

## SECTOR WISE STRATEGY FOR IMPROVING INDIA'S TRADE BALANCE

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### ABSTRACT

With the twin problems of Current Account Deficit and Fiscal Deficit persisting for the past so many years there seems to be a case of misplaced confidence in the Economy. This paper discusses about the problems and solution road maps for tackling the current account deficit.

Whenever negative trade balance is discussed, policy makers at all levels discuss at length ways and means to boost exports. The interesting point to note is, those very companies involved in enhancing exports are considerably increasing the content of imported raw material in their exportable items. This is a vicious cycle. For having a feasible situation on our external trade front, we improve our exports only to end up with a more desperate foreign trade condition.

This paper has assimilated data over a period of twenty years to gauge the rate of growth of indigenous raw material vis-à-vis imported raw material and their proportionate value in sales (esp. export sales). All those companies who are engaged in exports are collected sector wise.

The sectors are

- |                             |                                       |
|-----------------------------|---------------------------------------|
| 1. Food and Beverages       | 9. Electronics                        |
| 2. Textiles                 | 10. Transport Equipment Manufacturing |
| 3. Chemicals                | 11. Paper and News print              |
| 4. Non metallic minerals    | 12. Leather products                  |
| 5. Ferrous metals           | 13. Books and Cards                   |
| 6. Non ferrous metals       | 14. Wood                              |
| 7. Electrical Machinery     | 15. Media Print                       |
| 8. Non Electrical Machinery | 16. Mining                            |
|                             | 17. Electricity                       |

In majority of the cases it has been found that the rate of consumption of imported raw material has increased more than the consumption of indigenous raw material. In some cases, the growth rate between the two has been more or less equal, but the proportion of imported raw material in export sales has been increasing throughout the period under study.

A focused strategy of indigenization has to be chalked out for those sectors where imported raw material content has grown at a phenomenal rate. An expert panel for the process of Indigenization comprising of knowledge experts from relevant fields, entrepreneurs, Government representatives and related office bearers can be constituted to design the road map for achieving a positive trade balance in the years to come.

### KEYWORDS :

Imported raw material, Indigenous raw material, Mean / Initial value Growth rate, Overall Trade Balance, Proportion in export sales.

### INTRODUCTION

If one studies the merchandise trade balance from 1997 to 2009 India has been riddled with negative trade balance persistently for the past so many years.

**Trade balance between 1997-98 and 2008-09<sup>1</sup>**

Sl no	Year	TB in CR

<sup>1</sup> Trade statistics - Ministry of Commerce; website [www.commerce.nic.in](http://www.commerce.nic.in). For the respective years total exports have been subtracted from total imports to arrive at the trade balance.

1	1997-1998	-17,413.69
2	1998-1999	-18,499.27
3	1999-2000	-18,181.56
4	2000-2001	-11,929.62
5	2001-2002	-17,323.70
6	2002-2003	-19,805.16
7	2003-2004	-25,176.34
8	2004-2005	-29,862.31
9	2005-2006	-62,148.95
10	2006-2007	-95,376.53
11	2007-2008	-106442.46
12	2008-2009	-1,46,011.0275

Import-Export Trade Deficit between 1997-98 and 2008-09

Even if oil imports are considered, the trade balance is still negative in the case of non oil items. This adverse situation has to be reversed in the medium term. The country's strong position on the external front has to be safeguarded in terms of a consistent trade surplus, otherwise the value of its currency in International markets will suffer. A negative trade balance leads to weak currency which further leads to high cost on imports which in turn leads to further trade deficit. The end of this vicious cycle is further devaluation of currency. This cycle takes years before its effects are manifest, but by then a lot of valuable time is wasted. A concerted effort is required in increasing indigenous contents in our exports and curbing imported content so that in the long run a positive trade balance is achieved.

The paper brings out the growth rate in indigenous material vis-à-vis imported items in export companies. Data is for a period of twenty years. One table for each decade. The first column contains the year, then aggregate sales of the number of companies stated in a particular sector's table heading. This sale contains domestic sales as well. Then aggregate exports, then aggregate value of indigenous raw material, then aggregate value of imported raw material. The sixth column is a calculation of indigenous raw material as proportion of sales followed by indigenous raw material as a proportion of exports. The eight and ninth column calculate the proportion of imported raw material to sales and exports respectively. A vertical reading of the eight and ninth column will give an understanding of the increase in the content of imported raw material over the years. At the end of each sector, a summarized position is elaborated to give a focused idea on the degree of indigenization required. Figure zero indicates data unavailability for that particular year. In such cases the growth rate is calculated for the remaining years.

The tables and inference for some selected sectors follows.

## 1. FOOD AND BEVERAGES

Table 1 –A: Food and Beverages -94 companies – 1991-2000

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
1991	94659.2	8152	0	0				
1992	116691.1	12244.9	153.5	4.1	0.00	<b>1.25</b>	0.00	<b>0.03</b>
1993	130482.4	16321.7	187.5	3.2	0.14	<b>1.15</b>	0.00	<b>0.02</b>
1994	148078.3	18992.1	16.5	0	0.01	<b>0.09</b>	0.00	<b>0.00</b>
1995	173089.5	18336.6	29.7	1.4	0.02	<b>0.16</b>	0.00	<b>0.01</b>
1996	199463.4	20549.2	2036.5	4.9	1.02	<b>9.91</b>	0.00	<b>0.02</b>
1997	183930.4	19672.1	8749.1	1165	4.76	<b>44.47</b>	0.63	<b>5.92</b>
1998	212934.1	22615.6	12280.2	2717.3	5.77	<b>54.30</b>	1.28	<b>12.02</b>
1999	233987.6	21474.7	17525.1	5054.4	7.49	<b>81.61</b>	2.16	<b>23.54</b>
2000	232439.2	19685.2	57250.2	11918.7	24.63	<b>290.83</b>	5.13	<b>60.55</b>
CAGR	-0.75	-0.76	40.44	322.00	2079.44	<b>24.78</b>	161.16	<b>199.92</b>
Mn/IV	1.82	2.18	<b>71.10</b>	<b>565.56</b>	3702.87	<b>42.88</b>	291.14	<b>338.82</b>

