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Survey on Foreign Collaboration in Indian Industry: 2016–2018 – Data Release

Today, the Reserve Bank released the [results](#) of the twelfth round of the biennial survey on Foreign Collaboration in Indian Industry covering the financial years 2016-17 and 2017-18, on its website¹.

Domestic efforts in building technological support for economic development are often supplemented by foreign technical collaboration, which is a frequent component in cross-border financial partnerships in corporate management. In India, foreign collaborations have a long history and the strengthening of the country's integration with the global economy has resulted in an increase in such financial and technical alliances, often by setting up of cross-border subsidiaries.

Regular assessment of the dimensions and impact of technological collaboration on various aspects of economic development is useful for informing the setting of macroeconomic policies. Accordingly, the Reserve Bank has been conducting the survey on foreign collaboration in Indian industry since the 1960s, to gauge the nature of collaboration and to analyse its impact. After introduction of the mandatory census on foreign liabilities and assets (FLA) of Indian direct investment companies in 2011, this survey was restructured in 2012 to supplement the FLA census. It focuses on the major operational facets of the Indian companies that have technical collaboration agreements with foreign companies ([survey schedule is attached](#)).

Highlights:

I. Coverage: In the latest round of the survey, 877 Indian entities that responded, of which, 334 companies reported 620 foreign technical collaboration (FTC) agreements. Out of these 334 companies, 206 were foreign subsidiaries (single foreign investor holding majority equity) and 83 were foreign associates (foreign investors' equity holding ranging between 10-50 per cent). Thus, an overwhelming majority of the FTC companies also had overseas financial collaboration. Only eight companies had pure technical collaborations ([Table 1](#)). Incidentally, 189 of the 334 FTC companies are common in relation to the previous survey round and 145 are new in the sample.

II. Industry-wise Agreements: Over 80 per cent of the reported FTC agreements were in the manufacturing sector where motor vehicles, machinery and other equipment, chemicals and chemical products had major share. Relative to the previous survey round, there is an increase in such agreement in the construction sector, the share of which in total output has been growing. The share of services sector in FTC agreements continues to be much lower than its share in the economy ([Table 2](#)).

¹ The results of the eleventh round of the Survey on Foreign Collaboration in Indian Industry for the period 2014-16 were released on the RBI website on [March 22, 2017](#).

III. Partner Country Profile: In terms of source country for technology transfer, Japan accounted for nearly a third of the FTC agreements followed by USA and Germany: these three partner countries together accounted for nearly 60 per cent of the reported FTC agreements. The UK, Italy, Republic of Korea and Switzerland were other major collaborators ([Table 3](#)).

IV. Asset transfer and Payment Mode: Nearly two-thirds of the FTC agreements involved know-how transfer by the foreign collaborator and another 11 per cent involved use of trademarks / brand names ([Table 4](#)). Around half of the FTCs provided for royalty payment and some of them also had additional clauses for lump-sum technical fees. Only 16 per cent of the reported contracts were based on pure lump-sum technical fees payments ([Table 5](#)).

V. Export Restriction Clauses and Exclusive Rights Provisions: Export restriction clauses are typically written into FTCs by foreign collaborators intending to protect their own markets. On the other hand, local collaborators often obtain exclusive rights on assets transferred under the agreement so that the foreign collaborator is restrained from transferring such assets to another local party. At the aggregate level, around 32 per cent of reported FTC agreements had export restriction clauses and nearly 37 per cent had provision for exclusive rights on assets transferred under the agreements.

Over a third of the FTC agreements in the manufacturing sector had export restriction clauses whereas it was less than 10 per cent for the services sector. In the manufacturing sector, In the manufacturing sector, the export-intensive rubber and plastic, fabricated metal products, motor vehicles, machinery and equipment sectors had lower export restriction clauses. In case of Japan, which was the largest collaborator country, nearly 43 per cent of agreements had export restriction clauses ([Tables 6, 7, 8 and 10](#)).

VI. Value of Production: The total value of production of the FTC reporting companies in the sample increased by 13.8 per cent in 2017-18 to 5,317 billion, of which, nearly 80 per cent related to the manufacturing sector ([Tables 9](#)).

