

## Survey on Computer Software & Information Technology Services Exports: 2010-11\*

The Reserve Bank conducts annual survey on Software and Information Technology Services Exports for compiling data on various aspects of computer services exports as well as exports of Information Technology Enabled Services (ITES) and Business Process Outsourcing (BPO). The survey collects details on export of software services as per the activity, type of services (on-site/off-site) and country of destination along with the four modes of supply, as per General Agreement on Trade in Services (GATS).

This article presents the results of 2010-11 round of the Software and IT Services Exports survey covering 760 companies, including most of the major companies, which together accounted for nearly 78 per cent of the estimated total software exports of India. During 2010-11, India's total export of software and IT services, as defined in IMF's BoP Manual, is estimated at around ` 2,170.1 billion (US\$ 47.6 billion), of which, export of computer services accounted for 73.7 per cent and ITES/BPO services accounted for the remaining. Considering all modes of supply, including the services delivered by foreign affiliates established abroad, export of software services during 2010-11 stood at around ` 2,547.8 billion (US\$ 55.9 billion) of which over two-third share was accounted for by the cross-border supply mode. USA remained the major destination for software services exports.

### Highlights

- India's export of software services (computer services and ITES/BPO services) during 2010-11 was around ` 2,170.1 billion (US\$ 47.6 billion), which was 18.1 per cent higher than in the previous year (` 1,836.9 billion).
- While export of computer services recorded 26.2 per cent growth, growth in export of ITES/BPO services remained flat during 2010-11.
- Exports of computer services and ITES/BPO services, respectively, accounted for 73.7 per cent and 26.3 per cent of the total exports of software services during 2010-11.
- Public limited companies accounted for around 61.3 per cent of the total export of software services.
- Delivery of software services exports through off-site mode increased by 19.4 per cent during 2010-11 and accounted for around 79.3 per cent of the total software exports. On the other hand, on-site mode delivery continued to record relatively lower growth (13.6 per cent in 2010-11) and its share in total software exports reduced to 20.7 per cent.
- With 63.6 per cent share in India's total export of software services in 2010-11, USA remained the major destination for software exports. European countries had 23.5 per cent share, of which UK accounted for 15.0 per cent.
- US Dollar remained the major invoice currency for software exports with 75.3 per cent share. Pound Sterling and Euro had shares of 9.8 per cent and 7.0 per cent, respectively.
- Total international trade in software services by India, including the services delivered by foreign affiliates established abroad, stood at ` 2,547.8 billion in 2010-11. Mode-1 (cross-border supply mode) accounted for 67.4 per cent of total international trade in software services by India.

\* Prepared in the External Liabilities and Assets Statistics Division, Department of Statistics & Information Management. The previous article in the series with reference period 2009-10 was published in June 2011 issue of the Bulletin which also contains concepts, definitions and survey schedule.

### Introduction

The Reserve Bank has been conducting comprehensive annual surveys on 'Software and Information Technology Services Exports' since 2002-03

as per the recommendations of the National Statistical Commission (2001) and subsequent guidance from the Technical Group on Computer Services Exports (TGCSE) (2008). The survey collects details of export of computer services, as defined in the *Balance of Payments and International Investment Position Manual – Sixth Edition (BPM6)* of the International Monetary Fund (IMF) and the *GATS Manual on Statistics of International Trade in Services (MSITS)* as well as other select information on ITES/BPO services exports. The survey also collects exports data as per the four modes of supply *viz.*, cross-border supply, consumption abroad, commercial presence and presence of natural persons as defined in MSITS. The previous annual round of the survey was conducted with reference period 2009-10.

### Survey Results

For the 2010-11 survey round, the schedule was canvassed among 6,400 companies of which 760 companies, including most of the large companies, responded to the survey. Among them 506 companies were common with the previous round. The responding companies together accounted for nearly 78 per cent of the estimated total software exports during the year. Software exports of the non-responding companies were estimated using median exports (see Annex I for methodological details). The Reserve Bank also collects information on export of non-physical software (off-site) from Indian companies, in SOFTEX forms. Reconciliation of survey estimates of software exports with the estimates of *National Association of Software and Services Companies (NASSCOM)* and SOFTEX data is presented in the Box item.