(All Tables adapted from CMIE – PROWESS)

Table 1-B: Food and Beverages - 219 companies: 2001 - 2010

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
2001	385131.3	82163.9	119613.2	18122.4	31.06	<b>145.58</b>	4.71	<b>22.06</b>
2002	404304.3	76293.9	124157.8	23665.7	0.31	<b>162.74</b>	5.85	<b>31.02</b>
2003	427979.9	82407.2	130491.4	35898.3	30.49	<b>158.35</b>	8.39	<b>43.56</b>
2004	451961.2	90072.3	149398.5	34112.7	33.06	<b>165.87</b>	7.55	<b>37.87</b>
2005	508013.5	95388.3	145647.1	41244.6	28.67	<b>152.69</b>	8.12	<b>43.24</b>
2006	584920.8	120067.1	176456.1	57970.7	30.17	<b>146.96</b>	9.91	<b>48.28</b>
2007	660663.1	139475.2	228628.8	55213.4	34.61	<b>163.92</b>	8.36	<b>39.59</b>
2008	819991.1	170151.8	321630.6	82398.4	39.22	<b>189.03</b>	10.05	<b>48.43</b>
2009	947239.6	194976.4	340089.2	83857.3	35.90	<b>174.43</b>	8.85	<b>43.01</b>
2010	1046530	175033.5	372741	114244.5	35.62	<b>212.95</b>	10.92	<b>65.27</b>
CAGR	-0.73	-0.79	-0.69	-0.37	-0.89	<b>-0.85</b>	-0.77	<b>-0.70</b>
Mn/IV	1.62	1.49	<b>1.76</b>	<b>3.02</b>	0.96	<b>1.15</b>	1.76	<b>1.91</b>

Ist Decade growth rate (Mean / Initial Value) - Indigenous - 71.10 ; Imported – 565.56

Ist Decade Proportion to export sales – Indigenous: 1.25 → 290.83 ; Imported 0.03 → 60.55

IInd Decade growth rate (Mean / Initial Value) - Indigenous – 1.76 ; Imported – 3.02

IInd Decade proportion to export sales – Indigenous : 145.58 → 212.95 ; Imported 22.06 → 65.27

As is evident from above, growth rate for imported raw materials has been comparatively very high in the case of imported raw material and so is their consumption as a proportion of export sales. Considering both the decades together the proportion has increased from a mere 0.03 % to a whopping 65.27 %.

## 2. TEXTILES

Table 2 –A: Textiles -150 companies – 1991-2000

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
1991	102755.2	9784.6	546.6	18.7	0.53	5.59	0.02	0.19
1992	117954.6	14615.6	0	0	0.00	0.00	0.00	0.00
1993	128870.5	18358.1	2580.8	378.5	2.00	14.06	0.29	2.06
1994	145157	21783.6	5113.4	754.2	3.52	23.47	0.52	3.46
1995	172261.6	30336.3	3904.1	635.4	2.27	12.87	0.37	2.09
1996	216669.1	39773.1	1349.6	270.1	0.62	3.39	0.12	0.68
1997	222545.3	47046.3	15682.2	3991.4	7.05	33.33	1.79	8.48
1998	234471	52277.2	17326.2	3493.9	7.39	33.14	1.49	6.68
1999	240521.8	49551.2	19551.6	3029.4	8.13	39.46	1.26	6.11
2000	261781.3	49702.7	78925.7	14357.2	30.15	158.80	5.48	28.89
CAGR	-0.75	-0.49	13.44	75.78	4.67	1.84	29.14	14.11
Mn/IV	1.79	3.41	26.52	144.00	11.59	5.80	62.38	30.69

Table 2 –B: Textiles -351 companies – 2001 - 2010

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
2001	472624.6	126954.2	171322.6	36433.1	36.25	134.95	7.71	28.70
2002	422453.3	107111.9	147828.8	37730	0.35	138.01	8.93	35.22
2003	448405.8	111638.5	164561.4	31557.5	36.70	147.41	7.04	28.27
2004	471632.4	113977.7	169592.9	37774.9	35.96	148.79	8.01	33.14
2005	518676	133075.4	198989.4	44043.4	38.36	149.53	8.49	33.10
2006	535804.6	141408.5	200481.4	44383.6	37.42	141.77	8.28	31.39
2007	614876.1	175582.6	247934.8	44407.2	40.32	141.21	7.22	25.29
2008	697151.1	198743.2	364739.9	50080.5	52.32	183.52	7.18	25.20
2009	732257.9	194872.5	355000.7	60907.2	48.48	182.17	8.32	31.25
2010	770844.4	209364.2	316179.7	75077.7	41.02	151.02	9.74	35.86
CAGR	-0.84	-0.84	-0.82	-0.79	-0.89	-0.89	-0.87	-0.88
Mn/IV	1.20	1.19	1.36	1.27	1.01	1.13	1.05	1.07

Ist Decade growth rate (Mean / Initial Value ) - Indigenous - 26.52 ; Imported – 144.00

Ist Decade Proportion to export sales – Indigenous: 5.59 → 158.80 ; Imported 0.19 → 28.19

IInd Decade growth rate (Mean / Initial Value ) - Indigenous – 1.36 ; Imported – 1.27

IInd Decade proportion to export sales – Indigenous : 134.95 → 151.02 ; Imported 28.70 → 35.86

In the case of textile sector, the case is not so severe, but still the rate of growth for imported raw material in the second decade is comparable to indigenous raw material. The proportion to export sales is also continuously on the rise albeit in a halting manner.