VII. Exports and Imports: Led by the manufacturing sector, exports and imports of FTC reporting companies increased by 10.5 per cent and 28.3 per cent, respectively, in 2017-18. At the aggregate level, the ratio of exports and imports to value of production stood at 13.8 per cent and 18.9 per cent, respectively, with large inter-sectoral variations. ([Tables 10 and 11](#)).

VIII. Profitability: The average profitability of FTC reporting companies, measured by the ratio of gross profit to capital employed, moderated when compared to the previous two survey rounds ([Table 12](#)).

Table 1: Company Group-wise Number of Companies having Foreign Technical Collaboration

Company Group	Number of Companies
Foreign Subsidiary	206
Foreign Associate	83
Pure Technical Collaboration	8
Others (<i>Foreign Equity less than 10 per cent or only Outward investment</i>)	37
Total	334

Table 2: Industry-Wise Distribution of Agreements of FTC Companies

Industry	Eleventh Round (2014-15 to 2015-16)		Twelfth Round (2016-17 to 2017-18)	
	Number	% of Total	Number	% of Total
A. Agriculture-related, Plantation and Allied Activities	22	3.7	7	1.1
B. Mining & Quarrying	1	0.2	1	0.2
C. Manufacturing	471	79.8	501	80.8
1.Food Products	13	2.2	7	1.1
2.Beverages and Tobacco products	0	0.0	1	0.2
3.Textiles	2	0.3	3	0.5
4.Wearing Apparel	0	0.0	2	0.3
5.Leaner & Related Products	2	0.3	1	0.2
6.Wood & Products of Wood and Cork ; Except Furniture	0	0.0	0	0.0
7.Printing and Reproduction of Recorded Media	0	0.0	0	0.0
8.Coke and Refined Petroleum Products	4	0.7	2	0.3
9.Chemicals and Chemical Products	42	7.1	44	7.1
10.Pharmaceuticals, Medicinal Chemical and Botanical Products	27	4.6	31	5.0
11.Rubber and Plastics Products	11	1.9	12	1.9
12.Other Non-metallic Mineral Products	1	0.2	2	0.3
13.Fabricated metal Products; Except Machinery and Equipment	9	1.5	11	1.8
14.Computer, Electronic and Optical Products	6	1.0	4	0.6
15.Electrical Equipment	24	4.1	25	4.0
16.Machinery and Equipment N.E.C.	61	10.3	63	10.2
17.Motor vehicles, Trailers and Semi-Trailers	69	11.7	85	13.7
18.Other Transport Equipment	49	8.3	45	7.3
19.Other Manufacturing	151	25.6	163	26.3
D. Electricity, Gas, Steam and Air Conditioning Supply	0	0.0	0	0.0
E. Water Supply; Sewerage, Waste Management and Remediation activities	0	0.0	0	0.0
F. Construction	14	2.4	28	4.5
G. Services	82	13.9	83	13.4
1. Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	1	0.2	8	1.3
2. Repair and Installation of Machinery and Equipment	6	1.0	8	1.3
3. Accommodation and Food Service Activities	5	0.8	9	1.5
4. Information and Communication	19	3.2	7	1.1
5. Financial and Insurance Activities	5	0.8	5	0.8
6. Real Estate Activities	0	0.0	0	0.0
7. Other Service Activities	46	7.8	46	7.4
Total	590	100.0	620	100.0

Note: The sum of the constituent items may not add to the total due to rounding off. (Also applicable to other tables)

Table 3: Country-wise Distribution of Agreements of FTC Companies

Country	Eleventh Round (2014-15 to 2015-16)		Twelfth Round (2016-17 to 2017-18)	
	Number	% of Total	Number	% of Total
Japan	200	33.9	203	32.7
USA	82	13.9	95	15.3
Germany	63	10.7	72	11.6
UK	30	5.1	39	6.3
Singapore	9	1.5	10	1.6
Italy	27	4.6	41	6.6
Republic of Korea	22	3.7	21	3.4
Switzerland	17	2.9	19	3.1
France	20	3.4	17	2.8
Others	120	20.3	103	16.6
Total	590	100.0	620	100.0

Table 4: Distribution of Agreements According to Type of Assets Transferred of FTC Companies