### Software Services Exports from India during 2010-11

Total software services exports from India during 2010-11 is estimated at ` 2,170.1 billion, which was 18.1 per cent higher than in the previous year (` 1,836.9 billion) (Table 1). These exports are categorised under two major heads: (i) *Computer Services* and (ii) *ITES/BPO Services*, which had shares of 73.7 per cent and 26.3 per cent, respectively, in total export of software

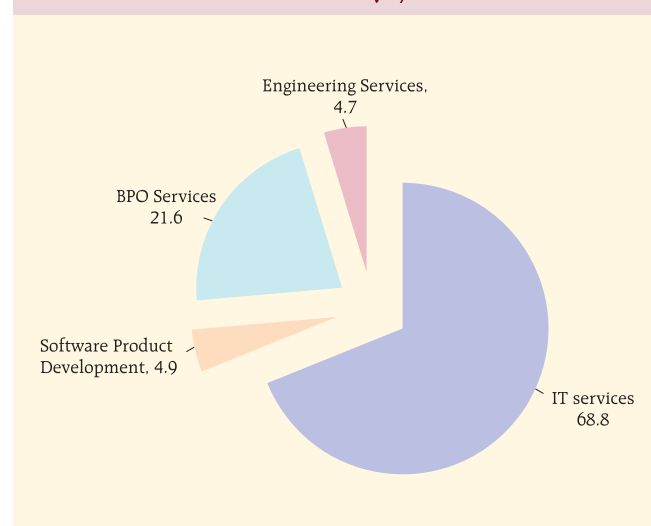
services during 2010-11. The surge in software services exports during 2010-11 was led by *computer services*, which recorded 26.2 per cent export growth to reach ` 1,598.4 billion in 2010-11, whereas *ITES/BPO services* export remained nearly flat at ` 571.7 billion. In accordance, the share of *computer services* in total software services exports increased to 73.7 per cent in 2010-11 (69.0 per cent in 2009-10), whereas the share of *ITES/BPO services* declined to 26.3 per cent in 2010-11 (31.0 per cent in 2009-10).

Within *computer services*, *IT services* remained the dominant component which recorded 33.7 per cent growth in exports, even as exports of the *Software Product Development* component recorded a decline. In the *ITES/BPO services* category, the decline in exports of *Engineering services* during 2010-11 was squared-off by *BPO services* exports to make the category export comparable with the previous year's level (Chart 1 and Table 1).

### Industry-wise Distribution of ITES/BPO Services Exports

The classification given by the Department of Information Technology (DIT-2003), Government of India, was used for compilation of data on export of *ITES/BPO services*. Export of *Engineering services* declined by 25.9 per cent in 2010-11 from the level in

**Chart 1: Activity-wise Software Exports of India in 2010-11 (%)**



**Table 1: Software Services Exports from  
India – 2010-11**

(` billion)			
Activity	2009-10	2010-11	Growth (%)
	1	2	3
<b>A) Computer Services</b>	<b>1,266.6</b>	<b>1,598.4</b>	<b>26.2</b>
<i>Of which:</i> i) IT services	1,115.8	1,492.2	33.7
ii) Software Product Development	150.8	106.2	-29.6
<b>B) ITES/BPO Services</b>	<b>570.3</b>	<b>571.7</b>	<b>0.2</b>
<i>Of which:</i> i) BPO Services	431.3	468.7	8.7
ii) Engineering Services	139.0	103.0	-25.9
<b>Total Export of Software Services (A+B)</b>	<b>1,836.9</b>	<b>2,170.1</b>	<b>18.1</b>

2009-10, while BPO services exports recorded a growth of 8.7 per cent (Table 2).

Among the major activities in *BPO services*, exports of *Customer interaction services* (12.2 per cent share in total ITES/BPO services exports) declined by 32.3 per cent whereas *Finance & Accounting related services* (with 13.4 per cent share) increased by 13.1

per cent during 2010-11. Among the *Engineering services*, 184.4 per cent export growth, over a low base, was recorded in *Embedded solutions* and 15.7 per cent in *Product Design Engineering*, whereas exports of *Industrial automation and Enterprise Asset Management* and *Other Engineering Service* registered a decline. *Other BPO service (including Legal services, Animation, Gaming, Pharmaceuticals & biotechnology services etc.)*, which constituted more than half of the total ITES/BPO services exports, recorded a substantial rise of 26.3 per cent during the year.

