ASARC Working Paper 2007/07

## MANUFACTURING PROTECTION IN INDIA SINCE INDEPENDENCE\*

Garry Pursell, Nalin Kishor, and Kanupriya Gupta#

\*Paper presented at the conference organized by the Australia South Asia Research Centre, Australian National University, 20–21 August 2007, on *The Indian Economy at 60: Performance and Prospects. A Conference to Mark 60 Years of Indian Independence.* We are grateful to T.N. Srinivasan and Jatinder Bedi for comments on an earlier version

#Garry Pursell is a Visiting Fellow, Australian South Asia Research Centre, Research School of Pacific and Asian Studies, Australian National University – <u>ggp28435@aol.com</u> Nalin Kishor is a consultant at the World Bank in Washington DC – <u>nkishor@worldbank.org</u> Kanupriya Gupta is a consultant at IFPRI, New Delhi – <u>kanupriya.gupta@gmail.com</u>

#### ACRONYMS

ASI	Annual Survey of Industry
BLS	Bureau of Labor Statistics
MODVAT	Modified Value Added Tax
NAS	National Accounts Statistics
NPC	Nominal Protection Coefficient
NTB	Non Tariff Barrier
OGL	Open General License
QR	Quantitative Restriction
RBI	Reserve Bank of India
REER	Real Effective Exchange Rate
SPS	Sanitary and Phyto Sanitary
STE	State Trading Enterprise
TBT	Technical Barriers to Trade
TRQ	Tariff Rate Quota
VA	Value Added
WPI	Wholesale Price Index

## **1. INTRODUCTION AND OUTLINE**

Soon after independence, India adopted trade policies which made its manufacturing economy one of the most protected in the world. Now, at or near the end of a long series of extremely cautious liberalizing reforms over many years, with frequent backtracking episodes, exceptions and false starts, India has emerged as one of the world's low protection and open industrial economies. Only very few ORs on manufactured goods remain, export policies for manufactured goods have been streamlined and simplified, and following new reductions introduced in the March 2007 budget, average manufacturing tariffs are now just slightly above China's and Korea's and at about the same level as Sri Lanka's, which has traditionally been considered the sole low protection industrial economy in South Asia. Reflecting this new openness of the manufacturing sector, in 2006 manufactured exports and imports were respectively about 62 percent and 58 percent of manufacturing GDP, whereas in the mid-1980s they were only about 16 percent and 30 percent. During the "License Raj" years India consistently ran substantial deficits on manufactured goods account, but now manufactured exports consistently exceed manufactured imports and have become an important driver of industrial and general economic growth, increasing at between 20-25 percent annually since 2002 and probably accounting for about a quarter of manufacturing GDP, compared with only 6 percent or so during the pre-liberalization years.<sup>1</sup> Despite continuing domestic policy constraints and infrastructure bottlenecks, after many years of disappointingly low growth, since about 2004<sup>2</sup> the manufacturing sector appears to have moved to a higher growth trajectory of about 9 percent to 10 percent annually.

What were the main steps in this long, gradual trade liberalization story? This paper traces the principal developments with the aid of some key quantitative indicators. The indicators are introduced and described in section 2. Section 3 follows with an interpretative history of India's manufacturing protection policies since independence, organizing the story into five periods. During the first three periods - from 1947 to 1966, from 1966 to 1979, and 1979 to 1986 — the "license Raj" in trade policies was first established and thereafter dominated policy and practice, despite a number of liberalizing episodes and forces. During the fourth period, from 1986 to 1993, the environment for Indian industry was transformed by the sustained Rupee devaluation which got under way during 1986 and continued until 1993, and then by the dramatic trade policy reforms of 1991 and 1992, which removed large parts of the QR system, simplified the tariff regime and export policies, and pre-announced a program of tariff reductions. During the fifth period, from 1993 to the present, this liberalization process was consolidated, but cautiously and slowly, with backtracking episodes along the way. It can be divided into three sub-periods: from 1993 to 2001, when the prohibitive "License Raj" tariffs were cut and the still substantial remainder of the import licensing system was finally removed, but when anti-dumping, "indigenization" (local content) plans, and the use of para-tariffs also flourished; from 2001 to 2004 when further liberalization remained on hold while the effects of the now (almost) QR-free regime were carefully monitored; and from 2003/04 to the present when a pre-announced program of cuts in industrial tariffs was implemented in five successive budgets, bringing them down to levels (below 10 percent on average) which very few of those who participated in the earlier policy debates would have imagined to ever be politically or economically feasible in India. Finally, section 4 concludes with a brief summary of the principal trade barriers which remain in the manufacturing sector, and comments on the contrast between the openness of manufacturing trade policies and India's highly restrictive trade policies in agriculture.

<sup>&</sup>lt;sup>1</sup> Rough estimates only. Value added in manufactured exports guessed to be 40 percent.

<sup>&</sup>lt;sup>2</sup> Unless Indian fiscal years are specifically indicated (e.g. 2003/04) here and throughout this paper the years given refer to the year in which the Indian fiscal year ends. For example, 2004 means the Indian fiscal year 2003/04 which started on April 1 2003 and ended on March 31 2004.

# 2. MANUFACTURING TRADE POLICIES: SOME QUANTITATIVE INDICATORS

#### Overview

Figure 1 shows the approximate shares of tradeable manufacturing GDP protected by import QRs estimated in four soundings: at the end of 1990, just before the 1991/92 reforms; in May 1992, just after the 1991/92 reforms had been implemented; in May 1995, following some further liberalization during the previous three years; and finally in April 2007, six years after the final demise of the formal import licensing system in April 2001.<sup>3</sup> In the May 1990 sounding, it was estimated that products accounting for approximately 90 percent of Indian manufacturing GDP were subject to the import licensing system and/or to other non-tariff import barriers. This followed the gradual case-by-case removal of import licensing from selected intermediates and machines during the 1980s, so the coverage of the system as measured by domestic production protected was higher than this during the 1980s, and probably even higher still during the 1970s and 1960s. According to the May 1992 sounding, the 1991/92 reforms cut the share of QR-protected manufacturing production in half, from 90 percent to about 46 percent. The focus of the reforms was entirely on machinery and equipment and intermediate materials and components. There are no pre-reform statistics, but after the reforms the share of QR-protected machinery and equipment in total machinery and equipment production was just 12 percent, and the share of OR-protected manufactured intermediates in total intermediate production was 19 percent. Consumer goods —including manufactured consumer goods defined to include textiles-were left out of the reforms and in May 1992 only about 1 percent of the domestic production of manufactured consumer goods was subject to OR-free import competition. In continuation of past policies, except for a few consumer products which could be imported at the discretion of parastatal import monopolies — for example edible oils — the import of all consumer goods was still effectively banned. But there was some slow further liberalisation during the three following years, and this included the cautious removal of some consumer products from import licensing (restricted) lists, and indirect measures which freed imports of others. In the May 1995 sounding, the total QR coverage was estimated to have dropped from 46 percent to 36 percent, and the coverage of consumer goods from 99 percent to 79 percent. After 1995 and the completion of the Uruguay Round, India's remaining industrial QRs were contested at the WTO by other WTO members (including the US and the EU). After a prolonged rearguard action India was finally obliged to phase out the remaining QRs which were not compatible with WTO rules: this process started in 1998 and finished in April 2001. Since then, as indicated by the April 2007 sounding, the conventional QR coverage of manufacturing — although protecting two large industries<sup>4</sup> — in the aggregate has declined to only about half of one percent of manufacturing GDP.

Figure 2 illustrates time series of three quantitative indicators of manufacturing protection which between them span the 43 years from 1965 to 2007. They are (a) import duty collection rates for manufactured goods from 1965 to 2000; (c) an incomplete series with some gaps of unweighted average industrial protective tariffs from 1986 to 2007 (c) low and high estimates of implicit protection from 1971 to 2006. For comparability the series are all shown as coefficients. For example, in 1986 the average industrial tariff coefficient (2.22) means that the unweighted average industrial tariff was 122 percent, the import duty collection coefficient (1.71) means that Customs duties and other protective import taxes collected from imports of manufactured goods were 71 percent of the cif value of manufactured imports, and the high

<sup>&</sup>lt;sup>3</sup> These are approximations by Garry Pursell who matched import licensing and other NTB lists with disaggregated value added estimates from ASI and NAS statistics.

<sup>&</sup>lt;sup>4</sup> Sugar refining (protected by making sugar importers subject to the Essential Commodities Act) and urea (protected by STE import monopolies).

(1.63) and low (1.48) implicit NPCs (nominal protection coefficients) means that on average domestic prices of manufactured goods are estimated to have exceeded border prices (adjusted for port and other domestic and handling costs) by about 63 percent ( high estimate) and 48 percent (low estimate). The heavy line at a protection coefficient of 1.00 indicates zero protection. After 1992 in a number of years both the low and the high implicit protection series go below this level, indicating that average domestic prices are estimated to have been lower than the average border reference prices of a similar bundle of manufactured products.<sup>5</sup>





<sup>&</sup>lt;sup>5</sup> Average tariffs and tariff collection rates will not go below zero unless there are import subsidies.



Figure 3 shows how the implicit protection series has moved over time alongside an index of India's real effective exchange rate (REER). The REER index is a monthly index<sup>6</sup> using total trade weights (India's exports plus imports) with 25 countries, averaged to Indian fiscal years, rebased with Indian fiscal 1980/81=100, and inverted from the usual display so that increases in the index represent real devaluation and decreases represent real appreciation. The REER index clearly illustrates a number of key events and trends in India's economic history since the mid-1960s, in particular (a) the 1966 nominal Rupee devaluation, the overall impact of which was however partly offset by an acceleration of domestic inflation (b) the slow, steady Rupee devaluation after 1966 up to 1979 (c) real appreciation in 1980 and 1981 which was maintained until about 1985/86 (d) the steady and eventually very large Rupee devaluation between 1986 and 2003 (e) approximate exchange rate stability from 1993 to the present, during which nominal devaluation has been managed by the RBI so as to approximately offset the excess of domestic Indian inflation over average inflation in India's principal trading partners.

The Rupee devaluations between 1986 and 1993 were an essential precondition for the trade liberalizing reforms introduced during 1991 and 1992. The devaluations started in a low key way during 1985/86 and then continued without a break for almost five years, before they accelerated with the sharp, large devaluations introduced to help manage the 1991/92 balance of payments crisis. Before the crisis, the exchange rate had already been devalued in real terms by about 70 percent. Adding the crisis devaluations, the REER index increased by another 36 percent.<sup>7</sup> At the end of the seven year process, in 1992/93 the nominal exchange rate with the US dollar had come down by about 150 percent, and the total inflation adjusted multicurrency devaluation as measured by the REER index was also massive — about 130 percent. This completely changed the environment for India's tradeable sectors, including agriculture and manufacturing. The direct impact on manufacturing is apparent in Figure 2 from the steep decline in the implicit nominal protection estimates between 1988 and 1993.

<sup>&</sup>lt;sup>6</sup> Compiled by the IMF The index is only available back to 1980: before that REER estimates in early World Bank reports on India have been used and linked to the IMF series.

<sup>&</sup>lt;sup>7</sup> Note that in Figs 3 and 4, an increase in the REER index represents real devaluation i.e. if the trade weighted bundle of foreign currencies buys more Rupees the index goes up, and it goes down if Rupees become more valuable relative to foreign currencies.