### 3. CHEMICALS

Table 3 – A : Chemicals – 243 companies : 1991-2000

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
1991	569838.1	32630	1788.5	2358	0.31	5.48	0.41	7.23
1992	652516.5	38640.7	1936.8	3982.7	0.00	5.01	0.61	10.31
1993	738258.8	49353.5	6924.4	25378.9	0.94	14.03	3.44	51.42
1994	826633.6	54542.7	8179.9	26264.6	0.99	15.00	3.18	48.15
1995	1098300	60547.9	15900.7	24231.4	1.45	26.26	2.21	40.02
1996	1240242	76219.9	8399.6	9629.8	0.68	11.02	0.78	12.63
1997	1439427	86180.3	19145.3	39384.4	1.33	22.22	2.74	45.70
1998	1611856	86789.1	25659.9	23498.2	1.59	29.57	1.46	27.08
1999	1873768	84433.5	67231.8	92746.3	3.59	79.63	4.95	109.85
2000	2356654	102407.4	221472.5	274967.4	9.40	216.27	11.67	268.50
CAGR	-0.59	-0.69	11.38	10.66	1.99	2.95	1.82	2.72
Mn/IV	2.18	2.06	21.06	22.16	6.46	7.74	7.60	8.59

Table 3 – B: Chemicals – 593 companies : 2001-2010

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
2001	3139958	283551.8	499374.5	594938.4	15.90	176.11	18.95	209.82
2002	3088943	306133.5	470530.6	799077.9	0.15	153.70	25.87	261.02
2003	3481085	356398.3	597295	971721.8	17.16	167.59	27.91	272.65
2004	4374228	471579.7	605111.4	1087475	13.83	128.32	24.86	230.60
2005	5220463	656888.7	775429.9	1427518	14.85	118.05	27.34	217.32
2006	6029785	874796	856216.4	1974575	14.20	97.88	32.75	225.72
2007	7208671	1284469	966072.9	2576216	13.40	75.21	35.74	200.57
2008	8174943	1583544	1088664	2946339	13.32	68.75	36.04	186.06
2009	9125036	1796488	1228875	3578702	13.47	68.40	39.22	199.21
2010	9541389	1990926	1297724	3631311	13.60	65.18	38.06	182.39
CAGR	-0.70	-0.30	-0.74	-0.39	-0.91	-0.96	-0.80	-0.91
Mn/IV	1.89	3.39	1.68	3.29	0.82	0.64	1.62	1.04

Ist Decade growth rate (Mean / Initial Value ) - Indigenous – 21.06 ; Imported – 22.16

Ist Decade Proportion to export sales – Indigenous: 5.48 → 216.27 ; Imported 7.23 → 268.50

IInd Decade growth rate (Mean / Initial Value ) - Indigenous – 1.68 ; Imported – 3.29

IInd Decade proportion to export sales – Indigenous : 176.11 → 65.18 ; Imported 209.82 → 182.39

Chemical sector has been using a greater portion of imported material from the beginning years which has only increased over the period under study. Both the decades have seen a greater growth rate and an increase in imported content compared to indigenous content. A slew of chemical engineering colleges have to be opened to increase the number of professionals in the Chemical sector and retained for a focused manufacturing strategy in the sector.

#### 4 NON METALLIC MINERALS

Table 4 – A: Non Metallic minerals – 50 companies 1991- 2000

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
1991	51818.8	5436.9	0	216.4	0.00	0.00	0.42	3.98
1992	65354.8	7289.9	2991.6	434.1	0.05	41.04	0.66	5.95
1993	70882.7	9459.5	3386.4	294.8	4.78	35.80	0.42	3.12
1994	79285.5	12434.9	3961.7	485.7	5.00	31.86	0.61	3.91
1995	94137.5	15144.9	3017.3	1265.7	3.21	19.92	1.34	8.36
1996	109208.6	14998.2	3073.2	1393	2.81	20.49	1.28	9.29
1997	114263.3	15758.3	576.9	25.9	0.50	3.66	0.02	0.16
1998	118111.9	16648.7	1294.5	619.2	1.10	7.78	0.52	3.72
1999	126634	18490.2	1646.4	4802.6	1.30	8.90	3.79	25.97
2000	135856.9	20978.6	23441.5	14295.4	17.25	111.74	10.52	68.14
CAGR	-0.74	-0.61	-0.13	5.61	40.88	-0.70	1.52	0.71
Mn/IV	1.86	2.51	<b>1.45</b>	<b>11.01</b>	78.63	0.69	4.69	3.33