### Organisation-wise Distribution of Software Services Exports

The public limited companies accounted for a higher share of 61.3 per cent of the total software services exports in 2010-11 (58.1 per cent share in 2009-10). During 2010-11, software services export by public limited companies increased by 24.7 per cent to ` 1,330.7 billion, whereas software exports by private limited companies recorded a lower growth of 15.8 per cent to ` 836.3 billion (Table 3).

**Table 2: Activity-wise Distribution of ITES/BPO Services Exports**

Activity	2009-10			2010-11			Annual Growth in ` (%)
	Amount (in billion)		Share (%)	Amount (in billion)		Share (%)	
	`	US\$ *		`	US\$ *		
	1	2	3	4	5	6	
<b>BPO Services</b>	<b>431.33</b>	<b>9.10</b>	<b>75.6</b>	<b>468.64</b>	<b>10.28</b>	<b>82.0</b>	<b>8.7</b>
Customer interaction services	102.74	2.17	18.0	69.60	1.53	12.2	-32.3
Finance and Accounting, auditing, book keeping and tax consulting services	67.63	1.43	11.9	76.49	1.68	13.4	13.1
HR Administration	7.63	0.16	1.3	2.95	0.06	0.5	-61.3
Procurements and logistics	1.51	0.03	0.3	2.75	0.06	0.5	82.1
Medical transcription	2.37	0.05	0.4	3.45	0.08	0.6	45.6
Document Management	1.60	0.03	0.3	3.54	0.08	0.6	121.3
Content development, management and publishing	5.94	0.13	1.0	4.35	0.10	0.8	-26.8
Other BPO service	241.91	5.10	42.4	305.51	6.69	53.4	26.3
<b>Engineering Services</b>	<b>138.98</b>	<b>2.93</b>	<b>24.4</b>	<b>103.03</b>	<b>2.26</b>	<b>18.0</b>	<b>-25.9</b>
Embedded Solutions	4.79	0.10	0.8	13.62	0.30	2.4	184.4
Product Design Engineering (mechanical, electronic excluding software)	42.71	0.90	7.5	49.41	1.08	8.6	15.7
Industrial automation and enterprise asset management	14.61	0.31	2.6	3.13	0.07	0.6	-78.6
Other Engineering service	76.87	1.62	13.5	36.87	0.81	6.4	-52.9
<b>Total</b>	<b>570.33</b>	<b>12.03</b>	<b>100.0</b>	<b>571.67</b>	<b>12.54</b>	<b>100.0</b>	<b>0.2</b>

\* Using annual average Rupee/Dollar exchange rate.

**Table 3: Organisation-wise Distribution of Software Services Exports**

Types of Organisation	2009-10		2010-11		Annual Growth in (%)		
	Amount (in billion)		Amount (in billion)				
		US\$ *		US\$ *			
	1	2	3	4		5	6
Private Limited Companies	722.3	15.2	39.3	836.3	18.3	38.5	15.8
Public Limited Companies	1,066.7	22.5	58.1	1,330.7	29.2	61.3	24.7
Others	47.9	1.0	2.6	3.1	0.1	0.2	-93.5
<b>Total</b>	<b>1,836.9</b>	<b>38.7</b>	<b>100.0</b>	<b>2,170.1</b>	<b>47.6</b>	<b>100.0</b>	<b>18.1</b>

\* For footnote please refer to Table 2.

### Country-wise Distribution of Software Services Exports

United States remained the major destination for software services exports from India. United States and Canada together accounted for 65.0 per cent of total software services exports in 2010-11, registering 24.0 per cent growth over the previous year. Though the share of software services exports to European countries declined to 23.5 per cent in 2010-11 from 26.5 per cent in 2009-10, it recorded 4.4 per cent rise in value terms (Table 4 and Chart 2), which was mainly led by 42.3 per cent increase in export of software services to United Kingdom. Software exports to Asian countries recorded 24.7 per cent rise in value terms and the share of the region increased marginally to 5.1 per cent from

4.9 per cent in 2009-10. There was a 15.7 per cent decline in software services exports to the South Asia. Software exports to Australia and New Zealand together registered 40.9 per cent growth in 2010-11 with their share increased to 2.7 per cent from 2.3 per cent in 2009-10.