Figure 4 shows the shares of manufactured imports and exports in manufacturing GDP since 1971, once again alongside the REER index. During the "License Raj" period, despite the import substitution emphasis of both domestic and import policies, and the elaborate export facilitation and promotion policies that were followed, manufactured imports consistently exceeded manufactured exports by large margins, even though both were very low in relation to manufacturing GDP. This scenario changed dramatically when the Rupee devaluations started during 1985/86. Between then and 1993 when the period of rapid real Rupee devaluation ended, the nominal US dollar value of manufactured exports expanded at an annual average rate of 16 percent, while manufactured imports barely changed, reflecting both the increasing prices of imports resulting from the devaluing Rupee, and towards the end of the period the contractionary fiscal and monetary policies employed to handle the 1991/92 balance of payments crisis. In 1992, for the first time since 1977, manufactured exports exceeded manufactured imports, and since then there has been a trade surplus on manufactured goods account in all except one of the 15 years up to 2006. As noted above and discussed later, these were years of real exchange rate stability and slow but in the end quite drastic liberalization of India's manufacturing trade policies. During the period, in nominal dollars up to 2006, both manufactured exports and imports expanded at an annual average rate of about 11 percent, faster than the growth of manufacturing GDP. Consequently (Fig 4) the shares of both exports and imports in manufacturing GDP steadily increased, respectively to about 63 percent and 58 percent in 2006. These and other links between the exchange rate, trade policies and some aspects of the performance of manufacturing are discussed later in this paper. Before doing so the next section describes how the implicit protection series has been constructed and assesses its usefulness as an indicator of important developments affecting the sector.

## Implicit nominal protection, 1971–2006

Estimates of implicit NPCs for the manufacturing sector for some representative years during the period 1971–2006 are shown in Table 1.<sup>8</sup> These estimates are for each of 18 tradeable manufacturing subsectors distinguished in the national accounts statistics (NAS). The estimates

<sup>&</sup>lt;sup>8</sup> Researchers who would like a copy of the complete time series for all years please contact Garry Pursell at <ggp28435@aol.com>

have been made separately for the NAS segment of larger scale "registered" manufacturing firms, the NAS segment of smaller scale "unregistered" producers , and weighted average NPCs have been calculated for total manufacturing including both the registered and unregistered segments.<sup>9</sup> The estimates in Table 1 are the basic "low" projections graphed in Figs 1 and 2. The alternative "high" projections have been done for the aggregates only, not for the subsectors. Details on the methodology are given in the Appendix.

The time series projections are from a study undertaken at the World Bank's New Delhi office which estimated nominal and effective protection of manufacturing in 1986 and 1987.<sup>10</sup> Prior to the 1991/92 trade policy reforms, about 90 percent of Indian manufacturing was protected against import competition by discretionary import licensing or some other non-tariff import barrier, such as canalization.<sup>11</sup> For all practical purposes, there was a complete ban on imports of consumer goods. In addition, tariffs were prohibitively high, on average over 100 percent when weighted by domestic production. Practically all manufactured imports were intermediate and capital goods. Generally speaking, imports of these were only allowed if they could not be supplied by Indian manufacturers, or if they were materials or components required by exporters. In these cases, the normal tariffs were reduced by partial exemptions in the case of materials supplied to firms producing for the domestic market, and duty free (under special import licenses for exporters or as a result of duty drawbacks) when they were to be used in production for export. Local producers of certain types of machinery and equipment were about the only Indian industries facing some QR-free import competition over tariffs.

In this environment, the level of tariffs — either official tariffs or tariffs actually levied after deducting exemptions — had practically no relation to the *de facto* level of manufacturing protection, defined as the extent to which domestic firms set their prices above the prices of the same or similar goods in world trade. In some cases, domestic prices exceeded world prices by more than tariffs, but more often there was considerable tariff redundancy, in the sense that actual differences between domestic and world prices were much less than tariffs. For example, in 1987 the import tariff on cotton yarn was 140 percent, but domestic cotton yarn prices were estimated to only slightly exceed the world prices of similar yarns.

For these reasons, because of the overwhelming role of non-tariff protection, in the 1986–1987 World Bank study the NPCs of a representative sample of domestically manufactured goods were estimated by directly comparing ex-factory domestic prices with reference prices. Most reference prices were derived from world prices plus the estimated freight and insurance required to bring the products to Indian ports, plus adjustments for port and handling charges in India. Data on actual cif import prices was used in the relatively few cases where competing imports were actually occurring, and fob export prices were used in the case of a few exportoriented sectors (e.g. some textiles and garments). Because transport costs are generally a much smaller proportion of the world prices of manufactured goods than of primary commodities, whether import or export prices are used would only affect the aggregate estimates for manufacturing to a very minor extent, and certainly much less than other sources of estimation error.

<sup>&</sup>lt;sup>9</sup> The reliability of some aspects of the NAS manufacturing data base is discussed in Bedi and Banerjee (2007). They argue that the NAS value added estimates for the non-registered manufacturing sectors are too high. As discussed in the Appendix, if this is correct it would only have a minor effect on the aggregate NPC estimates given in this paper. However, it could affect some of the weighted average (registered plus non-registered) sectoral averages.

<sup>&</sup>lt;sup>10</sup> Some of the results of this study are published in World Bank (1989), Chapter 4 and the Supplementary Tables to Chapter 4 (pp 311–322). This report also provides a detailed description and analysis of India's "Licence Raj" trade regime as it was in the mid 1980s.

<sup>&</sup>lt;sup>11</sup> A statutory import or export monopoly, usually a public sector firm.

			TABLE 1	I					
NOMINAL PROTECTION IN		S FOR SE	ELECTED	YEARS,	1971-2006		TOPS		
AUGREGATES AND BT	1971	1979	1987	1990	1993	1995	2001	2004	2006
REGISTERED MANUFACTURING									
20-21 food products	1.33	1.14	1.45	1.20	0.87	0.95	1.03	1.11	1.25
22 Deverages, iobacco, eic 23 cotton textiles	2.20	1.55	1.29	0.96	0.57	0.80	0.50	0.54	1.08
24 wool,silk,etc	2.23	2.00	1.79	1.98	1.25	1.46	0.86	1.00	0.98
25 jute textiles	1.24	1.70	1.15	1.69	0.91	1.14	1.13	1.12	1.27
26 textile products	0.69	1.07	1.20	0.89	0.55	0.67	0.57	0.73	0.83
27 wood, furniture, etc	1.47	1.19	1.30	1.02	0.97	1.10	1.21	1.16	1.39
28 paper&printing,etc 20 leather & fur products	2.03	2.55	1.94	0.96	0.63	0.68	0.63	0.57	0.63
30 rubber, petroleum,etc	1.56	1.48	1.63	1.19	0.88	0.97	0.88	0.94	0.80
31 chemicals,etc	3.00	2.44	1.96	1.49	1.08	1.25	1.07	1.06	1.04
32 non-metallic products	1.41	1.38	1.21	1.05	0.76	0.85	0.62	0.65	0.66
33 basic metal industries	1.64	1.47	1.61	1.54	1.10	1.14	1.09	1.15	0.98
34 metai products 35 non-electric machinery	2.03	1.00	1.60	1.70	1.20	1.31	0.99	0.90	0.94
36 electric machinery	2.61	2.62	1.83	1.66	1.13	1.26	0.96	1.01	1.10
37 transport equipment	1.94	1.99	1.70	1.63	1.06	1.09	0.95	0.96	1.05
38 other manufacturing	2.17	2.53	1.80	1.46	0.98	1.02	0.92	1.04	1.15
WTD AVERAGE REG MANUF	1.83	1.68	1.58	1.36	0.96	1.06	0.91	0.96	0.95
UNREGISTERED MANUFACTURING									
20-21 food products	1.82	1.56	1.45	1.20	0.87	0.95	1.03	1.11	1.25
22 beverages,tobacco,etc	3.12	2.85	1.29	0.96	0.57	0.80	0.50	0.54	0.61
23 cotton textiles	2.33	1.13	1.15	1.09	0.76	0.95	0.88	0.96	1.08
24 wool,silk,etc	2.77	1.74	1.79	1.67	1.15	1.34	0.79	0.92	0.91
25 Jute textiles	1.23	1.20	1.13	1.16	0.00	0.88	0.90	0.95	1.10
27 wood,furniture,etc	1.47	1.20	1.30	1.03	0.97	1.10	1.21	1.16	1.39
28 paper&printing,etc	2.96	2.88	1.70	1.40	1.09	1.10	1.01	1.01	1.11
29 leather & fur products	1.42	1.81	1.15	0.99	0.63	0.68	0.63	0.57	0.63
30 rubber, petroleum,etc	2.28	1.71	1.59	1.26	0.93	1.15	0.91	0.89	0.75
31 chemicals,etc	1.09	1.70	1.90	1.30	0.97	1.00	1.00	0.65	0.65
32 hori-frietallic products 33 basic metal industries	1.26	1.28	1.30	1.18	0.84	0.87	0.82	0.88	0.00
34 metal products	1.79	1.54	1.60	1.75	1.20	1.33	0.99	0.96	0.94
35 non-electric machinery	2.01	1.96	1.60	1.42	1.00	1.03	0.84	0.93	1.00
36 electric machinery	2.32	2.19	1.83	1.66	1.20	1.26	0.96	1.00	1.10
37 transport equipment	1.95	2.21	1.70	1.63	1.06	1.09	0.95	0.96	1.05
אט מווים אט אויס אט אויס איז אויס איז איז איז איז איז איז איז איז אויס איז	1.75	1.55	1.37	1.19	0.83	0.95	0.82	0.76	0.90
TOTAL MANUFACTURING									
20-21 food products	1.58	1.34	1.45	1.20	0.87	0.95	1.03	1.11	1.25
22 Develages, lobacco, elc 23 cotton textiles	2.79	2.58	1.29	0.96	0.57	0.80	0.50	0.54	0.60
24 wool.silk.etc	2.20	1.93	1.79	1.92	1.23	1.44	0.84	0.98	0.97
25 jute textiles	1.24	1.65	1.15	1.62	0.90	1.09	1.08	1.06	1.20
26 textile products	1.45	1.23	1.20	1.04	0.67	0.74	0.63	0.82	0.93
27 wood,furniture,etc	1.47	1.20	1.30	1.03	0.97	1.10	1.21	1.16	1.39
28 paper&printing,etc	2.71	2.64	1.85	1.54	1.18	1.20	1.08	1.08	1.19
30 rubber petroleum etc.	1.3∠ 1.67	1.70	1.15	0.98	0.03	0.08 0.99	0.03	0.57	0.03
31 chemicals,etc	2.68	2.30	1.96	1.47	1.06	1.21	1.06	1.06	1.05
32 non-metallic products	1.42	1.38	1.21	1.05	0.76	0.85	0.62	0.65	0.66
33 basic metal industries	1.58	1.45	1.55	1.49	1.07	1.10	1.05	1.10	0.94
34 metal products	1.86	1.65	1.60	1.75	1.20	1.32	0.99	0.96	0.94
35 NON-électric machinery 36 electric machinery	2.02	1.88	1.60	1.42	1.05	1.03	0.84	0.93	0.99
37 transport equipment	2.50	2.00	1.03	1.00	1.15	1.20	0.90	0.96	1.10
38 other manufacturing	1.88	2.11	1.40	1.03	0.71	0.81	0.33	0.83	0.93
WTD AVERAGE TOTAL MANUF	1.79	1.62	1.50	1.30	0.91	1.02	0.88	0.92	0.94
HIGH NPC ESTIMATES	2.01	1 8/	1 74	1 40	1 05	1 16	1 00	1.05	1.05
INDEGISTERED MANUE	1.93	1.70	1.51	1.43	0.92	1.05	0.91	0.94	0.99
TOTAL MANUFACTURING	1.97	1.78	1.65	1.43	1.00	1.12	0.97	1.02	1.03
OUTPUT SHARES									
REGISTERED MANUF	0.52	0.53	0.60	0.64	0.63	0.66	0.66	0.67	0.68
UNREGISTERED MANUF	0.48	0.47	0.40	0.36	0.37	0.34	0.34	0.33	0.32

The product level protection estimates were then aggregated into NPC estimates for each of the18 manufacturing subsectors producing tradeable products distinguished in the national accounts.<sup>12</sup> This aggregation included nominal protection estimates for products produced by small scale non-registered enterprises as well as the production of registered large and medium scale manufacturing firms. The NPC estimates for these subsectors were then projected backwards and forwards by using the implicit subsectoral GDP deflators to project domestic prices, and deflators constructed from the detailed US producer price index to represent trends in the world prices of the products included in each of the 18 Indian subsectors. The weighted average NPC of manufacturing as a whole was then derived from the subsectoral NPCs using output in reference prices as weights.