Asset transferred	Eleventh Round (2014-15 to 2015-16)		Twelfth Round (2016-17 to 2017-18)	
	Number	% of Total	Number	% of Total
Know-how	405	68.6	398	64.2
Trademark/ Brand Name	59	10.0	65	10.5
Patent	4	0.7	14	2.3
Others	122	20.7	143	23.0
Total	590	100.0	620	100.0

Table 5: Distribution of Agreements According to Mode of Payment of FTC Companies

Mode of Payment	Eleventh Round (2014-15 to 2015-16)		Twelfth Round (2016-17 to 2017-18)	
	Number	% of Total	Number	% of Total
Royalty	268	55.4	271	51.9
Lump Sum Technical Fees	67	13.8	78	15.0
Both Royalty and Lump-Sum Technical Fees	149	30.8	173	33.1
Total	484	100.0	522	100.0

* Of the 620 agreements, 522 agreements reported along with the specific mode of payment in the present survey.

Table 6: Industry-wise Agreements with Exports Restrictive Clauses of FTC Companies

Industry	Eleventh Round (2014-15 to 2015-16)			Twelfth Round (2016-17 to 2017-18)		
	Total Number of Agreement	Number of Agreements with Export Restrictive Clauses	% of Agreements with Export Restrictive Clauses	Total Number of Agreement	Number of Agreements with Export Restrictive Clauses	% of Agreements With Export Restrictive Clauses
A. Agriculture-related, Plantation and Allied Activities	22	2	4.5	7	1	14.3
B. Mining & Quarrying	1	0	0.0	1	0	0.0
C. Manufacturing	471	176	37.4	501	183	36.5
1.Food Products	13	3	23.1	7	2	28.6
2.Beverages & Tobacco Products	0	0	0.0	1	0	0.0
3.Textiles	2	0	0.0	3	1	33.3
4.Wearing Apparel	0	0	0.0	2	0	0.0
5.Leaner & Related Products	2	1	50.0	1	1	100.0
6.Wood & Products of Wood and Cork, Except Furniture	0	0	0.0	0	0	0.0
7.Printing and Reproduction of Recorded Media	0	0	0.0	0	0	0.0
8.Coke and Refined Petroleum Products	4	0	0.0	2	0	0.0
9.Chemicals and Chemical Products	42	5	11.9	44	4	9.1
10.Pharmaceuticals, Medicinal Chemical & Botanical Products	27	18	66.7	31	18	58.1
11.Rubber and Plastics Products	11	3	27.3	12	4	33.3
12.Other Non-Metallic Mineral Products	1	0	0.0	2	0	0.0
13.Fabricated Metal Products, Ex. Machinery & Equipment	9	4	44.4	11	5	45.5
14.Computer, Electronic & Optical Products	6	1	16.7	4	1	25.0
15.Electrical Equipment	24	12	50.0	25	9	36.0
16.Machinery & Equipment N.E.C.	61	26	42.6	63	28	44.4
17.Motor Vehicles, Trailers & Semi-Trailers	69	19	27.5	85	23	27.1
18.Other Transport Equipment	49	28	57.1	45	17	37.8
19.Other Manufacturing	151	56	37.1	163	70	42.9
D. Electricity, gas, steam & Air Conditioning Supply	0	0	-	0	0	-
E. Water supply; sewerage, Waste Management and Remediation Activities	0	0	-	0	0	-
F. Construction	14	5	35.7	28	8	28.6
G. Services	82	7	8.5	83	6	7.2
1.Wholesale and retail trade; repair of motor vehicles and motorcycles	1	1	100.0	8	1	12.5
2.Repair and installation of machinery and equipment	6	1	16.7	8	0	0.0
3.Accommodation and Food service activities	5	0	0.0	9	0	0.0
4.Information and communication	19	1	5.3	7	1	14.3
5.Financial and insurance activities	5	1	20.0	5	1	20.0
6.Real estate activities	0	0	-	0	0	-
7.Other service activities	46	3	6.5	46	3	6.5
Total	590	190	32.0	620	198	31.9

Table 7: Country-Wise Distribution of Agreements with Exports Restrictive Clauses of FTC Companies