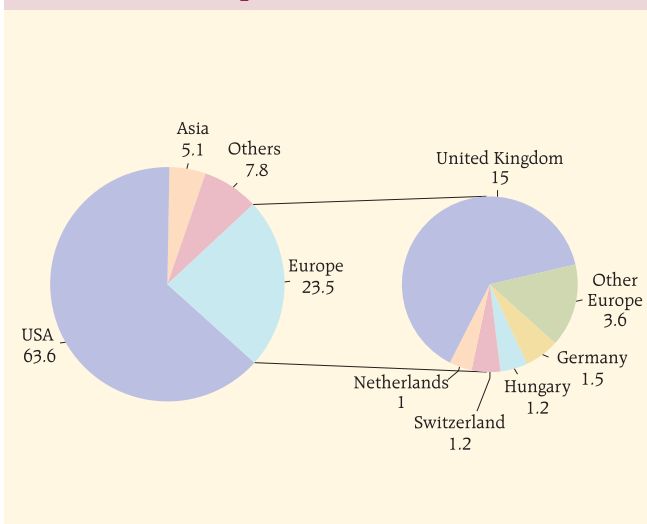
### Currency Composition of Software Services Exports

With 75.3 per cent share, the US Dollar (USD) remained the major currency of invoicing the software exports while invoicing in terms of Euro accounted for 7.0 per cent. The value of invoicing in USD and Euro increased by 16.8 per cent and 20.3 per cent, respectively, in 2010-11. The share of Pound Sterling (GBP) was 9.8 per cent and recorded 11.6 per cent rise in value terms.

**Table 4: Destination of Software Services Exports**

Activity	2009-10		2010-11		Annual Growth in (%)		
	Amount (in billion)		Amount (in billion)				
		US\$ *		US\$ *			
	1	2	3	4		5	6
USA & Canada	1,137.8	24.0	61.9	1,410.4	30.9	65.0	24.0
Europe	487.1	10.3	26.5	508.4	11.1	23.5	4.4
<i>of which:</i> UK	228.6	4.8	12.4	325.4	7.1	15.0	42.3
Asia	89.7	1.8	4.9	111.9	2.5	5.1	24.7
<i>of which:</i> East Asia	70.0	1.4	3.8	87.4	1.9	4.0	24.9
West Asia	14.6	0.3	0.8	20.2	0.5	0.9	38.4
South Asia	5.1	0.1	0.3	4.3	0.1	0.2	-15.7
Australia & New Zealand	42.1	0.9	2.3	59.3	1.3	2.7	40.9
Other countries	80.2	1.7	4.4	80.1	1.8	3.7	-0.1
<b>Total</b>	<b>1,836.9</b>	<b>38.7</b>	<b>100.0</b>	<b>2,170.1</b>	<b>47.6</b>	<b>100.0</b>	<b>18.1</b>

\* For footnote please refer to Table 2.

**Chart 2: Country-wise Distribution of Software Exports 2010-11 (%)**

The share of Australian Dollar (AUD) and Indian Rupee (INR) was low but they recorded high growth in 2010-11 (Table 5 and Chart 3).

### Software Services Exports – Type of Service

Software services are exported through both on-site and off-site routes, the latter accounting for dominant share (79.3 per cent) in total software exports. During 2010-11, export growth of on-site