The 1987 study gave the following low and high estimates for the weighted average implicit nominal protection of manufacturing.<sup>13</sup>

	Registered	Unregistered	Total
Low	1.58	1.37	1.50
High	1.74	1.51	1.65

A few comments on these base estimates are in order. Firstly, the price comparisons had to contend with many standard difficulties of this kind of research, especially the problem of finding and estimating the border prices of internationally comparable products, since Indian policies in general prevented imports, and the problem of allowing for differences in quality and specifications. Aggregation to the entire manufacturing sector from a relatively small sample of price comparisons also involved some plausible but arbitrary assumptions. The fairly large gap between high and low estimates reflects the incompleteness and considerable uncertainty of the original price comparison exercise.

Secondly, weighted average nominal protection of unregistered small scale manufacturing was much below the nominal protection of registered (medium and large scale) manufacturing.<sup>14</sup> This difference principally reflects the much greater weight in the small scale sector of highly competitive, labour intensive industries (e.g. power loom textile production, garments, light engineering etc) with below-average nominal protection. By contrast, the higher weighted average nominal protection of registered manufacturing reflects the high costs and prices (relative to world prices) in 1987 of many import substitution capital intensive industries producing basic industrial materials e.g. petrochemicals, synthetic fibres and yarns, fertilisers, inorganic chemicals, steel, non-ferrous metals etc.

Thirdly, the high prices of industrial materials predominantly produced in the large scale sector fed through to and pushed up the costs and selling prices of medium and small scale firms in competitive industries, resulting in moderate to high nominal protection in many of these sectors as well.

Fourthly, most of the comparisons which were made between domestic and estimated international prices, were from data supplied by relatively large firms, on ex-factory prices

<sup>&</sup>lt;sup>12</sup> Two manufacturing sectors supplying repair services were excluded.

<sup>&</sup>lt;sup>13</sup> These estimates are higher than the estimated average NPC for total manufacturing of 1.42 reported in a previous study using the same basic survey data (Pursell & Gulati (1995). The estimates were adjusted upwards in the light of new information on some key industries and the implausibility of substantial negative protection in some sectors when the original estimates were projected forwards to the 1990s.

<sup>&</sup>lt;sup>14</sup> Registered factories under the Factories Act of 1948 were all those employing 10 or more workers and using electric power, and those not using power but employing 20 or more workers.

excluding excise taxes. These price comparisons were then used to infer the nominal protection of small scale firms producing the same or similar products. However, small scale firms were largely exempt from excise taxes, in addition to which the quality of their products in many industries was probably inferior. To take account of these two considerations, in a few cases rough upward adjustments were made to the NPC estimates for the unregistered sectors, but overall the probability is that the nominal protection of this sector is somewhat underestimated for these reasons.

Finally, in 1987 manufactured exports accounted for a very low share (about 6 percent) of total manufacturing production, and were concentrated in only a few industries, notably garments, cut diamonds, cotton textiles and shoes. Except for cut diamonds, which are practically entirely exported, the share of exports in the production of these exporting industries was also very low relative to total domestic sales, and to a large extent the exporting segments were specialised and seemed to have limited connection or impact on competition and price levels in the domestic market. Consequently it was not legitimate during this period to assume that competition in exporting industries would tend to equalise profits and therefore incentives for exporting and domestic supply, and then to infer protection levels in the domestic market from the more easily estimated protection levels of exports.<sup>15</sup>

In addition to the inherent uncertainty of the original base period study, the method used to project the 1987 NPC estimates forwards and backwards has its own problems, and presumably becomes less reliable the further the projection is carried, in particular because of the changing product composition of each sector over time and the failure of the national accounts deflators to systematically incorporate new products. Some indication of the likely direction and magnitude of the estimation error became apparent when the base ("low") NPCs projected to the late 1990s gave estimated NPCs for some sectors which were lower than those suggested by several partial price comparison surveys undertaken in those years. The alternative "high" estimate series starting at a weighted average NPC in 1987 of 1.65 for total manufacturing is an informed judgment on the likely upper bound of the series.

Even though, as this adjustment indicates, there are many problems in the construction of the implicit NPC series, it nevertheless seems to be the best available indicator of the level of and trends in the nominal protection of manufacturing over the long period which it covers. Certainly, because of the pervasive QRs until as late as April 2001, it is a better indicator than either tariff collection rates or average manufacturing tariffs. The relation between implicit protection and tariffs is discussed in the next section.

#### Implicit protection and tariffs

The *tariff collection series* (shown in Fig 2) is defined as total protective customs receipts (Customs duties including receipts from para-tariffs) from the import of manufactured goods in a given year, divided by total manufactured imports in that year.<sup>16</sup> It excludes Customs receipts from "countervailing" (CVD) duties (also known as "additional" duties) which are levied on top

<sup>&</sup>lt;sup>15</sup> Even if this assumption were made, as a result of a direct export subsidy (Cash Compensatory Support or CCS) that was paid on most manufactured exports prior to 1992, and also various other export subsidies, the inferred nominal protection of domestic production would have been positive

<sup>&</sup>lt;sup>16</sup> The series excludes imports of, and Customs revenue from, petroleum, oil and lubricants (POL), and gems and jewellery (mainly rough diamonds). It also excludes estimates of export related imports i.e. imports of inputs by exporters that are either duty free or subject to duty drawback. The detailed disaggregated Customs collections separating out collections on imports of manufactured goods from collections on imports of other products, used to be published in GOI's "Explanatory Memorandum" to the annual budget papers. However this was no longer provided in the 2000/01 and subsequent budget documents.

of customs tariffs at the same rate as excise taxes on domestic production of the same goods. A second series (not shown in Fig 2) includes the countervailing duties in total Customs receipts.

Before 1992, neither of these series has much relevance as an indicator of manufacturing nominal protection, since, as already noted, during this period the general operating principle of the import licencing system was to only allow imports when the products were not available from Indian producers.<sup>17</sup> Nevertheless, the series are of some interest because they provide an indication of the extent to which the cost to local manufacturers of imported non-competing intermediate material inputs and machinery was being pushed up by Customs duties. Until 1986 the series inclusive of countervailing duties is probably the best indicator of this cost-increasing effect. Until then excise duties on inputs could not be deducted from the excise duties payable on finished products. In 1986 a "Modified Value Added" (MODVAT) scheme was introduced which allowed most excise duties (including countervailing duties) on inputs (but initially not on capital equipment) to be deducted from excise duty liabilities on finished products. Consequently, after 1986 the series which excludes the excise component from Customs receipts is a better indicator of the cost increasing impact on local firms.

It is apparent from this latter series (Fig 2) that the average customs duties on imported manufactured intermediate materials and equipment, increased steadily from about 1970 and reached very high levels of around 70 percent in the mid-1980s. This reflected general increases during the period in Customs duties, and especially in "Auxiliary" duties<sup>18</sup> charged on top of Customs duties, and is one among a number of explanations for the high production costs about which manufacturers complained at the time. However, they were generally able to offset, or more than offset, these high production costs by selling their finished products at high prices which were insulated from import competition by the import licensing system. Before the introduction of MODVAT in 1986, manufacturing costs would have been increased by even more than indicated by this series. For this reason the MODVAT reform was an important precursor to the 1991/92 trade liberalization measures, since both the reduction in QR coverage and the tariff reductions were more readily accepted and managed by domestic firms once, under VAT principles, indirect taxes on their domestically purchased and imported inputs could be credited against their indirect tax liabilities on their sales. Following the sharp reductions in Customs tariffs which were initiated with the 1991/92 reforms, by the mid 1990s the average collection rate fell to much lower levels — around 35 percent — or about half the levels that had prevailed during the late 1970s and the first half of the 1980s. However, these collection rates (Fig 2) were far above estimated implicit nominal protection, which had dropped to about zero after 1993.

Figure 2 also shows a series of *unweighted average tariffs* (exclusive of CVD and exemptions) applicable to manufactured goods as shown in the Customs Tariff Schedules. The two pre-reform observations (122 percent in 1986 and 129 percent in 1991) typify the situation in the middle to late 1980s. They reached these astronomical levels in a series of regular increases which commenced in the 1970s.<sup>19</sup> Starting with the reforms announced in 1992, however, average manufacturing tariffs declined dramatically to 40 percent in 1996. They reached a low point of 35 percent in 1998, but then they increased again to around 40 percent or just below with new para-tariffs introduced in the following three budgets. After a pause, a new

<sup>&</sup>lt;sup>17</sup> Independently of this, collection rates are inherently misleading indicators of protection levels since imports are a decreasing function of tariff levels. If tariffs protecting a local industry are high enough there will be no imports and the protection to the industry will not be captured by the collection rate.

<sup>&</sup>lt;sup>18</sup> Auxiliary duties were abolished by the 1991/92 reforms

<sup>&</sup>lt;sup>19</sup> Mainly from successive increases in "Auxiliary" duties.

round of pre-announced tariff cuts started in 2004, which brought the average down to about 12 percent in 2007. Further reductions were announced in the March 2007 budget which have probably cut average industrial tariffs to well below 10 percent in fiscal 2007/08.<sup>20</sup> Both the early post-1992 and the more recent post-2004 rounds of tariff cuts were "tops down", with the main emphasis on reductions in top rates. This drastically reduced the dispersion of tariffs and the potential for high effective protection resulting from tariff escalation. In January 2004 around 80percent of industrial tariff lines were at a target maximum rate of 20 percent,<sup>21</sup> and the reductions since then to a general maximum of 10 percent will have further reduced tariff dispersion.

For the reasons already given, until the post 2004 period, there is no reason to think that import duty collection rates or average tariffs would have much connection to realized protection of the manufacturing sector. Consequently, despite its evident weaknesses, the implicit NPC series is a superior indicator of the level of, and trends in manufacturing nominal protection. More generally, as illustrated in Figure 2, in several ways it fits in a plausible way into the economic history of the period it covers. Firstly, the extremely high implicit nominal protection of between 80 and 100 percent during the 1970s until the mid-1980s is consistent with what is known about the highly restrictive import licensing system of that period. Secondly, the steep decline in implicit nominal protection from around 50–60 percent in 1986 to about zero in 1993 is consistent with the real Rupee devaluation of approximately 135 percent during the same period. The devaluing Rupee during these years pushed up the border prices of imported manufactured goods expressed in Rupees, and these increases were far greater than the corresponding increases in the prices of domestically produced manufactured goods that went along with domestic inflation and other factors, including the increased cost in Rupees of imported intermediates and machinery. Consequently, as shown in the implicit nominal protection series, the average excess of the prices of domestically manufactured goods over the Rupee import prices of the same goods consistently declined, and by 1993 it seems to have disappeared altogether.

