growth, transition to high value added segments and supply of best skilled graduates. Despite significant growth in the modern services exports of emerging countries, these countries are providing services of low value addition and the demand for services export firms in these countries, comes mainly from the international market.<sup>21</sup> Most of the innovative demand for IT and IT enabled service providers in emerging countries is derived from the external market.<sup>22</sup> Domestic demand for these innovative products is low in these countries due to less use of IT and IT-enabled services in their economies. Domestic demand for these export oriented services industries is important for their long-term growth because it will not only provide additional demand but also offer larger scope for innovation. A sophisticated economy creates additional demand for innovative services products, pushing services firms for an upgrade. Institutions such as the National Association of Software and Service Companies (NASSCOM) in other countries could provide the necessary platform for the creation of innovative and high value added services products.

Skilled workers are crucial for the growth in services exports. Developing countries, including China, India and Pakistan, have been able to substantially increase the numbers of university graduates over the last decade [UNESCO (2010)]. This increase in the number of graduates is a healthy sign. However the quality of graduates is important for services exports and is still lacking in these countries. The best skilled graduates can only be produced with development of the university system on the lines of competition among universities and a private sector driven curriculum [Trefler (2005)].

## 5. CONCLUSION

The growth of modern services from emerging and developing countries is a new wave in the global trading system. The reasons for and the sources of this growth have been analysed in this paper in the light of the theory and empirical evidence. The comparative advantage argument and outsourcing needs of profit maximising firms explain this growth that has been greatly facilitated by the falling trade cost and global integration of economies and production processes, with technological developments in IT and telecommunications.

Globalisation of services is similar to reorganisation of production processes seen in manufacturing goods, which has resulted in relocation of production processes from developed countries to East Asian countries. Firms will keep outsourcing tradable tasks to offshore locations in order to reduce their costs and to increase productivity. Opportunities in the services trade will grow as economic activities become more digitised, and the world is more connected with telecommunications, though the pace will also depend on the policies in developed countries towards services trade possibilities. Although there are large overall gains from outsourcing for developed countries, the loss of white and blue collar jobs may provide political motives to implement restrictive

<sup>21</sup>Arora and Gambardella (2005) report that sales per employee in the software industry in the US are almost four times that of India, China and Brazil, showing that workers in emerging countries are providing low value added programming skills.

<sup>22</sup>In India, most of the sales revenues for large IT and IT enabled firms come from exports.

policies, in slow growth periods. However, as the trade in services is becoming an integral part of the global production process, it will be difficult to reverse the process of services outsourcing.

Most IT and IT enabled services are labour intensive but labour requirements are skills based. A minimum college level education is required in the export industry of these services which is different from the less skilled labour requirements in manufacturing. Moreover, specific skills are necessary to work in this export industry including the knowledge of a foreign language and IT skills. Developing countries are abundant in labour but most are not skilled. The experience of successful countries in IT and IT enabled services shows that other developing countries need a sufficient base of skilled graduates to benefit from the emerging global market for these services. Newcomers from developing countries may find enough competition from existing large players, including India, China and Brazil because of their established positions in the market. However, to start with, they can find niches for their products, based on cost. Multinational firms can be a source of export demand and skills to capture these niche markets. Developing countries can attract multinationals for their investment by creating improved ICT infrastructure and increasing the base of skilled graduates.

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