

8

Trade and Industrial Performance Since the WTO Reforms: What Indian Evidences Suggest?

ALOKESH BARUA, DEBASHIS CHAKRABORTY AND PAVEL CHAKRABORTY

INTRODUCTION

The Uruguay Round (UR) of multilateral trade negotiations had led to a substantial improvement in market access for manufacturing in global trade mainly due to the reductions in tariffs barriers. The world trade regime as a consequence has become much freer than ever before. By ensuring the most favoured nation (MFN) treatment, the WTO has created a non-discriminatory trading regime. As a consequence of such increase in market access, Indian manufacturing sector may presumably have succeeded in exploiting the advantages of greater degree of openness for increasing its manufacturing exports. This chapter therefore will attempt to evaluate the kinds of quantitative and qualitative changes that may have taken place in the direction and the patterns of trade and resource allocation in Indian manufacturing. The chapter will provide a brief overview of the post-UR market access situations in both the developed and the developing economies; will discuss India's role in the WTO policy negotiations for manufacturing market access and also how India had responded to its commitments in the implementation of the reform measures; will try to provide some quantitative estimates of the effects of increased market access for Indian manufacturing under the assumptions of competitive market framework and constant returns to scale; will try to incorporate monopolistic market conditions and increasing returns to scale to find out if the conclusions based on competition differ greatly in presence of market imperfections and increasing returns to scale. We will end the chapter with a summary of our main findings.

MARKET ACCESS IN MANUFACTURING: AN OVERVIEW

The issue of the reduction of tariffs on industrial products assumed the centrality of negotiations on trade liberalisation since the GATT days, understandably due to fact that manufacturing products account for about 8 per cent of the global merchandise trade. A comparison of the share of exports of manufactures in total world exports in 1990 and 2000 reveals that the manufacturing share far exceeded the overall share in exports for the Western Europe and Asia and just exceeded in case of the North America. What this implies

is that the other regions such as the Latin America, Central/Eastern Europe, Middle East and Africa have shares in manufactures much lower than their shares in total exports to the world (Albuero 2003, 57). Interestingly, the shares of manufacturing in world exports have also been increasing for the developing countries and this must be due to increased market access in manufacturing. The developed countries have reduced their tariffs on imports of industrial products by an average of 40 per cent, i.e. from 6.3 per cent to 3.8 per cent following the UR negotiations. But the developing countries on the other hand reduced their tariffs on imports of industrial products by an average of 20 per cent, that is, from 15.3 per cent to 12.3 per cent (UNCTAD 1996). Thus, while percentage reduction in tariff is smaller in developing countries than their industrial counterparts, the absolute reduction in their tariff rate is of course much greater. As a result, the post-UR average tariff levels in the developing countries are much above the developed countries' tariffs levels. Table 8.1 gives some idea about the changing tariff structure of several developed and developing countries including India. It is seen that the average tariff rate has come down significantly for most of the countries.¹ However, WTO (2001) has clearly noted that *the level of realised market access is significantly lower than the predicted one* and there are areas where barriers quite significantly affect trade. For instance, although the average tariff rate has come down, 'numerous *tariff peaks*, mainly in the textiles and clothing and in the leather sectors' (WTO 2001, 2), affected the trade volume considerably. In addition, *tariff escalation* is turning out to be a major hindrance to trade in recent years. The WTO study (2001) notes:

For certain products, such as textiles, clothing, leather, leather products and metals, most developed countries' tariffs increase with the level of processing. Many developing countries in Asia and Africa also exhibit escalating tariffs for these products. Developing countries argue that tariff escalation biases their production structure towards less refined products and thus represents a major impediment to their industrialisation (WTO 2001, 3).

TABLE 8.1 Tariff Reforms of Select Countries during Nineties²

Year	All Products					Primary products			Manufactured Products		
	A	B	C	D	E	A	B	C	A	B	C
<i>Australia</i>											
1991	13.1	14.3	9.1	30.3	1.4	3.2	–	1.6	14.3	–	10.3
1993	9.8	11.9	7.7	–	–	2.5	–	1.3	11.7	–	9.7
1998	5.3	7.4	3.7	–	–	1.2	–	0.7	6.4	–	4.4
2004	5.1	–	3.8	5.9	2.9	1.4	–	0.7	5.6	–	4.4
<i>Canada</i>											
1989	8.6	7.4	6.0	14.6	3.4	5.1	5.9	2.5	9.9	7.1	6.7
1995	10.1	24.2	7.2	–	–	14.2	49.3	5.5	8.9	6.6	7.7
1998	7.5	26.5	3.8	–	–	16.1	54.9	6.7	5.1	6.1	3.2
2003	3.9	–	0.9	6.5	3.6	1.9	–	0.4	4.2	–	1.0
<i>China</i>											
1992	41.0	30.6	32.2	77.6	0.0	35.4	–	13.9	42.3	–	36.5
1994	36.3	27.9	35.5	–	–	32.2	24.3	19.6	37.6	28.8	40.6
1996	23.6	17.4	22.6	–	–	25.4	22.1	20.0	23.1	15.8	23.2
2004	9.8	–	6.0	16.0	0.0	10.0	–	5.6	9.7	–	6.0