According to the implicit protection series, after it bottomed in 1993, implicit average nominal protection of the manufacturing sector as a whole increased to a maximum of around 10 percent by 1995, but since then up to the latest estimate in 2006 in most years it was at or below zero. As is evident from Figure 2, this was well below the average manufacturing tariffs in those years and also below the average tariff collection rate. It was not until 2006 or 2007 that average tariffs came down to somewhere in the vicinity of estimated implicit protection, apparently eliminating most of the tariff redundancy that followed the 1986–93 Rupee devaluations.

The indicators illustrated in Figure 2 are averages, and it is possible that the protection of individual products or subsectors within manufacturing may have deviated from this pattern. In particular, after 1993, tariffs and tariff collection rates were *prima facie* a better indicator of the nominal protection of domestically produced intermediate goods and machinery, most of which were freed from import licensing during the 1991/92 reforms. But according to the disaggregated implicit protection series (Table 1) the changes in the implicit protection rates of the intermediate good subsectors (e.g. chemicals, basic metal industries, metal products, non-electric machinery etc ) were not very different from aggregate manufacturing, indicating that

<sup>&</sup>lt;sup>20</sup> The averages referred to here are unweighted averages of all "non-agricultural" tariff lines defined to include HS chapters 25–97. According to the 2007 WTO *Trade Policy Review* report on India (WTO, 2007) in 2006/07 the average using the WTO's definition of non-agricultural tariff lines was about 2 percentage points higher.

<sup>&</sup>lt;sup>21</sup> World Bank (2004), Vol II p.41.

there was also very considerable tariff redundancy in these subsectors until about 2006. This in turn suggests that most of the manufactured intermediates and machines that were being imported over tariffs during this period were not directly competing with domestic production. It is also in principle possible that protection rates of individual products still subject to the import licensing system could have been higher than the average implicit rate, including nearly all manufactured consumer goods until, the final phase-out of the system in April 2001. But again, even though this may have happened for some individual products, it was not sufficiently widespread to show up at the level of the predominantly consumer good subsectors e.g. food products, beverages & tobacco, textile products, wood furniture etc, leather and fur products. As indicated in Table 1, in most years the estimated implicit average protection rates of these subsectors were below or in the region of zero for the entire 1993–2006 period.

## 3. MANUFACTURING TRADE POLICIES SINCE INDEPENDENCE<sup>22</sup>

#### From Independence to the 1966 devaluation.

During the second half of the nineteenth century until about 1921 India's British rulers followed regional free trade policies with practically no restrictions or taxes on exports to or imports from Britain, its other colonies, and Commonwealth countries. These almost free trade policies began to change in about 1921 following the collapse of the post-World War I boom, and protective tariffs continued to be introduced during the 1920s and 1930s. Then in 1940, general controls were imposed on all imports and exports in order to deal with the scarcities of goods, shipping and foreign exchange and wartime priorities. The general rule was that imports would only be allowed if they were essential and could not be supplied by local industries.

After independence in August 1947, substantial foreign exchange balances built up during the second world war, followed by the 1949 pound sterling devaluation, initially provided some scope for relaxing the wartime import and other controls by expanding the scope of Open General License (OGL) lists (i.e. lists of goods that could be imported without obtaining a license) and increasing tariffs in order to take some of the pressure off the import licensing system. However by 1956 inflation had begun to erode the effects of the devaluation, and this continued and accelerated during the next 10 years, in effect amounting to continuing and substantial real appreciation of the Rupee in relation to the then fixed rates with the pound and the US dollar. Consequently, the start of the Second Five Year Plan in 1956 coincided with a severe foreign exchange crisis, and the following period up to 1966 was characterised by comprehensive and tight administration of the import licensing system. These foreign trade policies were an extension of more general economic policies under which the "commanding heights" of the industrial economy were dominated by state enterprises, and the private sector was subject to very extensive controls, which collectively came to be known as the "License Raj". In June 1966 the Rupee was devalued, and this was accompanied by a brief liberalisation episode discussed in the next section.

During this period nearly all imports were either subject to discretionary import licensing or were "canalised" by monopoly government trading organizations, with some

<sup>&</sup>lt;sup>22</sup> The discussion in this section on policies before 1990 relies to a large extent on Pursell (1992). More information on the earlier years-especially the 1960s and 1970s- can be found in references cited there, in particular in Bhagwati and Desai (1970), Bhagwati and Srinivasan (1975), Nayyar (1976), Panchamukhi (1979), Wolf (1982), and Joshi and Little (1994).

flexibility provided by changing OGL lists. The products on the OGL lists could only be imported by "actual users" and could not be resold: they were almost entirely raw materials, components or machines which were not domestically produced and required by domestic producers. In this system tariffs lost most of their relevance for regulating the quantity of imports and for protecting local industries: their principal function was to raise revenue and to transfer quota rents from or to the recipients of import licenses. After 1956 import licensing was regularly tightened in response to the steadily worsening foreign exchange situation, and tariffs were increased and reached very high levels by early 1966. As a result large and highly variable gaps opened up between the domestic and international prices of manufactured products. In order to offset the anti-export bias resulting from the increasingly overvalued exchange rate, subsidies — many of which were reported to be substantial were provided to manufactured exports, principally by allowing exporters to import duty free otherwise restricted raw materials, components and machines that they could sell in the domestic market for premiums that reflected scarcity values. As a result of these subsidies and other export incentives for manufacturing, a fairly wide range of manufactured products began to be exported for the first time.<sup>23</sup> There are no comprehensive estimates of implicit manufacturing NPCs during the 1960s and before, but the relevant literature strongly suggests that average implicit protection was very high and increasing during the pre-devaluation period. and that it probably remained high after the devaluation. Certainly there was no drastic change in Indian policies or in world prices which would explain a sudden jump from lower levels to the estimate of between 79 percent and 97 percent for 1971, the first year of the implicit NPC series illustrated in Figure 2.

#### From the 1966 devaluation to 1979

The nominal devaluation in June 1966 was 57.5 percent in relation to the pound and the US dollar, but owing to high domestic inflation it has been estimated that it was about 30 percent in real terms. In the following years inflation was gradually brought down to much lower levels, and between 1971 and 1979 the REER declined by another 42 percent. In part this followed the decline of the British pound against other currencies until the Rupee–Sterling peg was removed in 1975, and in part it resulted from accelerated inflation in the rest of the world associated with the 1973 oil shock, from which India was largely insulated because of its highly restrictive trade policies and the resulting very minor role of trade in its economy.

The 1966 devaluation was accompanied by some relaxation of import licensing, tariff reductions and the abolition of some export subsidies and reductions in others. However, by 1968 tight import licensing had been reinstated under which the import of nearly all consumer goods (including textiles) was effectively banned and the only imports allowed were intermediate materials, components and capital equipment provided "actual users" could demonstrate that they were "essential" and not "indigenously available". As previously, tariffs — which remained about the same during the 1970s — were mostly used to transfer some of the import licensing rents to the government, and were irrelevant as protective instruments, except to the extent that they influenced the cost of imported intermediates and equipment that was not locally produced. Reflecting the irrelevance of tariffs, the Tariff Commission, which had been established in 1945, was abolished in 1976. This remained the situation until the end of the 1970s, when a new phase of very slow partial liberalisation commenced.

<sup>&</sup>lt;sup>23</sup> There are no studies which have attempted to comprehensively quantify the effects of these policies on manufacturing incentives during these years, and doing so would be a major research task in view of the scattered and very incomplete data that is available before about 1965. The key missing bits of information are nominal protection estimates for manufacturing, which would require detailed comparisons of domestic and border prices of both tradable inputs and finished products.

The effects of these changes in the exchange rate and trade policies on estimated implicit protection in manufacturing can be seen in Figs 2 and 3. There are no estimates of average tariffs during this period, but the initial cuts following the devaluation which were soon reversed clearly show up in the dip and subsequent increase in the collection rate between 1966 and 1973. According to the NPC time series, implicit protection was extremely high between 1971 and 1975, but then declined quite sharply to (still very high) levels of between 60–80 percent in 1978 and 1979. This decline in the second half of the decade was associated with an acceleration after 1975 in the devaluation rate of the real effective exchange rate (Fig 3).

### From 1979 to 1986

The Rupee devaluation of 1966 and the continuing depreciation that followed during the 1970s helped reduce the current account deficit and despite large increases in petroleum imports after 1973, fairly substantial foreign exchange reserves were built up. This improved current account situation led to a rapid expansion of imports, which with slowing export growth created large current account deficits in 1979 and 1980. A crisis was averted in 1980 and 1981 with the help of an IMF loan. The real value of the Rupee actually appreciated slightly in 1981 and held steady at the new level until 1986 (Fig 2). A process of slow, cautious liberalization of non-tariff import controls which had started in 1977-78 continued during this period, except for a tightening episode in 1980–81. The principal way this was done was by expanding the number of non-competing machines and intermediate materials and components on OGL lists, and "decanalising" other products i.e. removing them from the lists of products which could only be imported by the various government owned or approved "canalising agencies". There was also some liberalisation of domestic industrial controls, which had an indirect liberalising impact on import controls. The major thrust of these policy changes was to ease the supply situation of important non competitive inputs and to give manufacturing industries better and more flexible access to intermediate materials and capital equipment. The steep decline in implicit protection between 1981 and 1985 (Fig 2), from about 85–105 percent to 40–55 percent suggests that this strategy paid off to some extent, since the reduction in measured protection resulted from a combination of lower domestic prices<sup>24</sup> and higher international prices at a basically unchanged real exchange rate. However domestic industries continued to be insulated from direct import competition, both by the QR system and by prohibitively high tariffs. In fact, in order to collect import licensing rents that otherwise would have gone to import license holders, during this period the government steadily increased tariffs, as is apparent from the upward gradient of the import duty collection coefficient (Fig 2). In 1996 the unweighted average tariff on manufactured goods was estimated at 122 percent, even after allowing for large numbers of special exemptions and partial exemptions that could be identified in the published tariff schedule.

## From 1986 to 1993

Starting in about April 1985, a new policy commenced under which the Rupee was steadily devalued in real terms. This continued without a break for the next six years, almost on a monthly basis, until there was a sharp crisis-induced devaluation in July 1991, followed by about another year of further depreciation until September 1992. As measured by the REER

<sup>&</sup>lt;sup>24</sup> Between 1980 and 1985 the national accounts implicit deflator for manufacturing came down in real terms by approximately 8 percent or 13 percent, depending on whether the general inflation rate is represented by the overall national accounts deflator or the wholesale price index.. The rest of the decline in estimated implicit nominal protection during these years is due to increases in the world prices of the products in India's manufacturing production bundle expressed in real Rupees.

index, the total devaluation during the seven years was very large, around 130 percent, and it radically changed the environment for India's trade policies. During the 1980s domestic prices of tradeables were delinked from international prices by the import control system backed up by very high tariffs. In addition manufactured exports, although growing faster than domestic production, were very small in relation to total manufacturing output - about 6 percent in the mid-1980s. Hence overall the massive Rupee devaluation did not directly pass through to domestic industrial prices. It principally affected them indirectly in a very minor way through increases in export prices and in the prices of intermediates and capital goods that were allowed to be imported, which in turn increased manufacturing costs. However, the devaluation showed up in very big increases in border prices expressed in Rupees, which led to a steep decline in average implicit manufacturing protection, as measured by the excess of domestic ex-factory prices over border prices. Consequently, implicit protection declined from a range of about 50-60 percent in 1986, to between minus 10 percent and zero in 2003. This had a number of very important repercussions on manufacturing trade policies. First, it made the liberalisation program that started in 1991 quite painless, including especially the abolition of nearly all import licensing of manufactured intermediates and of machinery and equipment, the removal of a major export subsidy, and a pre-announced tariff reduction program that continued into the mid-1990s. Secondly, many Indian manufacturing firms that had felt vulnerable to import competition, now found that — following the correction of the earlier exchange rate overvaluation — they could not only easily compete with imports but could outcompete foreign manufacturers in export markets. Combined with new sweeping domestic deregulation of manufacturing that accompanied the trade policy program, this created a new momentum in the manufacturing sector in terms of investment, productivity improvements and expansion.