Table 4 – B: Non Metallic minerals – 140 companies 2001- 2010

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
2001	264480.7	76530.5	46133.6	41623.9	17.44	60.28	15.74	54.39
2002	276055.9	74026	52342.7	43428.6	0.19	70.71	15.73	58.67
2003	282148.9	92922.4	45840.9	44441	16.25	49.33	15.75	47.83
2004	318113.4	106552.4	53753	50578.5	16.90	50.45	15.90	47.47
2005	365540.7	106095.2	61957.3	45729.1	16.95	58.40	12.51	43.10
2006	421662.1	112277.9	71418.3	51990.2	16.94	63.61	12.33	46.30
2007	525615.4	139344	92308.1	73068.3	17.56	66.24	13.90	52.44
2008	609441.1	154085.1	103575.1	90770.3	17.00	67.22	14.89	58.91
2009	656864.1	156968.7	111451.7	98720.1	16.97	71.00	15.03	62.89
2010	741491.1	174240.1	118139.6	113495.7	15.93	67.80	15.31	65.14
CAGR	-0.72	-0.77	-0.74	-0.73	-0.91	-0.89	-0.90	-0.88
Mn/IV	1.69	1.56	1.64	1.57	0.87	1.04	0.93	0.99

Ist Decade growth rate (Mean / Initial Value ) - Indigenous – 1.45 ; Imported – 11.01

Ist Decade Proportion to export sales – Indigenous: 41.04 → 111.74 ; Imported 5.95 → 68.14

IInd Decade growth rate (Mean / Initial Value ) - Indigenous – 1.64 ; Imported – 1.57

IInd Decade proportion to export sales – Indigenous : 60.28 → 67.80 ; Imported 54.39 → 65.14

The story of Non Ferrous metals is equally sad. From a ind / Imp ratio of 2991 cr / 434 cr in 1991 it has become nearly equal by 2010 i.e 1,18139 cr / 1,13,495 cr respectively.

## 5 FERROUS METALS

Table 5 – A: Ferrous Metals – 62 companies – 1991 - 2000

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
1991	144708.4	5860.1	0	0	0.00	0.00	0.00	0.00
1992	167898.3	9336.2	0	0	0.00	0.00	0.00	0.00
1993	186915.7	13821.8	170.8	82.8	0.09	1.24	0.04	0.60
1994	209625.2	18308.7	753.7	86.3	0.36	4.12	0.04	0.47
1995	250320.5	17903.7	147.4	10.4	0.06	0.82	0.00	0.06
1996	289579.7	21955.9	742.5	90.9	0.26	3.38	0.03	0.41
1997	292468	23857.8	910.4	368.2	0.31	3.82	0.13	1.54
1998	282173.4	28334.1	1852.9	2212.6	0.66	6.54	0.78	7.81
1999	269280.8	21546.3	14932.4	5359.5	5.55	69.30	1.99	24.87
2000	291302.5	25174.7	70101	28709.2	24.06	278.46	9.86	114.04
CAGR	-0.80	-0.57	50.30	42.34	31.92	27.17	26.81	22.80
Mn/IV	1.65	3.18	52.47	44.59	34.30	29.75	29.07	25.01

Table 5 – B: Ferrous Metals – 195 companies – 2001 - 2010

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
2001	579358.9	65964.9	186315.6	64119.9	32.16	282.45	11.07	97.20
2002	591638.5	68718.9	198068.3	77288.9	0.33	288.23	13.06	112.47
2003	690846.7	104965	213810	84397.4	30.95	203.70	12.22	80.41
2004	868778.9	128160.7	269384.9	109835.2	31.01	210.19	12.64	85.70
2005	1225279	213060.1	345578	173981.6	28.20	162.20	14.20	81.66
2006	1270665	198198.2	324740.6	227728.8	25.56	163.85	17.92	114.90
2007	1555031	260609.2	391739.2	279341.5	25.19	150.32	17.96	107.19
2008	1847592	280201.4	473858.2	324888.6	25.65	169.11	17.58	115.95
2009	2010593	320299.7	534554.2	462848.5	26.59	166.89	23.02	144.50
2010	2028318	233644.7	524673.8	449967.9	25.87	224.56	22.18	192.59
CAGR	-0.65	-0.65	-0.72	-0.30	-0.92	-0.92	-0.80	-0.80
Mn/IV	2.19	2.84	1.86	3.52	0.78	0.72	1.46	1.17

Ist Decade growth rate (Mean / Initial Value ) - Indigenous – 52.47 ; Imported – 44.59

Ist Decade Proportion to export sales – Indigenous: 1.24 → 278.46 ; Imported 0.00 → 114.04

IInd Decade growth rate (Mean / Initial Value ) - Indigenous – 1.86 ; Imported – 3.52

IInd Decade proportion to export sales – Indigenous : 282.45 → 224.56 ; Imported 97.20 → 192.59

The second decade in the case of ferrous metals has seen a surge in the use of imported raw materials in our manufacturing activity.