Country	Eleventh Round (2014-15 to 2015-16)			Twelfth Round (2016-17 to 2017-18)		
	Total Number of Agreements	Number of Agreements with Export restrictive clauses	% of Agreements with Export restrictive clauses	Total Number of Agreements	Number of Agreements with Export restrictive clauses	% of Agreements with Export restrictive clauses
Japan	200	89	44.5	203	87	42.9
USA	82	20	24.4	95	31	32.6
Germany	63	17	27.0	72	13	18.1
UK	30	9	30.0	39	14	35.9
Singapore	9	2	22.2	10	2	20.0
Italy	27	7	25.9	41	5	12.2
Republic Of Korea	22	2	9.1	21	2	9.5
Switzerland	17	9	52.9	19	9	47.4
France	20	5	25.0	17	4	23.5
Others	120	29	24.2	103	31	30.1
Total	590	189	32.0	620	198	31.9

Table-8: Industry-Wise Distribution of Agreements with Provision of Exclusive Rights of FTC Companies

Industry	Eleventh Round		Twelfth Round	
	(2014-15 to 2015-16)		(2016-17 to 2017-18)	
	Number of Agreements with Exclusive Rights	% of Total Number of Agreements	Number of Agreements with Exclusive Rights	% of Total Number of Agreements
A. Agriculture-related, Plantation and Allied Activities	14	63.6	7	100.0
B. Mining & Quarrying	0	0.0	0	0.0
C. Manufacturing	173	36.7	196	39.1
1.Food Products	7	53.8	5	71.4
2.Beverages & Tobacco Products	0	-	0	0.0
3.Textiles	2	100.0	2	66.7
4.Wearing Apparel	0	-	2	100.0
5.Leaner & Related Products	1	50.0	1	100.0
6.Wood & Products of Wood and Cork, Except Furniture	0	-	0	-
7.Printing and Reproduction of Recorded Media	0	-	0	-
8.Coke and Refined Petroleum Products	1	25.0	2	100.0
9.Chemicals and Chemical Products	12	28.6	8	18.2
10.Pharmaceuticals, Medicinal Chemical & Botanical Products	20	74.1	22	71.0
11.Rubber and Plastics Products	5	45.5	6	50.0
12.Other Non-Metallic Mineral Products	1	100.0	0	0.0
13.Fabricated Metal Products, Ex. Machinery & Equipment	2	22.2	3	27.3
14.Computer, Electronic & Optical Products	2	33.3	3	75.0
15.Electrical Equipment	7	29.2	11	44.0
16.Machinery & Equipment N.E.C.	26	42.6	30	47.6
17.Motor Vehicles, Trailers & Semi-Trailers	25	36.2	30	35.3
18.Other Transport Equipment	13	26.5	14	31.1
19.Other Manufacturing	49	32.5	57	35.0
D. Electricity, gas, steam & Air Conditioning Supply	0	-	0	-
E. Water Supply; Sewerage, Waste Management and Remediation Activities	0	-	0	-
F. Construction	5	35.7	6	21.4
G. Services	20	24.4	23	27.7
1.Wholesale and retail trade; repair of motor vehicles and motorcycles	1	100.0	4	50.0
2.Repair and installation of machinery and equipment	2	33.3	0	0.0
3.Accommodation and Food service activities	0	0.0	5	55.6
4.Information and communication	8	42.1	1	14.3
5.Financial and insurance activities	0	0.0	1	20.0
6.Real estate activities	0	-	0	-
7.Other service activities	9	19.6	12	26.1
Total	212	35.9	232	37.4

Table-9: Industry-Wise Share in Value of Production of FTC Companies (₹ billion)