### From 1993 to 2007

After 1993 and still continuing in mid-2007, the exchange rate has been managed by regular adjustments of the nominal rates which have stabilised the REER index at its post-devaluation level within a narrow range of about 10 percent (Fig 3). The size of the devaluation up to 1993 probably overshot the decline needed to re-establish foreign exchange balance and to support the 1991/92 trade policy reforms, but maintained at this level for the next 14 years (by far the longest period of real exchange rate stability in India's independent economic history) it also proved adequate to support the final removal of the import licensing system between 1988 and 2001, and the new tariff reduction program in manufacturing which started in 2003/04. The period since 1993 can be divided into three subperiods: 1993 to 2001, 2001 to 2004, and 2004 to the present.

*1993 to 2001:* After the 1991/92 reforms producers of most intermediate materials and capital goods were no longer protected by import licensing, and between 1993 and 1996 manufacturing tariffs were cut by more than half. But as is apparent from Figure 2, the devalued exchange rate plus manufacturing tariffs (after the cuts they averaged about 30–40 percent) were more than sufficient to fend off competitive pressures on the import side. Tariff protection was also reinforced by anti-dumping which India began to use for the first time in the early 1990s, and which was initially mainly applied to manufactured intermediates. In addition, in 1995 about 36 percent of manufacturing production was still protected by some kind of explicit non-tariff barrier (Fig 1).<sup>25</sup> This included the entire textile and garment sector as a result of the continuing *de facto* ban on imports of consumer goods.

<sup>&</sup>lt;sup>25</sup> In 1995 about two-thirds of tradeable GDP was still protected by non-tariff barriers: 84 percent of manufacturing, 40 percent of mining and quarrying and 36 percent of manufacturing.

During the second half of the 1990s this began to change, in large measure as a response to international pressures linked to the Uruguay Round agreements and the negotiations associated with them.<sup>26</sup> Following the loss of an important case at the WTO,<sup>27</sup> starting in 1998, the general import licensing system was gradually dismantled, and on April 1, 2001 the last 715<sup>28</sup> of 2714 tariff lines were removed from the restricted list and the system itself was abolished. At the same time, however, to provide additional security to domestic firms, between 1997 and 2001 tariffs were increased through the use of para-tariffs<sup>29</sup> applied on top of Customs duties. Hence, despite the phase-out of import licensing, during this period most manufacturing firms remained insulated from import competition. This is consistent with the implicit nominal protection estimates, which suggests that manufactured good prices were on average about equal to or below world prices (Fig 2). The impact of world market conditions was mainly via manufactured exports, which, as already discussed, began to expand at a faster rate than overall manufacturing growth.

2001 to 2004. After almost 50 years of *de facto* autarchy, the lifting of the import licensing controls generated considerable apprehension as to how well domestic producers of manufactured consumer goods and agricultural products would fare in a more open import regime. To deal with these apprehensions, a "War Room" was established in the Ministry of Commerce and imports of a list of 300 "sensitive" products were monitored to ensure that prompt action would be taken to pre-empt or minimize disruption to local production. More substantively, during and following the Uruguay Round negotiations the government made sure it employed, or had on call, all the techniques for protecting or subsidising domestic producers that it judged to be compatible with the WTO regime.<sup>30</sup> For manufacturing, these included: (a) Leaving about 28 percent of manufacturing tariff lines unbound (i.e. with no WTO-mandated upper bound) while the others were bound at high levels — final goods at 40 percent, intermediates at 25 percent; (b) From 2001, specific tariffs on most textile fabrics and garments which are much too high to allow any low priced imports of these products into the Indian domestic market;<sup>31</sup> (c) New local content (TRIMS) rules for the auto industry, introduced in 1995 and dropped (following objections from other WTO members) in 2002; (d) The use of anti-dumping; (e) The continued use of State Trading Enterprises (STEs) to control imports of urea and petroleum products (f) The use of tariff rate quotas (TRQs) to protect local producers of edible oils and powdered milk (g) New rules on technical standards introduced in 2000, under the administration of the Bureau of Indian Standards;(h) New SPS rules, mainly applicable to imports of livestock and agricultural products, but also to processed foods.

After 2001, it soon became apparent that the "war room" psychology had greatly exaggerated the danger of rapidly expanding imports to domestic industries. During the next couple of years existing tariffs and the measures mentioned above proved more than adequate to keep out competing imports, and eventually, without a formal announcement, the "sensitive list"

<sup>&</sup>lt;sup>26</sup> For a brief description of these pressures and negotiations see World Bank (2004) Vol II, pp 16-17.

<sup>&</sup>lt;sup>27</sup> Since 1955 India had used the GATT balance of payments provision (Article XVIII (b)) to justify its routine use of QRs. In December 1995 this longstanding practice was challenged at the WTO by the US, the EU and a number of other developed countries. India fought a long legal rearguard action at the WTO to preserve this practice, which it eventually lost after an appeal to the WTO Tribunal.

<sup>&</sup>lt;sup>28</sup> This last batch were mainly agricultural tariff lines. Most of the manufacturing and mineral tariff lines were removed from the import licensing system in 1999 and 2000.

<sup>&</sup>lt;sup>29</sup> A "Special Duty" or "Surcharge" from 1997 to 2001, and a "Special Additional Duty" (known as the SAdd) from March 1998 to March 2004. See World Bank (2004), Vol II, Table 3.6.

<sup>&</sup>lt;sup>30</sup> For more detail on these measures see World Bank (2004), Vol II, pp 18–21 and pp 38–43.

<sup>&</sup>lt;sup>31</sup> For the protective effects of the specific duties on textile fabrics and garments see the section on textiles and garments in World Bank (2006) Vol II.

quietly disappeared from official publications and public discussion. At the same time, manufactured exports entered a new phase of rapid expansion, and this was supplemented by even faster growth of IT and outsourcing service exports. Together with increased capital inflow, these developments created a strong balance of payments, historically high foreign exchange reserves, and were accompanied by faster general economic growth.

2004 to the present. Responding to the new confidence that these developments created, in April 2003 a new, pre-announced program of drastic reductions in industrial tariffs commenced, which over the next four years reduced the average by approximately two thirds, from 33 percent in 2002/03 to 12 percent<sup>32</sup> in 2006/07 (Fig 2). These reductions included the abolition in March 2004 of the last significant para-tariff. In practically every year since Independence, protective para-tariffs of different types which supplemented Customs duties had been used, and greatly increased the complexity of the tariff system, so this change contributed to transparency and reduced transaction costs as well as reducing available protection. Following new tariff cuts introduced in the March 2007 budget, average industrial tariffs are probably now well below 10 percent since most tariff lines that were previously at either 12.5 percent or 10 percent were cut to 10 percent or 7.5 percent.<sup>33</sup> Hence, as measured by average *ad valorem* industrial tariffs, from being one of the world's most protected manufacturing sectors, India's manufacturing is now a low protection sector by world standards. Moreover, as indicated earlier, because of the "tops down" reduction process, the industrial tariff structure is very uniform. In 2006/07 over 80 percent of industrial tariff lines were at the then general maximum of 12.5 percent or below, leaving limited scope for high effective protection through escalated tariff structures. Tariff dispersion will have been further squeezed by the new reduced tariffs in force during 2007/08.

These new low industrial tariffs are now down in the vicinity of estimated average implicit protection rates, which have fluctuated around zero during the 15 years since 1992/93 (Fig 2). This means that the very considerable tariff redundancy that existed until as recently as 2003/04 or even 2004/05 appears to have been eliminated, and that for the first time since Indian independence, most manufacturing tariffs are now probably binding, so that on the import side the manufacturing sector is much more exposed to the ups and downs of conditions and prices in world industrial markets than it was in the past. On the export side, the greatly increased share of manufactured exports in manufacturing production is also exposing the sector to world markets. Some qualifications and implications of this new paradigm for Indian manufacturing are discussed in the concluding section.

#### 4. CONCLUDING REMARKS

This paper has focussed on the evolution of India's manufacturing trade policies and has omitted the separate history of India's agricultural trade policies. This is a very different and complex story which is well documented in numerous studies undertaken over the past 20 years.<sup>34</sup> During the 1970s and 1980s the agricultural sector was comprehensively protected against import competition by the import licensing system, parastatal and other government

<sup>&</sup>lt;sup>32</sup> Authors' estimates. According to the 2007 TPR report on India (WTO (2007)) the average (HS 25-97) was 11.9 percent, and 14.1 percent on the alternative WTO definition of "non-agricultural". The principal reason for the higher average on the WTO definition is that it includes fish & crustacean tariff lines (in HS Ch 3) for which India has set high agricultural style tariffs.

<sup>&</sup>lt;sup>33</sup> The average level and distribution of the new tariff schedule has not so far been quantified.

<sup>&</sup>lt;sup>34</sup> For example in Gulati, Hanson and Pursell (1990), Gulati and Kelley (1999), and Mullen, Orden and Gulati (2005). A recent extension and update with references to the literature on this topic is in Pursell, Gulati and Gupta (2007).

mandated import monopolies, prohibitively high tariffs, and important agricultural commodities such as rice and cotton were disconnected from export markets by export controls. Fertiliser production, imports and distribution were subject to detailed controls, and both producers and farmers were subsidised. Agriculture's principal non-traded inputs — canal water, electricity and credit — were also heavily subsidized. Despite the comprehensive protection against import competition that was in place for this extended period, in most years during the 1970s and 1980s, weighted average domestic agricultural prices turned out to approximate average border prices after adjusting for port and domestic transport and handling costs. It has been shown that these low prices could only be partly explained by the large input subsidies which steadily increased in real terms up to about 2000.

In contrast to agriculture, during the 1970s and most of the 1980s, as discussed in this paper, implicit protection of manufacturing was very high. Consequently, during this period the combination of low implicit protection of agriculture and very high implicit protection of manufacturing created a strong anti-agricultural bias in the incentive system. But all this changed to approximate neutrality after the 1986–1993 devaluations, following which implicit protection of manufacturing went to about zero, while implicit agricultural protection also remained at about zero as domestic agricultural prices continued to roughly track world agricultural prices, despite the massive devaluation and continued prohibitively high tariffs and other instruments protecting domestic agricultural markets against import competition.

Agriculture was deliberately left out of the 1991/92 reform program, and agricultural tariffs were not touched by the new tariff reduction program that started in 2003/04. In 2006/07 unweighted average agricultural tariffs were about 40 percent,<sup>35</sup> almost four times the level of average industrial tariffs, and as judged by this criterion India's agricultural sector remains one of the most protected in the world. Moreover, agricultural tariffs are highly dispersed, with about 15 percent in a range of 50–100 percent. These high tariffs have been maintained despite very substantial tariff redundancy for most agricultural commodities, with domestic prices not only lower than duty inclusive import prices, but frequently also lower than cif prices. Symptomatic of current "just in case " agricultural trade policies, current applied tea and coffee tariffs are 100 percent despite the fact that domestic prices approximate export prices, since both these commodities are sold in auction markets in which both exporters and domestic traders compete. This separate and special treatment of agricultural trade policies reflects strong pressures from many farmer and processor interest groups, mediated through and supported by the Ministry of Agriculture. As discussed in a recent paper,<sup>36</sup> this opens up the possibility that as India develops, the earlier anti-agricultural bias paradigm will be reversed, since, unlike manufactures and minerals, upward pressures on domestic agricultural prices are not constrained by low tariffs. Thus, it is possible that in the future India will traverse a high protection, high subsidy path for its agriculture, similar to the path followed by most of the older developed countries as well as the developing middle income countries such as Korea.