**Table 5: Currency composition of Invoice – Software Services Exports**

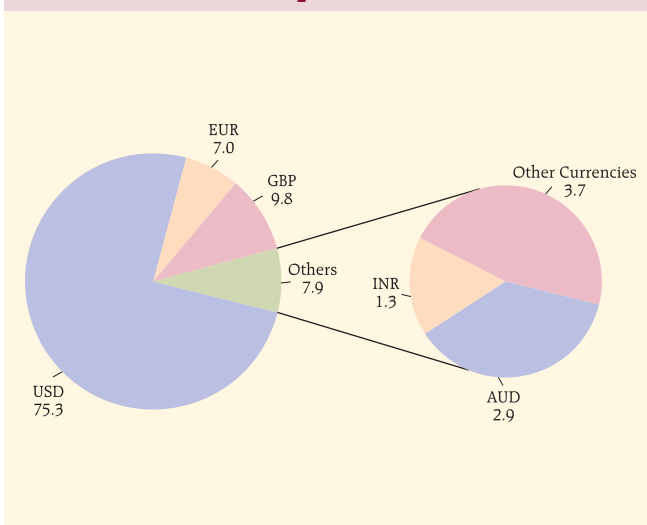
Currency	2009-10		2010-11		Annual Growth in ` (%)		
	Amount (in billion)		Amount (in billion)				
	US\$ *	Share (%)	US\$ *	Share (%)			
	1	2	3	4	5	6	7
USD	1,398.9	29.5	76.2	1,633.4	35.8	75.3	16.8
EUR	126.4	2.7	6.9	152.0	3.3	7.0	20.3
GBP	190.8	4.0	10.4	212.9	4.7	9.8	11.6
AUD	34.7	0.7	1.9	63.6	1.4	2.9	83.3
INR	20.3	0.4	1.1	28.3	0.6	1.3	39.4
Other Currencies	65.8	1.4	3.6	79.9	1.8	3.7	21.4
<b>Total</b>	<b>1,836.9</b>	<b>38.7</b>	<b>100.0</b>	<b>2,170.1</b>	<b>47.6</b>	<b>100.0</b>	<b>18.1</b>

\* For footnote please refer to Table 2.

services (13.6 per cent) was lower than the growth in off-site services (19.4 per cent) (Table 6).

### Size-wise Classification of Software Services Exports

Large companies having export size of ` 1 billion and above accounted for the 94.6 per cent of total software services exports in 2010-11. The share of off-site services delivered by the large companies was 72.1 per cent of their total software exports, in case of

**Chart 3: Currency Composition of Invoice – Software Exports 2010-11 (%)****Table 6: Software Services Exports – Type of Services-wise**

Type of Services	2009-10		2010-11		Annual Growth in ` (%)		
	Amount (in billion)		Amount (in billion)				
	US\$ *	Share (%)	US\$ *	Share (%)			
	1	2	3	4	5	6	7
On-site Services ((Mode 4	396.2	8.3	21.6	450.1	9.9	20.7	13.6
Off-site Services (Mode 1 & (Mode 2	1,440.7	30.4	78.4	1,720.0	37.7	79.3	19.4
<b>Total</b>	<b>1,836.9</b>	<b>38.7</b>	<b>100.0</b>	<b>2,170.1</b>	<b>47.6</b>	<b>100.0</b>	<b>18.1</b>

\* For footnote please refer to Table 2.

**Table 7: Software Services Exports in 2010-11 – Export Size & Other Characteristics**

Export Size (` million)	Share in Exports	Destination of Exports			Types of Exports	
		USA & Canada	European Countries	Others Countries	On-site Services	Off-site Services
		1	2	3	4	5
< 10	0.1	71.6	11.9	16.5	3.3	96.7
10 – 100	0.7	64.8	18.4	16.8	6.0	94.0
100 – 1000	4.6	65.7	23.1	11.2	2.7	97.3
>= 1000	94.6	65.0	23.5	11.5	27.9	72.1
<b>All Companies</b>	<b>100.0</b>	<b>65.0</b>	<b>23.4</b>	<b>11.6</b>	<b>26.6</b>	<b>73.4</b>

smaller companies, the said share was more than 90 per cent (Table 7).

### Software Business as per Modes of Supply

As per MSITS (2002) guidelines, international trade in services can be conducted through four different modes, *viz.*,

- (i) transactions between resident and non-resident covering Mode-1 (cross-border supply), Mode-2 (consumption abroad) and Mode-4 (presence of natural person), and
- (ii) services provided locally by the affiliates established abroad, *i.e.*, Mode-3 (commercial presence).

However, as per the BoP Manual, foreign affiliates established abroad are treated as the domestic units in the host economy and hence the services delivered by them are not considered as the exports of the home country. To this extent, data on services exports in BoP differs from those in the Foreign Affiliates Trade Statistics (FATS).

In the present survey, the software services trade data are collected on all the four modes of supply. The total international trade in software services by India through all modes stood at ` 2,547.8 billion in 2010-11. Mode-1 accounted for 67.4 per cent of total international trade in software services by India whereas the shares of Mode-4 and Mode-3 were also double-digit but Mode-2 accounted for a negligible share (Table 8). Small companies delivered 82.3 to 91.0 per cent of their software services exports through Mode-1 (cross-border supply). This mode had nearly two-third share in large companies' software services exports.

