

# Restructuring in Vietnam's Manufacturing Industry From 1988 to 2004

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The experience from developing countries shows economic development is indicated by the move of resources from the agriculture to manufacturing industry. Therefore, the common trend is to increase the value-added ratio of the manufacturing industry in the national GDP along with income growth. Moreover, during the industrialization process, the manufacturing industry changes from labor intensive sectors to capital intensive ones. This article initially analyzes the origin of the restructuring in Vietnamese manufacturing industry – supply and demand, and then displays the future of Vietnam's industrialization process.

## I. DETERMINANTS TO THE RESTRUCTURING OF PRODUCTION AND FOREIGN TRADE IN THE MANUFACTURING INDUSTRY

### 1. Change in production

In the 2000-2004 period, the manufacturing industry accounted for a large percentage (80.3%), the mining industry 15.1%, and the generation and distribution of electricity, gas and water 4.6% of the total out value of the industry. The manufacturing industry always records high growth, from 78.7% in 2000 to 80.3% in 2004. Leading sectors include auto production from 1.75% in 2000 to 3.2% in 2004; motorbikes and other transport means from 3.98% to 4.05%; electrical equipment from 2.29% to 2.76%; metallurgy from 2.72% to 3.87%; metal-based goods (excluding machinery and equipment) from 3% to 4.2%; clothing 3.42% to 4.14%;

and non-metal goods from 6.39% to 6.52%.) [1]

### 2. Demand

2.1. Export of manufactured goods: Vietnam's manufactured goods include two major categories: (1) light industry and handicraft, and (2) heavy industry and mining. In Category 1, main products are processed food, clothing and footwear; in Category 2 they are minerals. As a result, light industry products and handicrafts are mainly Vietnamese manufactured goods. The country's export of these goods has experienced four stages since 1986 (see Table 1). In the first stage from 1986 to 1990, these

products made up one-third of total export value. The period from 1991 to 1995 was the stage of boosting up trade liberalization and foreign investment, so after sharp decline in 1991, the share of manufactured goods in total exports increased fast from 14% in 1991 to 28% in 1995. Their export value also saw a robust rise from 33.85% in 2000; to 41% in 2002 and 32.1% in 2004, and it remains the key generator of Vietnamese export value.

2.2. Import of manufactured goods: In the 1986-1995 period, there were changes in Vietnam's import, indicated by reduction in complete equip-

ment (from 23% in 1986 to 16% in 1990 and 4.5% in 1994) and strong growth in machinery and materials (see Table 2). Import of machinery, equipment and materials saw a boom in the 1991-1995 period: machinery and components accounted for 30% of total imports, materials 60% in 1995. Until 2004, machinery and equipment posted around 28% of total imports, and materials 72%. The purchase of foreign consumer goods dropped over years from 16% in 1986 to 5.4% in 2000. Because Vietnam's manufacturing industry depends much on imported goods, especially machinery, capital goods, and raw materi-

Table 1: Export value by industry from 1986 to 2004 (US\$ mil.)

Year	Heavy industry and mining	Light industry and handicraft	Agriculture-forestry	Fishery	Total
1986	63.4 (8.1%)	227.5 (29.2%)	390.2		779.0
1990	617 (25.67%)	635.8 (26.45%)	909.7		2,404.0
1995	1,377.7 (25.28%)	1,549.8 (28.44%)	1,899.7	621.4	5,448.9
2000	5,382.1 (37.16%)	4,903.1 (33.85%)	2,719	621.4	14,482.7
2001	5,247 (34.91%)	5,368.3 (35.72%)	2,597.3	1,816	15,029.0
2002	5,304.3 (31.75%)	6,785.7 (40.06%)	2,594.3	2,021.7	16,706.1
2003	6,253.2 (31.00%)	8,025.5 (39.78%)	3,621.8	2,275.6	20,176.0
2004	8,498.1 (32.7%)	10,601.7 (32.1%)	4,411.4	2,480.4	26,003.0

Source: Statistical Yearbooks. *Figures and Facts Journal*, January and February 2005.

Table 2: Import by product from 1986 to 2004 (US\$ mil.)

Year	Total	Including			Consumer goods
		Total	Machinery and equipment	Materials	
1986	2155.1	1,867.0 (86.6)	749.0 (34.7)	1,118.0 (59.9)	288.1 (15.4)
1990	2752.4	2,342.6 (85.1%)	753.0 (27.3%)	1,589.6 (57.8%)	409.8 (14.9%)
1995	8155.4	6,917.6 (84.8%)	2,096.9 (25.7%)	4,820.7 (59.1%)	1,237.8 (15.2%)
2000	15636.5	14,668.2 (93.8%)	4,781.5 (30.6%)	9,886.7 (63.2%)	968.3 (6.2%)
2001	16218.0	14,930.5 (92.06%)	4,949.0 (30.52%)	9,981.5 (61.50%)	1,287.4 (7.94%)
2002	19745.6	18,192.4 (92.1%)	5,879.9 (29.7%)	12,312.4 (62.4%)	1,553.2 (7.9%)
2003	25226.9	23,612.0 (93.6%)	8,175.0 (32.4%)	15,437.0 (61.2%)	1,614.7 (6.4%)
2004	31523.0	29,800.0 (94.5%)	8,400.0 (26.6%)	21,400.0 (67.9%)	1,700.0 (5.4%)

Source: Statistical yearbooks. *Figures and Facts Journal*, January and February 2005.