The exclusion of agriculture from most of India's trade liberalisation reforms during the past 15 or so years, also has indirectly led to the continuation of trade controls and other interventions in manufacturing activities that are related to the agricultural sector. The principal interventions are:

• TRQs and high tariffs (about 50 percent or 80 percent) protecting edible oil production

<sup>&</sup>lt;sup>35</sup> Authors' estimate. According to the 2007 WTO TPR report (WTO( 2007))the unweighted average of HS 01 to HS 24 was 42.7 percent and 40.8 percent using the WTO definition of agricultural tariff lines.

<sup>&</sup>lt;sup>36</sup> Pursell, Gulati and Gupta (2007).

- For sugar refining, detailed and highly variable interventions including the periodic use of QRs, high or low tariffs, export subsidies and production subsidies
- The use of TRQs with high out-of-quota tariffs to protect domestic powdered milk production
- High tariffs (mostly 30 percent ) protecting the domestic production of other processed foods, for example meat and fish preparations, confectionery, cereal preparations, fruit and vegetable preparations, juices and soft drinks.
- An STE monopoly over urea imports, price controls and production subsidies for the domestic urea industry, and uniform, subsidized and controlled nation-wide urea prices for farmers.

Apart from these agriculture-related exceptions to trade liberalization in the manufacturing sector, the other principal exceptions are:

- Specific import duties on most textile fabrics and garments, which are much too high in *ad valorem* terms for there to be any significant import competition in the low priced segments of domestic fabric and apparel markets<sup>37</sup>
- Prohibitively high tariffs (60 percent) protecting the auto industry, even though domestic ex-factory auto prices are close to or below world prices
- STE control of petroleum product imports

In addition to these exceptions, as noted previously, India has allowed itself plenty of scope to increase tariffs without facing WTO constraints, by leaving large numbers of industrial tariffs unbound and setting bound tariffs far above its present applied tariff levels. This leaves open the possibility that tariffs could be suddenly increased, and the resulting uncertainity for exporters to India and for Indian importers can be a serious import barrier.<sup>38</sup> In addition India has in place the normal armoury of WTO-sanctioned institutions and mechanisms which can be employed to restrict imports, including a highly developed and frequently used anti-dumping system, rules on technical standards administered by the Bureau of Industrial Standards, and SPS rules which-as in other countries-could potentially be applied to make life difficult for processed food importers.

Despite these actual and potential exceptions to liberal trade policies in India's manufacturing sector, the sector as a whole is now very open, and the orientation of trade policies is overwhelmingly towards even greater openness. This trend is unlikely to change as long as manufactured exports continue to flourish and are not drastically hindered by protectionist measures in importing countries, or by serious disruptions of the international economy.

<sup>&</sup>lt;sup>37</sup> There is evidence of considerable tariff redundancy in these specific tariffs, with typical domestic ex-factory prices about equal to or even below import prices, suggesting that there would be few imports were the specific tariffs abolished. This is not surprising as India is a major exporter of textiles and apparel. These and related issues are discussed in World Bank (2006), Vol II.

<sup>&</sup>lt;sup>38</sup> In recent years there have been a number of sudden tariff increases to prohibitive levels, but these have so far been confined to agricultural or processed agriculture products e.g. tea, coffee, garlic, chicken parts. As in other countries, for most manufactured products, when domestic producers complain, anti-dumping is the main weapon that has been used to intimidate exporters from competing too strongly in the Indian market.

### APPENDIX

#### **METHODOLOGY: IMPLICIT PROTECTION TIME SERIES**

As noted in the text, the starting point for the time series estimates are the price comparison surveys carried out by team at the World Bank's Delhi office during 1986, 1987 and the first half of 1988.<sup>39</sup> These surveys compared domestic ex-factory prices net of excise taxes during these years, with estimated world market prices of the same or similar products. The world market prices were mostly cif India plus estimated port costs (unloading, port charges etc) and domestic transport costs if the domestic ex-factory prices with which they were being compared were at inland locations. For some products that were being exported, the domestic prices were compared with ex-factory export prices (fob minus transport, port and other costs of getting the products to the fob stage). The surveys also obtained price information on both domestic and imported inputs, many of which were intermediate manufactured products. All told, useable information was received from about 60 firms and about 180 manufactured products, with at least a few from each of India's principal manufacturing subsectors.

This data base was used to assign protection coefficients (NPCs) to 59 manufacturing subsectors grouped as shown in Table A1. The subsectors were as defined in the 3-digit classifications in the 1985–86 *Annual Survey of Industries* (ASI), which was the latest published issue when this work was done during early 1988. In Table A1, most of the 3-digit industries are as they were published in the ASI volume (e.g. ASI sector 376, bicycles, rickshaws and parts) but others were aggregated (e.g. synthetic textiles includes ASI subsectors 247, 248 and 249<sup>40</sup>). The protection rates assigned were:

L=Low <30% M=Medium ≥ 30 % < 70% H=High ≥ 70%

In the original research, three assignments were made to each subsector, for average tradeable input protection, average output protection, and average value added (effective) protection, but for the purposes of the nominal protection time series Table A1 just reports the output protection assignments.<sup>41</sup> The assignments are best described as well informed guesstimates. They relied on (1) The survey data base of price information and price comparisons. Although this was extensive, it was far from comprehensive and was subject to the many well known problems and uncertainities inherent in this type of survey work.<sup>42</sup> (2) The impressions and notes of the survey team from many meetings and interviews with firm and trade association executives, including meetings at firms which in the end did not provide hard, usable price data (3) For domestic prices, other general sources including especially trade association reports, annual company reports, reports of government organizations — especially the Bureau of Industrial Costs and Prices (BICP) — and data and inferences from the government's detailed wholesale price index statistics.

<sup>&</sup>lt;sup>39</sup> The team consisted of Garry Pursell (initiation, design and management), Kewal Ram and Faisal Beg. Most questionnaires were completed during or after interviews with firm executives. Several visits and/or mail contacts were usually needed before questionnaires were satisfactorily completed. The work continued for approximately two years, but other responsibilities meant that at any given time only one team member was working on the project. Despite the very limited resources allocated to the project, a substantial knowledge base of hard data and more general knowledge about India's manufacturing industries was created. In any case this was the only systematic survey focusing on price comparisons since a much less comprehensive effort dealing with the late 1960s (Panchamukhi,1979). Some of the results of the World Bank surveys are included in World Bank (1989), Ch 4 and Statistical Appendix Tables 4.1-4.10.

<sup>&</sup>lt;sup>40</sup> Respectively sector 247 (Spinning, weaving and finishing of other textiles, synthetic fibres, rayons, nylons etc); sector 248 (Printing, dyeing and bleaching of synthetic textiles); sector 249 (Silk and synthetic fibres textiles not elsewhere included)

<sup>&</sup>lt;sup>41</sup> The input protection and effective protection estimates and other information on the ASI 3-digit sectors are in World Bank (1989) Table Table T.A 4.8

<sup>&</sup>lt;sup>42</sup> For this survey, a special difficulty was obtaining information on world prices, since for most locally produced products the import licensing system and prohibitive tariffs precluded competitive imports altogether. Despite this, in some industries, Indian businessmen were remarkably well informed about conditions and prices in world markets, even though they had been insulated from import competition for many years. There was also some information on import prices of intermediate materials and components that were locally produced, when imports were allowed under the various schemes for exporters.

(4) Specialized international publications and other sources of information on world prices (5) Unit values from the Indian trade statistics and the trade statistics of other countries (6) Value added ratios calculated from the ASI statistics, needed for estimating effective protection i.e. the protection rates of value added.<sup>43</sup>

		Table A.1			
	Nominal protection estimates 1986/87				
		ASI subsector	NAS sector	NAS sector	NAS sector
		groups: Output	registered	unregistered	reg+unreg
		protection	NPC	NPC	NPC
	ASI subsector codes	assignment	1986/87	1986/87	1986/87
	-				
Food Processing	200-219,ex 206,207,210,211,215	L			
Edible Oils & Fats	210,211	Н			
NAS sector 20-21: Food products			1.45	1.45	1.45
Beverages	220-224	L			
Tobacco Products	225-229	L			
NAS sector 22: Beverages, tobacco etc			1.29	1.29	1.29
Cotton Textiles	230-239	L			
NAS sector 23: Cotton textiles			1.15	1.15	1.15
Wool Textiles	240-244	L			
Silk Textiles	245-246	L			
Synthetic Textiles	247-249	Н			
NAS sector 24: Wool, silk etc			1.79	1.79	1.79
Jute, hemp & mesh Textiles	250-259	L			
NAS sector 25: Jute textiles			1.15	1.15	1.15
Garments /1	260,264,265	L			
Other Textile Products	261-263,266-269	L			
NAS sector 26: Textile products			1.20	1.20	1.20
Wood Products	270-279	М			
NAS sector 27: Wood, furniture etc			1.30	1.30	1.30
Pulp & Newsprint	280	Н			
Paper Products#	281-283	Н			
NAS sector 28: Paper & printing etc			1.94	1.70	1.85
Leather & Fur Products /2	290-299	L			
NAS sector 29: Leather & fur products			1.15	1.15	1.15
Tyres & Tubes	300	Н			
Rubber Footwear#	301	Н			
Other Rubber Products#	302	Н			
Plastic Products#	303	М			
Petroleum Products /3	304-305	М			
Coal Products /4	306-307	М			
NAS sector 30: Rubber, petroleum etc			1.63	1.59	1.62
Basic Chemicals /5	310	Н			
Fertilizers & Pesticides	311	Н			
Paints, Varnishes&Laquer	312	Н			
Drugs & Medicines	313	Н			
Perfumes,Cosmetics,Soaps	314	Н			
Syn.Resins,Fibres&Plastics	316	Н			
Other Chemical Products	315,317-319	Н			
NAS sector 31: Chemicals etc			1.96	1.96	1.96
Glass&Glass Products	321	L			
Cement, Lime&Plaster /6	324	L			
Other Non-metallic products	320,322,323,325-329	L			
NAS sector 32: Non-metallic products			1.21	1.21	1.21
Iron & Steel /7	330	M			
Iron & Steel Foundries#	331	М			
Ferro Alloys	332	Н			
Non-ferrous metals /8	333-339	Н			
NAS sector 33: Basic metal industries			1.61	1.30	1.55
Metal Products	340-347	М			
NAS sector 34: Metal products			1.60	1.60	1.60

<sup>&</sup>lt;sup>43</sup> Value added used for this purpose was defined as the value of output minus the value of tradeable materials consumed. This was not (and still is not) the same as value added as defined in the ASI statistics, which also deduct all the non tradeable inputs such as electricity, water and repairs. The effective protection assignments in the 1989 World Bank report were therefore "Corden" indicators, which include the protection of the non-tradeable inputs.