### Software Business of Subsidiaries/ Associates Abroad

The survey also collected the information on the software business of foreign subsidiaries/associates of Indian companies (foreign affiliates), under the heads of software business done in host country, locally, to India and to other countries, for the purpose of Foreign Affiliates Trade in Services (FATS). Total software business of the Indian-owned foreign affiliates

**Table 8: International Trade of Indian Software Services in 2010-11**

Export Size (` million)	Amount (` billion)					Share in Total (per cent)			
	Mode 1	Mode 2	Mode 3	Mode 4	Total	Mode 1	Mode 2	Mode 3	Mode 4
	1	2	3	4	5	6	7	8	9
< 10	1.4	0.1	0.2	–	1.7	82.3	5.9	11.8	–
10 – 100	14.8	0.2	1.3	0.5	16.8	88.1	1.2	7.7	3.0
100 – 1000	104.7	1.3	7.3	1.9	115.2	91.0	1.1	6.3	1.6
>= 1000	1,597.5	0.0	368.9	447.7	2,414.1	66.2	0.0	15.3	18.5
<b>All Companies</b>	<b>1,718.4</b>	<b>1.6</b>	<b>377.7</b>	<b>450.1</b>	<b>2,547.8</b>	<b>67.4</b>	<b>0.1</b>	<b>14.8</b>	<b>17.7</b>

Mode 1: Cross Border Supply; Mode 2: Consumption Abroad; Mode 3: Commercial Presence; Mode 4: Presence of Natural Persons  
–: negligible

**Table 9: Software Business by Foreign Affiliates  
of Indian companies in 2010-11  
(Activity-wise Distribution)**

(` billion)

Activity	Software business by Foreign Affiliates		
	Locally	To India	Other Countries
	1	2	3
IT services	17.88	0.18	1.63
Software Product Development	4.70	0.01	0.64
BPO Services	15.23	0.55	9.11
Engineering Services	1.71	0.26	0.00
Other services	338.20	4.37	26.73
<b>Total</b>	<b>377.72</b>	<b>5.37</b>	<b>38.11</b>

(excluding the services made available to India) was valued at ` 415.8 billion during 2010-11 (Table 9).

Software services provided by the Indian-owned foreign affiliates were mainly in the respective host country. Indian companies were classified into four major activity categories, *viz.*, IT services, Software product development, BPO services and Engineering services. Companies providing a combination of these services were classified under 'Others'. These multi-service providing companies remained the major source for generating software business outside India.

**Table 10: Software business by Foreign Affiliates  
of Indian Companies in 2010-11  
(Country-wise Distribution)**

(` billion)

Country	Share in Total Software business by foreign affiliates (%)	Software business by foreign affiliates		
		Locally	To India	Other Countries
		1	2	3
USA	67.6	271.93	4.40	8.17
United Kingdom	6.8	26.40	0.87	1.24
Singapore	3.4	8.87	0.03	5.22
Germany	2.5	10.17	0.00	0.50
Canada	2.7	11.44	0.00	0.10
Japan	0.6	2.68	0.00	0.05
Malaysia	0.2	0.82	0.00	0.17
Australia	1.2	4.97	0.00	0.00
Other Countries	15	40.44	0.07	22.66
<b>Total</b>	<b>100</b>	<b>377.72</b>	<b>5.37</b>	<b>38.11</b>

Indian-owned affiliates in USA contributed over two-third of business done by the foreign affiliates. Among the remaining, Indian software companies in United Kingdom, Singapore, Canada and Germany accounted for 6.8 per cent, 3.4 per cent, 2.7 per cent and 2.5 per cent, respectively in total software business of the Indian-owned foreign affiliates (Table 10).

#### Box: Comparison of survey results with NASSCOM and Softex data

The Reserve Bank of India (RBI) collects the information of software exports through SOFTEX forms filed by software companies which accounts for only non-physical offsite software exports. As per the SOFTEX forms filed by Indian companies to the RBI, non-physical (off-site) software exports stood at ` 1,569.6 billion in 2010-11 which does not include on-site software exports. Adding the on-site software exports of ` 450.1 billion, as reported in the survey, the total software services exports in 2010-11 worked out to ` 2,019.7 billion.