Industry	Value of Production		Annual Growth (per cent)	Share in VoP (2017-18)
	2016-17	2017-18		
A. Agriculture-related, Plantation and Allied Activities	7.8	9.2	17.9	0.2
B. Mining & Quarrying	0.0	0.0	-	0.0
C. Manufacturing	3711.9	4218.6	13.7	79.3
1. Food Products	41.2	41.9	1.7	0.8
2. Beverages & Tobacco Products	44.0	28.8	-34.5	0.5
3. Textiles	1.7	2.0	17.6	0.0
4. Wearing Apparel	2.3	2.1	-8.7	0.0
5. Leather & Related Products	2.4	2.1	-12.5	0.0
6. Wood & Products of Wood and Cork ; Except Furniture	0.0	0.0	-	0.0
7. Printing and Reproduction of Recorded Media	0.0	0.0	-	0.0
8. Coke and Refined Petroleum Products	5.9	7.0	18.6	0.1
9. Chemicals and Chemical Products	194.1	216.5	11.5	4.1
10. Pharmaceuticals, Medicinal Chemical and Botanical Products	34.7	33.4	-3.7	0.6
11. Rubber and Plastics Products	18.3	20.6	12.6	0.4
12. Other Non-Metallic Mineral Products	20.9	18.9	-9.6	0.4
13. Fabricated Metal Products; Except Machinery & Equipment	247.8	344.0	38.8	6.5
14. Computer, Electronic & Optical Products	24.3	25.6	5.3	0.5
15. Electrical Equipment	104.7	128.1	22.3	2.4
16. Machinery & Equipment N.E.C.	403.1	539.2	33.8	10.1
17. Motor Vehicles, Trailers & Semi-Trailers	1688.1	1808.9	7.2	34.0
18. Other Transport Equipment	72.3	120.7	66.9	2.3
19. Other Manufacturing	806.2	878.7	9.0	16.5
D. Electricity, Gas, Steam and Air Conditioning Supply	0.0	0.0	-	0.0
E. Water supply; Sewerage, Waste Management and Remediation Activities	0.0	0.0	-	0.0
F. Construction	672.5	756.9	12.6	14.2
G. Services	278.1	332.1	19.4	6.2
1. Wholesale and retail trade; repair of motor vehicles and motorcycles	14.0	16.3	16.4	0.3
2. Repair and installation of machinery and equipment	1.8	1.9	5.6	0.0
3. Accommodation and Food service activities	30.2	35.7	18.2	0.7
4. Information and communication	124.0	152.4	22.9	2.9
5. Financial and insurance activities	7.8	9.6	23.1	0.2
6. Real estate activities	0.0	0.0	-	0.0
7. Other service activities	100.4	116.3	15.8	2.2
Total	4670.2	5316.8	13.8	100.0

Table 10: Industry-Wise Distribution of Exports of FTC Companies				(₹ billion)
Industry	Export		Annual Growth	Share in Export
	2016-17	2017-18	(per cent)	(2017-18)
A. Agriculture-related, Plantation and Allied Activities	0.2	0.3	50.0	0.0
B. Mining & Quarrying	0.0	0.0	-	0
C. Manufacturing	459.2	500.1	8.9	67.9
1. Food Products	0.5	0.7	40.0	0.1
2. Beverages & Tobacco Products	2.9	1.3	-55.2	0.2
3. Textiles	0.3	0.6	100.0	0.1
4. Wearing Apparel	1.4	1.1	-21.4	0.2
5. Leather & Related Products	0.0	0.0	-	-
6. Wood & Products of Wood and Cork ; Except Furniture	0.0	0.0	-	-
7. Printing and Reproduction of Recorded Media	0.0	0.0	-	-
8. Coke and Refined Petroleum Products	0.0	0.0	-	-
9. Chemicals and Chemical Products	33.7	38.4	13.9	5.2
10. Pharmaceuticals, Medicinal Chemical and Botanical Products	15.8	15.9	0.6	2.2
11. Rubber and Plastics Products	0.9	0.7	-22.2	0.1
12. Other Non-Metallic Mineral Products	1.2	0.2	-	0.0
13. Fabricated Metal Products; Except Machinery & Equipment	0.5	0.8	60.0	0.1
14. Computer, Electronic & Optical Products	12.3	12.3	0.0	1.7
15. Electrical Equipment	29.4	41.4	40.8	5.6
16. Machinery & Equipment N.E.C.	98.2	103.6	5.5	14.1
17. Motor Vehicles, Trailers & Semi-Trailers	186.1	200.3	7.6	27.2
18. Other Transport Equipment	14.0	15.6	11.4	2.1
19. Other Manufacturing	62.1	67.3	8.4	9.1
D. Electricity, Gas, Steam and Air Conditioning Supply	0.0	0.0	-	-
E. Water Supply; Sewerage, Waste Management and Remediation Activities	0.0	0.0	-	-
F. Construction	145.5	162.0	11.3	22.0
G. Services	61.7	73.8	19.6	10.0
1. Wholesale and retail trade; repair of motor vehicles and motorcycles	1.2	1.1	-8.3	0.1
2. Repair and installation of machinery and equipment	0.2	0.2	0.0	0.0
3. Accommodation and Food service activities	0.4	0.5	25.0	0.1
4. Information and communication	44.5	53.9	21.1	7.3
5. Financial and insurance activities	0.0	0.0	-	-
6. Real estate activities	0.0	0.0	-	-
7. Other service activities	15.5	18.1	16.8	2.5
Total	666.6	736.3	10.5	100.0