	Table A.1(continued)						
	Nominal protecti						
	-	ASI subsector	NAS sector	NAS sector	NAS sector		
		groups: Output	registered	unregistered	reg+unreg		
		protection	NPC	NPC	NPC		
	ASI subsector codes	assignment	1986/87	1986/87	1986/87		
		<u> </u>					
Non-electrical machinery	350-359	М					
NAS sector 35: Non-electric machinery			1.60	1.60	1.60		
Electr. Industrial Machinery	360	М					
Insulated wires & cables	361	Н					
Dry & Wet batteries	362	Н					
Elect. apparatus & appl.	363	Н					
Radio & TV	364	Н					
Computers etc.	366	Н					
Other elect/electronic products	365,367,369	Н					
NAS sector 36: Electric machinery			1.83	1.83	1.83		
Ship building/repairing	370	Н					
Railwavs equipment	371-373	М					
Motor vehicles & parts /9	374	М					
Motorcvcles. scooters&parts	375	М					
Bicycles, rickshaw&parts	376	М					
Aircraft & parts	377	Н					
Other transport equipment	378-379	?					
NAS sector 37: Transport equipment			1.70	1.70	1.70		
Medical, Surgical Equip.	380	Н					
Photographic & Optical eqp.	381	Н					
Watches & Clocks	382	Н					
Jewellery#	383	L					
Minting of Coins	384	?					
Sporting Goods#	385	М					
Musical Instruments# /10	386	L					
NAS sector 38: Other manufacturing			1.80	1.21	1.40		
Weighted average all tradeable NAS sectors			1.58	1.37	1.50		
Notes. L (low)=<30%; M (medium) =>30%<70%; H	(high) =>70%. NPC=Nominal	Protection Coeffi	cient	•			
In estimating the average NPC for NAS sector 20-2	1, rice milling was excluded from	om ASI sub-sect	or 204, sugar pro	oduction (ASI su	bsectors		
206 & 207) was omitted, and ASI subsector 215 (production of ice) was omitted. See text for explanations.							
NAS sectors 39 (repair of capital goods) and 97 (other repairs) were omitted from the weighted average NPC estimate for all the sectors as							
they were judged to be principally non-tradeables.							
# Indicates the ASI subsectors for which protection rates were used to estimate average protection for unregistered firms in NAS sectors 28.							
30, 33 and 38. All the listed ASI subsectors were used to estimate the protection rates for registed firms' production in these sectors. Other							
notes: 1. Nominal protection for synthetic garments was high, but effective protection low (high domestic prices for principal inputssynthetic							
varns & fabrics) 2. Mainly leather tanning and leather	er footware 3. Petroleum refine	ries and petroleu	m products 4. C	oal tar etc 5. Or	ganic and		
inorganic 6 Includes mini-cement plants for which r	protection was higher than larg	er scale clinker/	cement plants 7	Included "mini"	steel industry		
for which protection was higher than for integrated	steel mills 8 Principally alumir	ium copper and	zinc 9 Average	dominated by t	rucks and		
buses Protection for cars was higher 10 Mainly traditional instruments							

As a base for the time series estimates of output nominal protection, the output nominal protecttion assignments of the 59 industries was then consolidated into eighteen 2-digit manufacturing sectors as published annually in the national accounts statistics (NAS) – see Table A1. In order to aggregate the ASI subsectors, specific numerical values of the protection ranges were needed. The NPCs used were:

	Nominal protection coefficient (NPC)				
3-digit ASI	Basic rule	Modified rule			
assignment					
L	1.15	1.15			
М	1.50	1.30			
Н	2.00	1.70			

The modified lower NPC coefficients were used when the likely NPC of "medium" protection sectors was considered to be near the bottom of the 30 percent to 50 percent range, and when the likely NPC of "high" protection sectors was considered to be somewhere in the middle of the 50 percent to 100 percent range. It was not considered likely that any of the "low" protection ASI sectors would have output protection rates below 15 percent. This was true even of apparently competitive sectors with substantial exports, as domestic prices were generally higher than export prices, due to export subsidies which were

not available for domestic sales, and to special export facilitation schemes which exempted export production from Customs duties on their imported inputs, but which were not available for production sold domestically.<sup>44</sup>

The weighted average output NPC of each 2-digit sector is the sum of the value of the outputs at domestic prices of the 3-digit subsectors which it includes, divided by the sum of the output of the 3-digit subsectors valued at international reference prices, where the latter is estimated by dividing the value of domestic output by its NPC i.e.

NPCs = 
$$\sum_{i} O^{i}_{ss} / \sum_{i} (O^{i}_{ss} / NPC^{i})$$

where NPC<sub>s</sub> is the weighted average NPC of the 2-digit sector,  $O_{ss}^{i}$  is the output value of the ith 3-digit subsector at domestic prices, and NPC<sup>i</sup> is the estimated NPC of the ith 3-digit subsector.

As the object is to measure protection to tradeable manufactured products, NAS manufacturing sectors 39 (repairs of capital goods) and 97 (other repair services) were omitted from the estimates. Some of the 3-digit ASI subsectors are also non-tradedables, but except for ice making (omitted from NAS sector 20–21) no attempt was made to omit them as they were too small to make much of a difference to the sectoral NPC estimates<sup>45</sup>.

The ASI data base only covers larger firms registered under the Factories Act, and so the NPC estimates for the base year (1986/87) were estimated for the 18 registered sectors for which value added and value of production is provided in the annual NAS volumes. However NAS also provides value added (but not output) estimates of the same 18 sectors for smaller scale "unregistered" producers, and also aggregates both sets to provide estimates of total manufacturing value added of both registered and unregistered producers. NAS aggregates the 20 sectoral value added statistics to provide estimates of manufacturing GDP for the whole economy: these estimates are a bit higher than the total of the 18 tradeable sectors considered in this study, which excludes the two non-tradeable repair sectors<sup>46</sup>.

Although the price comparison field surveys mainly involved interviews at, and questionnaires completed by larger manufacturing firms, in the process and in secondary material quite a lot of information was collected about the production structure and pricing of smaller scale "informal" manufacturing firms. For most sectors this suggested that the best approximations of implicit nominal protection rates for the production of informal non-registered firms were about the same as the protection rates of the larger formal "registered" firms. For example, after allowing for quality differences, it seemed

<sup>&</sup>lt;sup>44</sup> This was confirmed in many interviews at exporting firms which said they charged higher prices for their domestically sold products since for these they had to buy their inputs in the domestic market, and because there were no output subsidies. At the time, for export production firms could either import their inputs duty free under various special schemes (especially "advance licences") or have import duties refunded under a number of duty drawback schemes. The principal export subsidiy was "Cash Compensatory Support" (CCS) but there were also other export subsidies, including preferential access to, and interest rates on, working capital. As noted in the text, practically all imports which otherwise might have competed with Indian producers in the domestic market were either explicitly banned or in practice banned by the import licensing system.

<sup>&</sup>lt;sup>45</sup> An alternative approach would have been to assume zero protection rates for non-tradeable subsectors.

<sup>&</sup>lt;sup>46</sup> We are grateful to Jatinder Bedi for sending us useful detailed comments on our use of the NAS data. According to his research (e.g. in Bedi and Banderjee (2007))the value-added estimates for the unorganized subsectors as published in NAS are too high, owing to excess allowance by the CSO for production understatement motivated by tax avoidance. According to detailed work he has done on the textile and garment and on the processed fruit and vegetable sectors, NSSO (National Sample Survey Organisation) production estimates are more reliable. He also comments that for the organized sector it would be better to work directly with the detailed annual ASI statistics than with the summarized version of this data that is published in the NAS. However, he recognizes that to do this would be a massive task even for a fairly short period, let alone the long period covered in this paper. For example, the detailed NSSO estimates for the unorganized sectors only appear at five year intervals. In view of these difficulties we are encouraged by his assessment that the data problems to which he refers have probably not greatly compromised our results. It should also be noted here that to our knowledge there are no studies of the reliability or otherwise of the NAS subsectoral deflators. To improve the accuracy of our long term NPC estimates, further work on this would probably be more important than refining the subsectoral production and value added numbers.

plausible that the prices of power loom<sup>47</sup> fabrics relative to world prices, would be about the same as the prices of fabrics produced by larger textile firms relative to world prices of these fabrics. Accordingly, for 14 of the 18 NAS sectors, the NPCs in the informal "unregistered" segments of these industries were assumed to be the same as the NPCs in the formal "registered" segments. However separate lower average NPCs were estimated for the production of unregistered firms in four sectors, as there was information that their product mixes differed considerably from the product mixes of larger firms, and that a higher proportion of their output consisted of more labour intensive products with lower prices relative to the prices of similar products in world markets. These sectors were 28 (paper and printing), 30 (rubber, petroleum etc), 33 (basic metal industries), and 38 (other manufacturing). The ASI subsectors used in estimating the average NPC for the unregistered segments of these NAS industries are indicated in Table A1 by #.

In estimating the average NPC for NAS sector 20-21 (food products) rice milling was excluded from ASI subsector 204, gur, khandsari and sugar production (ASI subsectors 206 & 207) were omitted, and as already noted ice production (ASI subsector 215) was omitted. The share of rice in total grain mill production was assumed to be the same as its share by weight (49 percent) in total 1986/87 grain production obtained from agricultural production statistics. The reason for excluding rice, gur, khandsari and sugar from the NPC estimate (and also from the value of production) of the food products sector is that it was considered more appropriate to treat them as belonging to the tradeable agricultural sector, rather than to the tradeable manufacturing sector, since it as only after sugar cane and paddy are milled that they become tradeable. However, the milling of wheat and other flours was kept in the manufacturing sector, since wheat and other grains are internationally tradeable before being milled. As a result of these adjustments, the output value in domestic prices of the NAS food products sector was reduced by 32 percent and value added was reduced by 35 percent. The same percentage adjustments were made to this sector over the entire period covered by the time series (see discussion below). In most years the effect of these omissions was probably to increase the estimated food products sector average NPC, mainly because of negative or low protection rates for rice milling, which is a very large activity. However during periods when world sugar prices were low, this effect may have been offset by the omission of high implicit protection rates for sugar, gur and khandsari.

For the unregistered segments of NAS sectors 23 (cotton textiles), 24 (wool, silk etc), 25 (jute textiles) and 26 (textile products), until 1994 the NAS statistics only provide estimates of the total combined value added (VA) of the four sectors. The individual shares in 1974/75 were estimated from the chapter by Sundaram and Tendulkar in a book on small scale industries edited by Suri (1988). This provided the shares of sectors 23 and 26 directly, and the shares of the sectors 24 and 25 were estimated from data in this study on VA per worker and employment shares. The resulting estimated shares of total value added of registered and the unregistered segments were:

		% share in t	otal combined	% share of total VA of four		
		VA by secto	or	sectors		
		Registered Unregistered		Registered	Unregistered	
23	Cotton textiles	69	31	68	45	
24	Wool, silk etc	73	27	15	9	
25	Jute textiles	97	3	13	1	
26	Textile products	12	88	4	45	
23–26	Four subsectors	48	52	100	100	

From this it can be seen that registered larger and small unregistered firms each accounted for about half the total value added in the combined value added of the four sectors. The registered segments were

<sup>&</sup>lt;sup>47</sup> Textile fabrics produced by very large numbers of small unregistered "power loom" producers ("power loom" to distinguish them from handloom weavers) compete directly in the domestic market and in export markets with fabrics produced by larger "composite" (i.e. integrated spinning, weaving and sometimes finishing) mills and by the mid-1980s had captured most of the domestic fabric markets, which they were still dominating during the first half of the 2000s.

dominant in cotton textiles, wool & silk textiles (which includes synthetics<sup>48</sup>), and jute textiles, while small scale unregistered firms accounted for 88 percent of the "textile products" sector, of which the largest component was garment production. The predominant share of registered "formal sector" firms in textile production was partly due to their decisive advantage over small scale firms in spinning, and also because this was an early stage of the rapid growth of the small scale "power loom" operators in fabric production, and the corresponding decline and loss of market share of larger "formal" sector firms in these markets that continued into the mid-2000s.