## 6 NON FERROUS METALS

Table 6 – A: Non Ferrous Metals – 15 companies – 1991 - 2000

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
1991	30530	3456.8	204.9	1.3	0.67	5.93	0.00	0.04
1992	36009.4	4401.1	210.5	0	0.01	4.78	0.00	0.00
1993	42115.5	6620.3	173.4	13.2	0.41	2.62	0.03	0.20
1994	46445.6	6474.6	151.4	17.9	0.33	2.34	0.04	0.28
1995	55791.4	6983	1144.7	718.5	2.05	16.39	1.29	10.29
1996	66130.5	8100.2	3780.3	1125.1	5.72	46.67	1.70	13.89
1997	65761.1	10850.2	2769.5	254.9	4.21	25.52	0.39	2.35
1998	73534.2	11427.9	2993.9	225.6	4.07	26.20	0.31	1.97
1999	75554.8	10223.7	3850.7	519.7	5.10	37.66	0.69	5.08
2000	91405.3	18560.2	22354.7	11927.2	24.46	120.44	13.05	64.26
CAGR	-0.70	-0.46	9.91	916.48	2.64	1.03	305.44	169.88
Mn/IV	1.91	2.52	18.37	1138.72	7.01	4.87	410.85	261.55

Table 6 – B : Non Ferrous Metals – 35 companies – 2001 - 2010

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
2001	155930.4	27282.9	33189.1	26763.1	21.28	121.65	17.16	98.09
2002	152572.6	29739.5	34892.9	29166.2	0.23	117.33	19.12	98.07
2003	164282.4	42402.4	24208.8	22438.3	14.74	57.09	13.66	52.92
2004	199633.4	53010.8	26515.9	51171.4	13.28	50.02	25.63	96.53
2005	248319.9	72598.6	28832.7	69153.2	11.61	39.72	27.85	95.25
2006	348325.6	118475.4	32384.2	124791.7	9.30	27.33	35.83	105.33
2007	575805.3	233274.5	40480.8	223547	7.03	17.35	38.82	95.83
2008	585325.7	199359.3	43252.7	241995.2	7.39	21.70	41.34	121.39
2009	528285.3	159105.2	50869.5	200946.8	9.63	31.97	38.04	126.30
2010	562512.4	174394.3	54968.4	250306.9	9.77	31.52	44.50	143.53
CAGR	-0.64	-0.36	-0.83	-0.06	-0.95	-0.97	-0.74	-0.85
Mn/IV	2.26	4.07	1.11	4.63	0.49	0.42	1.76	1.05

Ist Decade growth rate (Mean / Initial Value ) - Indigenous – 18.37 ; Imported – 1138.72

Ist Decade Proportion to export sales – Indigenous: 5.93 → 120.44 ; Imported 0.04 → 64.26

IInd Decade growth rate (Mean / Initial Value ) - Indigenous – 1.11 ; Imported – 4.63

IInd Decade proportion to export sales – Indigenous : 121.65 → 31.52 ; Imported 98.09 → 143.53

Non Ferrous metals as a sector has been very high in attracting foreign inputs in both the decades.

## 7 ELECTRICAL MACHINERY

Table 7 – A : Electrical Machinery – 51 companies – 1991 - 2000

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
1991	46228.3	2157.8	136.2	4.6	0.29	6.31	0.01	0.21
1992	52946.2	2761.8	599.4	99.9	0.01	21.70	0.19	3.62
1993	56374	2106.4	1122.2	364.7	1.99	53.28	0.65	17.31
1994	59204.9	3081	1544.6	492.2	2.61	50.13	0.83	15.98
1995	66523.7	3493.8	632.5	198.1	0.95	18.10	0.30	5.67
1996	82590	5095.6	0	0	0.00	0.00	0.00	0.00
1997	84798.1	6324.4	131.5	0	0.16	2.08	0.00	0.00
1998	85621.8	6634.1	611.4	51.3	0.71	9.22	0.06	0.77
1999	90268.1	6668.6	949.5	213.4	1.05	14.24	0.24	3.20
2000	92765.9	5765.9	24427.3	8151.1	26.33	423.65	8.79	141.37
CAGR	-0.80	-0.73	16.93	176.20	7.94	5.71	87.30	65.31
Mn/IV	1.55	2.04	22.14	208.16	11.58	9.49	111.13	88.25



Table 7 – B : Electrical Machinery – 107 companies – 2001 - 2010

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
2001	143591.7	13787.1	53807.7	15461.9	37.47	390.28	10.77	112.15
2002	140957	12020.2	49875.8	17540.7	0.35	414.93	12.44	145.93
2003	136806.8	12516.8	52464.4	14231.7	38.35	419.15	10.40	113.70
2004	143168.9	12211.8	55888.8	13769.9	39.04	457.66	9.62	112.76
2005	172601.8	19168.7	66870.3	19751.4	38.74	348.85	11.44	103.04
2006	218315	22303.3	92591.5	30678	42.41	415.15	14.05	137.55
2007	290800.5	31359.4	126064.5	39544.5	43.35	402.00	13.60	126.10
2008	381107.5	39399.2	172984.5	50725	45.39	439.06	13.31	128.75
2009	414342.8	48971.8	184876.5	53299.5	44.62	377.52	12.86	108.84
2010	413531.8	41736.2	196755.1	59142.7	47.58	471.43	14.30	141.71
CAGR	-0.71	-0.70	-0.63	-0.62	-0.87	-0.88	-0.87	-0.87
Mn/IV	1.71	1.84	1.96	2.03	1.01	1.06	1.14	1.10

Ist Decade growth rate (Mean / Initial Value) - Indigenous – 22.14 ; Imported – 208.16

Ist Decade Proportion to export sales – Indigenous: 6.31 → 423.65 ; Imported 0.21 → 141.37

IInd Decade growth rate (Mean / Initial Value) - Indigenous – 1.96 ; Imported – 2.03

IInd Decade proportion to export sales – Indigenous : 390.65 → 471.43 ; Imported 112.15 → 141.71

Electrical Machinery sector has taken in it's stride the consumption of indigenous raw material more than any other sector till now. A lesson can be learnt on how this sector has remained comparatively isolated to foreign raw material and has relied on Indian components. If indigenization can be sustainable for a value added sector like Electrical machinery then we can be equally competent in indigenizing other sectors with low technology goods and processes.