**Table 3: Ratio of investment capital in GDP based on current price in the 1991-2004 (%)**

	1991	1992	1993	1994	1995	1997	1998	1999	2000	2001	2002	2003	2004 (est.)
Total investment capital	15.1	17.6	24.9	25.5	27.1	34.6	32.4	32.8	32.9	34.0	36.0	35.8	36.3
State sector	2.8	5.8	7.0	5.4	6.0	17.08	18.01	19.24	18.92	19.74	19.83	29.07	21.6
Foreign-invested sector	2.6	2.6	6.5	6.8	8.8	7.81	7.70	7.89	7.83	8.00	9.73	9.48	9.75
Private sector	9.7	9.2	11.4	13.3	12.4	9.66	6.73	5.67	6.15	6.24	6.49	6.30	6.20
Growth of total investment	5.0	27.8	52.7	11.4	16.7	24.0	8.01	11.98	10.79	12.53	18.01	13.76	17.76

Source: IMF (from 1991 to 1995), Economic Performance Report from 2004 to 2005 – Vietnam Economic Times (from 1997 to 2004)

als, growth in the import of these goods will promote the output of manufactured commodities. In contrast, if importing consumer goods, the country's embryonic manufacturing industry will face a severe competition.

2.3. The origin of growth in the manufacturing industry: The output growth in the manufacturing industry results from changes in domestic demand, import substitution and export expansion in accordance with Chenery method of growth analysis. The basic equation of supply and demand is:

$$Q + M = DD + E \quad (1)$$

Where Q is total output, M import, E export and DD domestic demand. Import is related to domestic

demand as indicated by:

$$M = (1-u)DD \quad (2)$$

Where  $u = (Q - E) / DD$  (ratio between domestic production and domestic demand). Therefore, the basic relation of output is indicated by:

$$Q = uDD + E \quad (3)$$

The change in production in a specific stage (between year 1 and year 2) is defined by:

$$\Delta Q = Q_2 - Q_1 = u_1DD + \Delta uDD_2 + \Delta E \quad (4)$$

Where:  $u_1DD$  is the impact of  $DD$ ;  $\Delta uDD_2$  the impact of  $IS$ ; and  $\Delta E$  the impact of  $EE$ .

In 1990, the industry output increased mainly because of growth in domestic demand (accounting for 90%). However, in 1995 the figure dropped to 75%. The export expansion became increasingly im-

portant in output growth (some 36% in 2000, and 32% in 2004), while the impact of import substitution was - 49.9% in 2000 and - 8.6% in 2004, that is, the demand for these goods was cut off due to import liberalization. The great impact of export expansion over years shows Vietnam's export has been really oriented to manufactured goods since early 1990s.

### 3. Supply

According to Chenery, the output growth of the manufacturing industry can be attributed to the two factors: input factor including labor and total factor productivity (TFP). Many studies show TFP is the main cause of output growth in most of developed countries while it is

labor and capital in developing countries. In the long term, TFP growth is the most important factor to maintain high GDP growth in developing countries. In Vietnam, the contribution of capital in GDP growth is decisive over the past years.

Capital contribution: Investment capital comes from three main sources: state, private and foreign-invested sectors. Over the last 5 years, investment flows have increased fast: more than 15% in 1991 to 36.3% in 2004. Their shares in total investment capital are very different. State investment initially played a modest role: 2.8% of GDP in 1991, but increased rapidly and became a key factor in 2004 (21.6% of GDP). In the

**Table 4: FDI by sector in the 1988-2003 period\***

	Number of projects	Total registered capital (US\$mil.)	Legal capital (US\$mil.)
Total sectors	5,441	45,776.8 (100%)	22,291.0 (100%)
Mining	89	3,055.0 (6.67%)	2,424.8 (10.88%)
Manufacturing	3,423	19,516.2 (42.63%)	8,903.6 (39.94%)
Electricity, gas and water production	20	1,688.3 (3.7%)	546.5 (2.45%)
Construction	93	4,616.8 (10.1%)	1,413.0 (6.34%)
Subtotal	3,625	8,874.3 (63.1%)	13,287.9 (59.61%)

Source: 2003 Statistical Yearbook

(\*) Excluding added capital of projects licensed in previous years and projects of VIETSOPEIRO.

meantime, foreign investment also saw a firm rise in the last three years (some 9.5% of GDP) (see Table 3). Private investment remains small, not compatible with its potentials and expectations.

The following Table 4 indicates until the end of 2003, foreign direct investment (FDI) in the manufacturing accounted for 42.63% of total registered capital, 39.94% of realized capital.