In the absence of more recent information, the 1974/75 shares of unregistered segment VA shown in the far right column above were initially assumed to apply over the whole period, including the base year 1986/87. However, the NAS accounts filled in these blanks starting in 1993/94, so in the updated version of the time series estimated for this paper, the VA values for the missing years 1970/71 to 1992 /93 filled in using the trend rate of change in each sector's share between the estimated values in 1974/75 and the NAS values in 1993/94.

The weighted average protection rates in 1987 for registered manufacturing, unregistered manufacturing, and total manufacturing are shown in Table A1. These are averages weighted by the output value of the 18 subsectors at world reference prices i.e. after deflating the Rupee value of each subsector's output at domestic prices by its NPC. For registered manufacturing this was straightforward since output values are reported in the NAS statistics. However, there are no NAS statistics for non-registered output, only value added, so unregistered output in each sector was estimated by assuming the same output to VA ratio as in the registered segment of the sector. The weighted average NPC for total manufacturing then takes account of both the registered and unregistered sectors, and was calculated as the total value of production of both segments at domestic prices, divided by the total value of production of both segments at world reference prices.

In order to use the 1987 NPC estimates to obtain approximations of how NPCs have changed over time, the variables needed are indices of changes in Indian prices, indices of changes in world prices, and a time series for the exchange rate. On one side, starting with the Indian domestic price of commodity X in 1987, a domestic price index for X can be used to indicate its new nominal Rupee level in say 1995. On the other side (using world prices expressed in \$US and the Rupee/\$US exchange rate) applying a USD international price index for X to its Rupee border price in 1987 will give its nominal Rupee border price in year t (say in 1995), provided there were no change in the Rupee/USD exchange rate. However, if the exchange rate has changed during the period, the 1995 Rupee price needs to be adjusted by the change in the exchange rate i.e. by the ratio of the 1995 exchange rate to the 1987 exchange rate. Algebraically:

NPC<sub>t</sub> = NPC\* (Pind<sub>t</sub>/Pind\*)(Pus\*/Pus<sub>t</sub>)( $e_* / e_t$ ),

where the starred values are the values in 1987.

This procedure was applied to the 18 NAS tradeable manufacturing subsectors to obtain an NPC time series for each of them, and weighted average NPCs were then calculated in each year for registered, unregistered and total manufacturing. To do this the basic data sets needed were the sectoral inflation rates in India, indices of world prices of the products included in the Indian sectors, and trends in the Rupee/USD exchange rate.

For the domestic inflation rates, the implicit sectoral output deflators were obtained by dividing the value of output at current prices by the value of output at constant prices. Data limitations necessitated some adjustments.<sup>49</sup> First, for the registered sector, output at constant prices was not available until

<sup>&</sup>lt;sup>48</sup> In early Indian discussions and statistics synthetic textiles such as polyester and nylon were often lumped together with silk since they seemed to have some similar physical properties. Despite this there are three separate subsectors for synthetic textiles in the early ASI (1970) product classification. Very high protection of these synthetic textile subsectors during the mid-1980s is the principal reason for the high average NPC (1.79) attributed to NAS sector 24 (see Table A.1). Until the late 1990s synthetic textiles were also subject to very high indirect taxes, which were aimed at retarding consumption growth and protecting cotton textiles.

<sup>&</sup>lt;sup>49</sup> In addition to the adjustments described below, the value of registered segment production (VOP) at current prices in 1972/73 was not available in NAS. These were estimated for the 18 subsectors by assuming the same VOP/VA ratios as reported in 1971/72.

1980/81 and so for the years before this the implicit deflators were calculated from the value added figures. An examination of CSO sources and methods revealed that in later years the output deflators were the same as the value added deflators, so it turned out that the different approach in the earlier period was consistent with the method used in the later period. Second, the value added deflators were used for the unregistered sector, for which output values were not provided in any case.

For trends in international prices, US Bureau of Labor Statistics (BLS) publications were used. These provide indices of wholesale prices for large numbers of highly disaggregated manufactured products in the US. US BLS indices were chosen for products or product groups which resembled as closely as possible the products found in the Indian NAS sectors. The average NAS sectoral world price indices were then calculated with weights approximating the shares of these products in total (registered plus unregistered) Indian sectoral production<sup>50</sup>. The base year for the BLS indices changed several times over the period (1971–2005): all these series were rebased on 1980/81, as were the NAS implicit price deflators, which were also published with a number of different bases during these years.

As noted previously, the original 1986/87 NPC estimates allowed for Indian port and domestic transport and handling costs in calculating the world reference prices with which the Indian domestic prices were compared. In projecting the NPC estimates forward and back no adjustments were made for the effects of domestic inflation on these non-traded costs and margins, the implicit assumption being that they change in the same proportion as the border prices, which in turn are a function of world prices and the Rupee/USD exchange rate. Correcting for this would refine the estimates, but would involve substantial extra work for problematic gains in estimation accuracy.

It was assumed that the BLS indices of US ex-factory or wholesale domestic prices are reasonably reliable indicators of price fluctuations and trends of the same or similar products in international trade, even though the absolute levels of US domestic prices were not necessarily the same as international prices (many were somewhat higher). This was broadly confirmed by cross checks of some of the BLS indices with world price indices when they were available. If world price indices of products included in this database are available and seem to be more reliable indicators of fluctuations and trends in prices at which Indian firms could import or export, they could be substituted for the BLS indices.

The 18 NAS manufacturing subsectors used for the time series estimates remained the same over the entire period 1971–2004. However in 2005 the CSO revised the subsector definitions quite drastically, and it would be a major task to make the new definitions consistent with the previous definitions. Instead of attempting this, the domestic deflators for 2005 and 2006 were estimated using linear projections of the subsectoral values (old definition) between 1990 and 2004. At the aggregate level (for total manufacturing) the resulting NPCs for 2005 and 2006 were cross checked using a subset of manufactured products in the WPI index. This gave slightly higher average prices and NPCs in 2005 and 2006 than the averages using projected subsector values, still in the same zero-protection region i.e. about zero protection rather than minus 8 percent (2005) and minus 6 percent for the basic "low" estimate case (Table 1).

The change in the NAS definitions from 2005 underlines the obvious point that the longer the time series extends from the 1987 base year the more problematic are the NPC projections, owing to changes in industrial structure. If in future there is research on this topic, rather than extending the time series, it would be more interesting and useful to undertake a new protection study on the lines of the 1986–88 research, and project that back into the 1990s using the new NAS definitions. Even though India's current manufacturing structure is now far more diversified and complex than it was in the mid-1980s, the task would be much easier owing to the removal of nearly all manufacturing QRs and the likelihood that domestic prices and the NPCs of many manufactured products can be simply inferred from low binding tariffs, or from exports which in many industries now account for substantial shares of total production.

<sup>&</sup>lt;sup>50</sup> No attempt was made to estimate separate world price indices with different weights for the registered and unregistered segments of the Indian NAS sectors, even though the Indian NAS-based deflators differed as between these two segments. This would be one of many other possible refinements for further research on this topic, especially of sectors such as the four in these estimates where unregistered firms were judged to have substantially different product structures from the production structures of registered firms.

#### References

- Bedi, Jatinder S. and Banerjee P.K. (2007). "Discrepancies and Validation of Indian Manufacturing Data". *Economic and Political Weekly*, March 10.
- Bhagwati, J.N. and Desai, P.(1970), *India: Planning for Industrialisation and Trade Policies since 1951*. Delhi, Oxford University Press.
- Bhagwati, J.N. and Srinivasan, T.N. (1975), Foreign Trade Regimes and Economic Development: India. New York, National Bureau of Economic Research.
- Government of India (2006 and earlier years), *Economic Survey*. Annual, Various issues, Ministry of Finance, New Delhi, at <a href="http://indiabudget.nic.in">http://indiabudget.nic.in</a>
- Government of India, Central Statistical Organisation, (various years) National Accounts Statistics
- Government of India, Central Statistical Organisation (1989 and other years), National Accounts Statistics: Sources and Methods
- Government of India, Ministry of Commerce and Industry, Director General of Commerceial Intelligence & Statistics (various years), *Statistics of the Customs and Excise Revenue* Collections of the Indian Union.
- Government of India, Central Statistical Organisation (various years), Annual Survey of Industries: Summary Results for the Factory Sector
- Government of India, Ministry of Commerce and Industry, Directorate General of Foreign Trade, Export-Import Data Bank. At <u>http://dgft.delhi.nic.in</u>
- Government of India, (various years). Receipts Budget.
- Goyal, A. (2007–08 and earlier years), *BIG's Easy Reference Customs Tariff*, New Delhi: Academy of Business Studies.
- Gulati, A., J. Hanson and G. Pursell (1990), *Effective Incentives in India's Agriculture: Cotton, Groundnuts, Wheat and Rice.* World Bank, Policy Planning and Research Working Paper WPS 332, Washington DC.
- Gulati, Ashok and Kelley, Tim (1999). *Trade Liberalization and Indian Agriculture*. Oxford University Press, New Delhi.
- Joshi, V.and I.M.D. Little (1994), India: Macroeconomics and Political Economy 1964–1991, New Delhi: Oxford University Press.
- Nayyar, D. (1976), India's Export and Export Policies in the 1960s. Cambridge University Press.
- Panchamukhi, V.R. (1979), Trade Policies in India: a Quantitative Analysis. New Delhi, Concept Publishing.
- Pursell, G. and A. Gulati (1995), "Agriculture and the Economic Reforms", Chapter 10 of India: The Future of Economic Reform, R. Cassen and V. Joshi (eds), New Delhi: Oxford University Press.
- Pursell, G. (1992), "Trade Policies in India", Chapter 21 of D. Salvatore (ed.), National Trade Policies. Greenwood Press, Westport Ct USA.
- Pursell, G. (2007), Smuggling and the Economic Welfare Consequences of an FTA: a Case Study of India– Bangladesh Trade in Sugar. Australia South Asia Research Centre Working Paper 2007/5. June. Available at <u>asarc@anu.edu.au</u>.
- Pursell, Garry, Ashok Gulati and Kanupriya Gupta (2007). *Distortions to Agricultural Incentives in India*. World Bank, Agricultural Distortions Project Working Paper (in preparation)

Reserve Bank of India (various years), Handbook of Statistics on Indian Economy. At www.rbi.org.in

- Srinivasan, T.N. and Suresh Tendulkar (2003). *Reintegrating India with the World Economy*. Peterson Institute for International Economics. March.
- Tendulkar, S. and Sundaram K., (1988) "An Approximation to the Size Structure of Indian Manufacturing Industry". Ch 4, pp 72–92 in K.B. Suri, *Small Scale Enterprises in Industrial Development*, Sage Publications, New Delhi (1988).
- US Department of Labor, Bureau of Labor Statistics. *Producer Price Indices:Manfacturing*. (Annual Supplements). Available at <a href="http://stats.bls.gov">http://stats.bls.gov</a>
- Wolf, M. (1982). India's Exports. Oxford University Press for the World Bank.
- World Bank (1989), *India: An Industializing Economy in Transition*. A World Bank Country Study. Washington DC, December.
- World Bank (2004), Trade Policies in South Asia: An Overview, Report No. 29949, in three volumes, Washington DC, September.
- World Bank (2006), *Studies on India–Bangladesh Trade, Trade Policies and Potential FTA*, Report No, 37863– BD, in two volumes, Washington DC, October.
- World Trade Organization (2007). Trade Policy Review. Report by the Secretariat. India. WT/TPR/S/182/Rev.1. 24 July 2007.