## 8 NON ELECTRICAL MACHINERY

Table 8 – A : Non Electrical Machinery – 101 companies – 1991 - 2000

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
1991	103760.8	6921	9771.9	7456.9	9.42	141.19	7.19	107.74
1992	113818.7	6751.6	1446.6	11.9	0.01	21.43	0.01	0.18
1993	120901.3	7470.3	11865.2	8214	9.81	158.83	6.79	109.96
1994	128794.2	8430.2	10448.9	7486.9	8.11	123.95	5.81	88.81
1995	145369.1	9790.7	2574.5	1140.3	1.77	26.30	0.78	11.65
1996	173041.2	8732.4	4336.1	1476.8	2.51	49.66	0.85	16.91
1997	187894.3	10281.2	1637.6	234	0.87	15.93	0.12	2.28
1998	193053.5	12060.6	3410.8	635.3	1.77	28.28	0.33	5.27
1999	194421.7	10190.8	3125.6	1132.9	1.61	30.67	0.58	11.12
2000	195051.6	14210	63755.1	20631.4	32.69	448.66	10.58	145.19
CAGR	-0.81	-0.79	-0.35	-0.72	-0.65	-0.68	-0.85	-0.87
Mn/IV	1.50	1.37	1.15	0.65	0.73	0.74	0.46	0.46

Table 8 – B : Non Electrical Machinery – 144 companies – 2001 - 2010

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
2001	211158.6	19413.4	79020.9	27990.3	37.42	407.04	13.26	144.18
2002	204805.9	27035.3	75072.6	29101.6	0.37	277.68	14.21	107.64
2003	216024.7	22931.2	74345.1	27668.4	34.42	324.21	12.81	120.66
2004	257975.4	30132.4	93850.8	30812	36.38	311.46	11.94	102.26
2005	310695	38830.1	131146.6	37998.3	42.21	337.74	12.23	97.86
2006	409463.3	43172.4	174025.2	45815.2	42.50	403.09	11.19	106.12
2007	533944.9	56175.4	230584.1	59491.3	43.18	410.47	11.14	105.90
2008	623491.7	67744.6	285417	71456.3	45.78	421.31	11.46	105.48
2009	658615.2	87158	304635.5	83756.7	46.25	349.52	12.72	96.10
2010	685321.9	58963.9	302448.3	96410.9	44.13	512.94	14.07	163.51
CAGR	-0.68	-0.70	-0.62	-0.66	-0.88	-0.87	-0.89	-0.89
Mn/IV	1.95	2.33	2.22	1.82	1.00	0.92	0.94	0.80

Ist Decade growth rate (Mean / Initial Value ) - Indigenous – 1.15 ; Imported – 0.65

Ist Decade Proportion to export sales – Indigenous: 141.19 → 448.66 ; Imported 107.74 → 145.19

IInd Decade growth rate (Mean / Initial Value ) - Indigenous – 2.22 ; Imported – 1.82

IInd Decade proportion to export sales – Indigenous : 407.04 → 512.94 ; Imported 144.18 → 163.51

Non Electrical Machinery is another sector where indigenous raw material has outpaced the consumption of imported raw material. But this being a comparatively low technology sector it is not so great an achievement. In fact, we can try and completely eliminate the consumption of imported raw material from this sector.

## 9 ELECTRONICS

Table 9 – A : Electronics – 38 companies – 1991 - 2000

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
1991	36578.9	1227.1	0	0	0.00	0.00	0.00	0.00
1992	30864.7	1855.7	0	0	0.00	0.00	0.00	0.00
1993	30393.4	1042.7	132.9	256.4	0.44	12.75	0.84	24.59
1994	50519.9	1977.9	5636.1	1308.1	11.16	284.95	2.59	66.14
1995	50733.8	2509.1	6967.1	1455.7	13.73	277.67	2.87	58.02
1996	61268	2711.5	10010.2	2152.4	16.34	369.18	3.51	79.38
1997	66078.4	5167.8	9250.7	2191.2	14.00	179.01	3.32	42.40
1998	66084.1	2411.8	11649.5	3429.7	17.63	483.02	5.19	142.20
1999	73065.1	2052.2	13414.1	3370.9	18.36	653.64	4.61	164.26
2000	88276.4	2475.5	30670.3	14297.1	34.74	1238.95	16.20	577.54
CAGR	-0.76	-0.80	27.85	5.97	8.93	11.15	1.40	1.94
Mn/IV	1.51	1.91	66.01	11.10	28.91	27.45	4.64	4.70

Table 9 – B : Electronics – 94 companies – 2001 - 2010

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
2001	141035.6	16584.8	43587.6	27924.9	30.91	262.82	19.80	168.38
2002	160346.7	18878.4	51367.5	29207.2	0.32	272.10	18.22	154.71
2003	152367.7	18735.4	45230	24636	29.68	241.41	16.17	131.49
2004	167471.2	24914.9	48709.8	27740	29.09	195.50	16.56	111.34
2005	193468.8	28653.5	56584.8	37409.3	29.25	197.48	19.34	130.56
2006	220915.3	33135.8	65077.5	45778.6	29.46	196.40	20.72	138.15
2007	243126.8	41898.1	77439.8	51935.2	31.85	184.83	21.36	123.96
2008	259930.8	41983.9	75979.8	53094.8	29.23	180.97	20.43	126.46
2009	251487.2	39811.7	78956.4	53609.2	31.40	198.32	21.32	134.66
2010	322494.7	47577.9	125948	74291.2	39.05	264.72	23.04	156.15
CAGR	-0.77	-0.71	-0.65	-0.62	-0.84	-0.86	-0.82	-0.85
Mn/IV	1.50	1.88	1.48	1.73	0.94	0.91	1.22	1.05

Ist Decade growth rate (Mean / Initial Value ) - Indigenous – 66.01 ; Imported – 11.10

Ist Decade Proportion to export sales – Indigenous: 12.75 → 1238.95 ; Imported 24.59 → 577.54

IInd Decade growth rate (Mean / Initial Value ) - Indigenous – 1.48 ; Imported – 1.73

IInd Decade proportion to export sales – Indigenous : 262.82 → 264.72 ; Imported 168.38 → 156.15

This sector is another shining example of indigenization. Lessons can be learnt from this sector as well.