Table-11 Industry-Wise Distribution of Imports of FTC Companies

₹ billion)

Industry	Import		Annual Growth (per cent)	Share in Import (2017-18)
	2016-17	2017-18		
A. Agriculture-related, Plantation and Allied Activities	0.4	0.4	0	0.0
B. Mining & Quarrying	0.0	0.0	-	-
C. Manufacturing	711.2	907.6	27.6	90.3
1.Food Products	1.7	2.0	17.6	0.2
2.Beverages & Tobacco Products	0.5	0.6	20.0	0.1
3.Textiles	0.3	0.7	133.3	0.1
4.Wearing Apparel	1.0	0.8	-20.0	0.1
5.Leaner & Related Products	0.2	0.2	0.0	0.0
6.Wood & Products of Wood and Cork ; Except Furniture	0.0	0.0	-	-
7.Printing and Reproduction of Recorded Media	0.0	0.0	-	-
8.Coke and Refined Petroleum Products	52.3	85.1	62.7	8.5
9.Chemicals and Chemical Products	50.4	57.5	14.1	5.7
10.Pharmaceuticals, Medicinal Chemical and Botanical Products	9.0	9.0	0.0	0.9
11.Rubber and Plastics Products	2.4	2.6	8.3	0.3
12.Other Non-Metallic Mineral Products	1.9	1.6	-15.8	0.2
13.Fabricated Metal Products; Except Machinery & Equipment	220.5	328.2	48.8	32.7
14.Computer, Electronic & Optical Products	10.2	11.7	14.7	1.2
15.Electrical Equipment	25.6	28.5	11.3	2.8
16.Machinery & Equipment N.E.C.	35.6	44.8	25.8	4.5
17.Motor Vehicles, Trailers & Semi-Trailers	173.2	186.4	7.6	18.6
18.Other Transport Equipment	14.3	19.2	34.3	1.9
19.Other Manufacturing	112.0	128.7	14.9	12.8
D. Electricity, Gas, Steam and Air Conditioning Supply	0.0	0.0	-	-
E. Water Supply; Sewerage, Waste Management and Remediation Activities	0.0	0.0	-	-
F. Construction	26.6	28.0	5.3	2.8
G. Services	44.6	68.8	54.3	6.8
1.Wholesale and retail trade; repair of motor vehicles and motorcycles	0.5	0.4	-20.0	0.0
2.Repair and installation of machinery and equipment	0.2	0.1	-50.0	0.0
3.Accommodation and Food service activities	0.3	0.3	0.0	0.0
4.Information and communication	39.1	63.4	62.1	6.3
5.Financial and insurance activities	0.6	0.6	0.0	0.1
6.Real estate activities	0.0	0.0	-	-
7.Other service activities	4.0	4.0	0	0.4
Total	782.9	1004.8	28.3	100.0

Table 12: Profitability Ratio of FTC Companies

(per cent)

Survey Round	Year	Gross Profit to Capital	Survey Average
Ninth round (244)	2010-11	9.8	10.0
	2011-12	10.1	
Tenth round (303)	2012-13	17.0	14.8
	2013-14	12.6	
Eleventh round (306)	2014-15	17.3	18.0
	2015-16	18.5	
Twelfth round (334)	2016-17	14.6	16.0
	2017-18	17.4	

Note: Figures in parentheses indicate the number of FTC companies