RBI publishes the software exports data in BoP using reporting by Authorised Dealers and STPI

and also the software exports data released by the NASSCOM. NASSCOM publishes exports of IT-BPO industry which is based on the global software business of the Indian software companies, *i.e.*, software exports of Indian companies together with the software business of their overseas subsidiaries. Accordingly, in order to make the data generated through the RBI's survey on Software & ITES/BPO Services Exports comparable with NASSCOM data, the software business of overseas subsidiaries of Indian companies have been added to the estimated software services exports of India, based on the survey.

**Box: Comparison of survey results with NASSCOM and Softex data (Concl.)****Reconciliation of Software Exports of India during 2010-11**

(` billion)

Software exports as per NASSCOM (Global business)	Software Exports based on annual survey			Software Exports based on annual survey and Softex data		
	Indian companies (Mode 1, Mode 2 & Mode 4)	Subsidiaries abroad (Mode 3 & export of Subsidiaries other than India)	Global business	Offsite Non-physical software exports based on Softex data (Mode 1 & Mode 2)	Onsite software exports based on survey (Mode 4)	Total Software Exports of India
1	2	3	4=(2)+(3)	4	5	6=(5)+(6)
2,689.0	2,170.1	415.8	2,585.9	1,569.6	450.1	2,019.7

Based on the survey, export of software services from India in 2010-11 was estimated at `2,170.1 billion (US\$ 47.6 billion) and the software business done by the Indian subsidiaries abroad in 2010-11 was estimated at `415.8 billion (US\$ 9.1 billion). Thus, the global software export of India based on the survey was `2,585.9 billion (US\$ 56.7 billion) as against `2,689.0 billion (US\$ 59.0 billion) published

by the NASSCOM. The software business done by the overseas subsidiaries of Indian companies accounted for 16.1 per cent of the global software business, estimated through the survey.

The survey results are quite comparable with the software exports data released by NASSCOM and also with the software exports data collected through Softex forms by RBI.

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**Annex I: Methodology for estimation of Software Exports of Non-responding companies**

In total, 760 companies responded to the annual comprehensive survey covering all major companies. So, the non-responded companies were the smaller companies. Further, it was observed from data received from the responded companies that onsite export was mainly reported by the major companies. So while estimating the exports done by the non-responded companies, only offsite export was considered. As no information was available about the business activity of the non-responded companies, these were classified into 4 groups *viz.*, IT services, ITES/BPO services, Engineering services and Software Product Development based on the observed proportion. Also, the distribution of export in all the four groups *i.e.*, IT services, BPO, Engineering and Software Product Development was highly positively skewed. So median exports done by each of these groups was used for estimating the exports done by respective group of business. The detailed methodology for estimation of exports is given below. Using the methodology, the software services exports of non-respondent companies was estimated to the tune of `479 billion (around 22.0 per cent of total software services exports). To estimate other distributional patterns of exports, observed proportions were used.

Annual survey on Software and IT Services Exports for the period 2010-11 was launched canvassing around 6,400 Software and ITES/BPO companies. Of these, 876 companies responded to the survey which includes 116 NIL and closed companies. All the major software and IT/BPO companies responded to the survey. Using the observed proportion, number of NIL and closed companies have been estimated from 5,524 non-responded companies and software

exports have been estimated for the remaining 4,793 non-responded companies, using the following method:

- I. Based on the ITES/BPO reported activity, companies have been classified in four groups, *viz.*; IT Services, ITES/BPO Services, Engineering Services and Software Product Services (having 100 per cent business under respective group).
- II. For classifying the other companies having combination of these as their business activity, reported proportions of their exports done in IT, BPO, Engineering and Software Product services have been used.
- III. Based on the reported data, it was observed that 'On-site' software export was primarily reported by the major companies. Therefore, only offshore software exports component was used for estimating software export of non-responded companies.
- IV. As the observed distribution of exports was highly positively skewed in each of these groups, median was used for estimating software exports in each group.

Estimated software exports for  $i^{\text{th}}$  group of non-respondent companies

$$= \text{median of } i^{\text{th}} \text{ group} * \left[ \frac{\# \text{ reported companies in } i^{\text{th}} \text{ group}}{\text{total no. of reported companies}} \right] * [\# \text{ non-responding companies}]$$

Then, the total software exports of India has been compiled as the sum of reported software exports and the estimated software export for non-responded companies in each of the four groups.