## 10 TRANSPORT EQUIPMENTS

Table 10 – A : Transport Equipments – 80 companies – 1991 - 2000

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
1991	113928.4	5424.6	43.2	6.5	0.04	0.80	0.01	0.12
1992	111402	9404.7	211.8	4.6	0.00	2.25	0.00	0.05
1993	117676	10705	4876.8	323.1	4.14	45.56	0.27	3.02
1994	163563.3	13664.4	6823.4	904.7	4.17	49.94	0.55	6.62
1995	227273.1	17637.2	14828.2	2202.5	6.52	84.07	0.97	12.49
1996	316786.8	22271.8	19777.7	3743.5	6.24	88.80	1.18	16.81
1997	371854.5	24886.2	17398.4	2750.7	4.68	69.91	0.74	11.05
1998	358131	25126.2	19992.7	2026.4	5.58	79.57	0.57	8.06
1999	362973.6	25321.2	21346.1	3971.6	5.88	84.30	1.09	15.68
2000	439957.8	24812	186549.2	39992.3	42.40	751.85	9.09	161.18
CAGR	-0.61	-0.54	3.78	14.47	0.28	1.06	3.14	5.68
Mn/IV	2.27	3.30	5.98	17.31	1.92	2.76	5.27	7.79

Table 10 – B : Transport Equipments – 172 companies – 2001 - 2010

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
2001	545077.5	34347.7	246764.4	63401.4	45.27	718.43	11.63	184.59
2002	543867.6	31230.6	244688.9	50363.6	0.45	783.49	9.26	161.26
2003	618097.2	41882.1	284031.8	47738.4	45.95	678.17	7.72	113.98
2004	788452.1	66304.2	375638.9	58918.9	47.64	566.54	7.47	88.86
2005	991502	94607.5	497139.8	78098.7	50.14	525.48	7.88	82.55
2006	1123351	112899.7	567796.7	89753.5	50.54	502.92	7.99	79.50
2007	1400846	138987.2	716785.8	109961.7	51.17	515.72	7.85	79.12
2008	1486326	154707.1	775913.1	111472.3	52.20	501.54	7.50	72.05
2009	1502822	209816	813365.4	135532.9	54.12	387.66	9.02	64.60
2010	1879341	239064.7	1004640	146096.1	53.46	420.24	7.77	61.11
CAGR	-0.66	-0.30	-0.56	-0.62	-0.85	-0.92	-0.87	-0.93
Mn/IV	2.00	3.27	1.95	1.87	0.98	0.83	1.09	0.87

Ist Decade growth rate (Mean / Initial Value ) - Indigenous – 5.98 ; Imported – 17.31

Ist Decade Proportion to export sales – Indigenous: 0.80 → 751.85 ; Imported 0.12 → 161.18

IInd Decade growth rate (Mean / Initial Value ) - Indigenous – 1.95 ; Imported – 1.87

IInd Decade proportion to export sales – Indigenous : 718.43 → 420.24 ; Imported 184.59 → 61.11

The first decade after liberalization has seen a phenomenal growth of imported components and raw materials and in the second decade also the proportion of indigenous material to export has reduced more drastically than imported fall in imported material.

## 11 PAPER AND NEWS PRINT

Table 11 – A : Paper and News Print – 10 companies – 1991 - 2000

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
1991	10946.8	343	0	0	0.00	0.00	0.00	0.00
1992	14140.3	533.4	271.8	36.6	0.02	50.96	0.26	6.86
1993	15486.2	735.3	297.6	10.4	1.92	40.47	0.07	1.41
1994	14283.5	875.2	1637.5	733.4	11.46	187.10	5.13	83.80
1995	16682.4	1425.3	2951.9	969.8	17.69	207.11	5.81	68.04
1996	23936.6	1847.8	3701.8	1572.7	15.47	200.34	6.57	85.11
1997	22961.3	1777.4	2575.1	1083.1	11.21	144.88	4.72	60.94
1998	18305.6	1395.1	2554	1023.4	13.95	183.07	5.59	73.36
1999	15039	890.1	1624.2	276.3	10.80	182.47	1.84	31.04
2000	23348.1	1504.5	5043.1	1199.3	21.60	335.20	5.14	79.71
CAGR	-0.79	-0.56	1.06	2.64	123.86	-0.27	1.21	0.29
Mn/IV	1.60	3.30	7.60	18.87	541.74	3.01	13.57	7.15