During the 1988-2003 period, the FDI trend had experienced an extremely important change: focusing on hotels, tourism, oil exploration, agriculture-forestry-fishery, and construction in the 1988-1990 period; on the manufacturing industry, tourism and hotel, construction, transport and post, agriculture-forestry-fishery in the

1988-1990 period; facing a dramatic decline due to the Asian financial meltdown in the 1997-2000 period; and recovering in the manufacturing industry, agriculture-forestry, consultancy, hotel and restaurant in the 2001-2004 period.

FDI has made significant contributions to the growth and restructuring of the manufacturing industry and the heavy industry. Investment in the heavy industry is used for its import substitution and rapid growth. In contrast, investment in the light industry is used for export-oriented production based on cheap labor cost and labor intensive industries. The trend of FDI focused on the manufacturing industry is clearly demonstrated by the fast rise in

the value of goods manufactured by the FDI sector, from 58.16% in 1995 to 75.86% in 2003 (Table 5).

## II. CONCLUSION

Regarding the origin of the manufacturing industry growth, in terms of demand, domestic demand and export expansion are decisive factors to its high growth in the 1990-2004 period. In terms of supply, it is mainly attributed to fast increase in the industry's investment capital. The analysis also shows:

Vietnam's industrialization strategy has been oriented to export;

Vietnam is required to develop selected import-substitute industries such as chemicals and fertilizer, machinery and equipment manufacturing;

The manufacturing industry is still symbolized

by light industries processing natural resources and using large labor. In the long run, it is important to build hi-tech industries including auto, transport equipment, metallurgy, electrical and electronic equipment, chemicals and plastics, petrochemicals, shipbuilding, and machinery;

The manufacturing industry has faced strong dependence on investment capital. Vietnam should encourage industries using high skilled labor as their comparative advantages and increase the ratio of labor and total factor productivity in the manufacturing industry expansion.■

Notes:

[1] Figures and Facts Journal, issue in January and February 2005

**Table 5: Ratio of manufacturing value of the foreign-invested by industry (%)**

	1995	1996	1997	1998	1999	2000	2001	2002	2003 (est.)
<b>Total</b>	100	100	100	100	100	100	100	100	100
<b>Mining</b>	41.78	39.47	36.62	34.92	35.18	31.94	29.70	25.85	23.25
<b>Processing</b>	58.16	60.50	63.29	65.08	64.76	66.74	69.06	73.12	75.86
Food and beverage	34.20	32.41	28.99	26.71	21.65	20.42	20.08	19.28	18.35
Tobacco	0.04	0.09	0.14	0.10	0.06	0.07	0.08	0.03	0.03
Textile	7.10	5.41	5.92	7.20	4.66	5.49	4.58	4.74	4.82
Garment	3.55	2.67	3.60	3.36	3.21	3.15	3.27	3.57	3.86
Leatherwork	8.45	9.69	12.40	10.68	9.23	8.33	7.51	7.58	7.61
Woodwork	1.97	1.46	1.29	0.94	0.79	0.92	0.88	0.93	0.97
Paper	1.98	1.83	1.59	1.40	1.17	0.98	1.01	0.98	0.93
Publishing and printing	0.25	0.21	0.17	0.10	0.10	0.08	0.09	0.11	0.12
Coal and crude oil	1.97	0.00	0.00	0.00	0.00	0.14	0.31	0.26	0.22
Chemicals	4.92	7.30	6.02	6.14	6.99	6.87	7.14	7.30	7.49
Rubber and plastic goods	2.08	2.09	2.65	2.76	3.15	3.21	3.67	3.56	3.46
Non-metal goods	2.99	3.63	6.21	7.40	7.43	8.38	9.43	9.12	9.06
Metallurgy	6.72	6.82	5.27	4.86	5.89	5.64	5.62	5.71	5.76
Metal goods (excluding machinery and equipment)	1.78	2.79	3.61	3.60	3.78	3.25	3.33	3.20	3.09
Machinery and equipment	0.97	0.49	0.62	0.99	1.34	1.91	2.21	2.02	1.91
Office equipment and computer	0.01	0.16	0.15	0.72	4.43	2.67	1.70	1.41	1.28
Electrical equipment	1.00	1.44	1.71	2.04	2.63	2.69	4.09	4.24	4.45
Radio, television set and communications equipment	6.29	9.59	10.02	8.58	8.57	7.51	7.10	6.94	6.90
Medical and precision tools	0.28	0.73	0.34	0.80	0.75	0.65	0.62	0.63	0.59
Motor vehicles	6.84	4.96	4.70	3.56	3.44	5.45	6.21	6.96	7.87
Other transport means	5.65	4.30	2.50	6.11	8.37	9.88	8.46	8.45	8.00
Wooden furniture	0.98	1.92	2.09	1.95	2.40	2.31	2.62	2.98	3.23
Electricity, gas and water	0.10	0.06	0.13	0.00	0.10	1.98	1.79	1.40	1.17

Source: The author's own calculations from 2003 Statistical Yearbook