Table 11 – B : Paper and News Print – 36 companies – 2001 - 2010

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
2001	66356.6	4596.1	13022.8	6053.5	19.63	283.34	9.12	131.71
2002	61256.9	4841.6	11927.3	6043.5	0.19	246.35	9.87	124.82
2003	63322.8	7706.2	12663.7	7348.5	20.00	164.33	11.60	95.36
2004	60321.9	6054	11651	4824.1	19.31	192.45	8.00	79.68
2005	65796.9	6357.2	13646	6097.1	20.74	214.65	9.27	95.91
2006	74299.7	5176.9	15189.3	6896	20.44	293.41	9.28	133.21
2007	83115.5	5510.5	16662.7	8566.3	20.05	302.38	10.31	155.45
2008	71970.1	3535.7	16275.3	7003.7	22.61	460.31	9.73	198.09
2009	81206.7	4033.5	19098	7781.5	23.52	473.48	9.58	192.92
2010	78193.7	3968.1	18456.1	6794.3	23.60	465.11	8.69	171.22
CAGR	-0.88	-0.91	-0.86	-0.89	-0.88	-0.84	-0.90	-0.87
Mn/IV	1.06	1.13	1.14	1.11	0.97	1.09	1.05	1.05

Ist Decade growth rate (Mean / Initial Value ) - Indigenous – 7.60 ; Imported – 18.87

Ist Decade Proportion to export sales – Indigenous: 0.50 → 335.20 ; Imported 6.86 → 79.71

IInd Decade growth rate (Mean / Initial Value ) - Indigenous – 1.14 ; Imported – 1.11

IInd Decade proportion to export sales – Indigenous : 283.34 → 465.11 ; Imported 131.71 → 171.22

Against expectations this important sector has taken Indian raw material in its stride more than imported.

## 12 LEATHER PRODUCTS

Table 12 – A : Leather Products – 32 companies – 2001 - 2010

Year	Sales	Exports	Ind	Imp	ind/sales	ind/exp	imp/sales	imp/exp
2001	20143.1	27055.9	7666.5	2346.3	38.06	28.34	11.65	8.67
2002	21950.9	25460.1	9018	1998	0.41	35.42	9.10	7.85
2003	20635.2	29121.8	8051.4	2084.7	39.02	27.65	10.10	7.16
2004	21407.1	32862.8	8046.3	1997.1	37.59	24.48	9.33	6.08
2005	24832.6	44331	9194.7	2713.6	37.03	20.74	10.93	6.12
2006	23166.9	33897.6	8320.6	1824	35.92	24.55	7.87	5.38
2007	26412.8	18508.7	9139.9	3565.2	34.60	49.38	13.50	19.26
2008	25566.1	12373.7	8606.4	2113.6	33.66	69.55	8.27	17.08
2009	29903.6	20617.3	10853.3	2840.4	36.29	52.64	9.50	13.78
2010	28275.5	16355.7	10209.9	2284.8	36.11	62.42	8.08	13.97
CAGR	-0.86	-0.94	-0.87	-0.90	-0.91	-0.78	-0.93	-0.84
Mn/IV	1.20	0.96	1.16	1.01	0.86	1.39	0.84	1.21

Ist Decade growth rate (Mean / Initial Value ) – Data Unavailable

Ist Decade Proportion to export sales – Data Unavailable

IInd Decade growth rate (Mean / Initial Value ) - Indigenous – 1.16 ; Imported – 1.01

IInd Decade proportion to export sales – Indigenous : 28.34 → 62.42 ; Imported 8.67 → 13.97

For the first decade no data is available except that there were 8 companies exporting. The second decade has seen both the sources of raw material gaining an equal foothold in the market.

### 13 BOOKS AND CARDS

As the volume for Books and cards is low, we contend only with the summary of the table. For the the first decade 4 companies were exporting but data was available only for two years. The second decade has the following rates.

IInd Decade growth rate (Mean / Initial Value ) - Indigenous – 1.34 ; Imported – 1.41

IInd Decade proportion to export sales – Indigenous : 130.46 → 65.93 ; Imported 32.81 → 27.45.

Imported material has still taken a lead over Indian material.

### 14 WOOD

For this sector also, we contend only with the summary of the table. For the the first decade 4 companies were exporting but data was available only for two years so growth rates have not been calculated. The second decade has the following rates.

IInd Decade growth rate (Mean / Initial Value ) - Indigenous – 1.18 ; Imported – 2.83

IInd Decade proportion to export sales – Indigenous : 765.73 → 249.01 ; Imported 120.41 → 120.22

### 15 MEDIA PRINT

Media Print had only one company in the first decade that too with insufficient data. The second decade rates for nine companies are

IInd Decade growth rate (Mean / Initial Value ) - Indigenous – 0.70 ; Imported – 1.60

IInd Decade proportion to export sales – Indigenous : 1924.42 → 1276.79 ; Imported 2371.27 → 4742.64

### 16 MINING

6 companies

Ist Decade growth rate (Mean / Initial Value ) – Data Insufficient

Ist Decade Proportion to export sales - Data Insufficient

IInd Decade growth rate (Mean / Initial Value ) - Indigenous – 1.57 ; Imported – 3.67

IInd Decade proportion to export sales – Indigenous : 40.10 → 13.30 ; Imported 9.49 → 7.89

### 17 ELECTRICITY

2 companies

Table 17 – A : Electricity – 4 companies – 2001 - 2010

4 companies

Ist Decade growth rate (Mean / Initial Value) – Data Insufficient

Ist Decade Proportion to export sales - Data Insufficient

IInd Decade growth rate (Mean / Initial Value) - Indigenous – 1.19 ; Imported – 2.17

IInd Decade proportion to export sales – Indigenous : 8.16 → 57.80 ; Imported 7.98 → 111.45