(Contd)

(Table 8.1 Contd)

Year	All Products					Primary products			Manufactured Products		
	A	B	C	D	E	A	B	C	A	B	C
<i>European Union</i>											
1989	4.1	5.9	3.8	3.9	18.2	8.7	-	2.7	2.7	-	4.4
1994	7.7	6.3	6.6	-	-	10.3	-	4.9	6.9	-	7.0
1998	6.0	5.6	3.5	-	-	9.4	-	3.4	4.8	-	3.5
2003	1.4	-	1.3	1.9	10.6	2.2	-	0.9	1.2	-	1.4
<i>India</i>											
1990	79.0	43.6	49.6	97.0	0.9	69.1	-	25.4	80.2	-	69.9
1997	30.0	14.0	27.7	-	-	25.7	22.6	22.6	31.3	9.8	29.5
2004	28.3	-	28.0	92.4	0.0	30.0	-	36.9	27.9	-	25.3
<i>Japan</i>											
1989	5.6	7.9	3.0	9.1	3.3	8.3	-	3.3	4.7	-	2.7
1998	5.7	7.7	2.0	-	-	8.9	-	4.5	4.5	-	1.5
2004	2.9	-	2.4	8.1	2.8	5.3	-	3.9	2.4	-	1.6
<i>United States</i>											
1989	5.6	6.8	3.8	8.0	12.7	3.7	-	2.0	6.0	-	4.1
1995	5.9	7.0	4.1	-	-	5.5	-	2.7	6.0	-	4.4
1998	5.2	11.8	2.8	-	-	6.4	-	3.2	4.9	-	2.7
2004	3.2	-	1.8	4.0	6.8	2.7	-	1.1	3.3	-	1.9
<i>Brazil</i>											
1989	42.2	17.2	31.9	92.2	0.5	37.9	-	18.8	42.5	-	37.9
1997	11.9	7.7	14.6	-	-	8.6	5.7	7.1	12.6	7.8	16.4
2004	13.2	-	8.0	38.0	0.0	9.1	-	2.0	13.6	-	10.2
<i>South Korea</i>											
1989	14.8	5.3	10.5	11.8	12.5	14.6	-	5.5	14.9	-	13.5
1996	11.1	26.1	9.5	-	-	21.0	47.2	17.0	8.2	13.5	7.8
2002	9.5	-	10.0	5.3	0.5	20.9	-	19.0	7.8	-	5.0
<i>Indonesia</i>											
1989	21.9	19.7	13.0	50.3	0.3	19.9	-	5.8	22.3	-	15.6
1996	13.0	16.7	13.8	-	-	12.3	19.6	9.3	13.2	15.7	14.9
2003	6.4	-	5.2	3.5	0.2	8.0	-	3.1	6.1	-	5.8
<i>Malaysia</i>											
1988	17.0	15.1	9.4	46.1	7.2	15.2	-	4.6	17.4	-	10.5
1993	14.3	14.1	11.1	-	-	10.9	12.7	6.0	15.3	14.3	12.6
2003	7.3	-	4.2	21.1	1.0	4.5	-	2.1	7.8	-	4.6
<i>Philippines</i>											
1989	28.0	14.2	22.4	77.2	0.1	29.6	-	18.5	27.7	-	23.6
1995	20.0	11.0	18.4	-	-	21.6	12.8	16.8	19.5	10.4	18.9
2003	4.5	-	2.6	1.6	0.0	5.7	-	5.0	4.2	-	2.0

Source: *World Development Indicators*, various Issues.

Because of such discrepancies between the potential and the actual market access conditions in the developed countries' markets for the industrial products of the developing countries, the developing countries often expressed their strong discontentment with the

developed world. The major source of unhappiness had of course been with the very slow pace of implementation of important agreement such as the Agreement on Textiles and Clothing (ATC) (see Chapter 10 for details). Since the ATC came to an end by 31 December 2004, the current concern was with the remaining tariffs and non-tariff barriers (NTBs) maintained by two major trading entities, the EU and the US, which are quite high.³ The abuse of the anti-dumping measures as instrument of protection in the developed countries had also been a major point of concern (Aggrawal 2002; Chakraborty 2007).

Although no major tussle was experienced during Singapore (1996) and Geneva (1998) ministerial meetings of the WTO, discontents became perceptible from the Seattle Ministerial Conference (1999) onwards, where the possibility of including social clauses under WTO ambit was discussed (See Chapter 5). The proposal had to be dropped on the face of huge protest from various quarters. During the Doha Ministerial (2001), the launching of a new round was not accepted by the developing countries on the ground that the market access issues originating from the Uruguay Round commitments need to be ensured first (see Chapter 6 and 7 for details).⁴ In Cancun Ministerial (2003), the developed-developing gap became too wide over the question of loss of market access due to agricultural subsidisation in the EU and the US, and even the July 2004 meeting left so many unresolved areas. Moreover, the timelines set for the conclusion of the negotiations at the Hong Kong Ministerial (2005) has been missed, as the WTO members failed to agree on the reform modalities. In short, the debates and disputes over market access issues are far from being over.

THE WTO AND INDIA

India at the WTO

India had all along been actively participating in the multilateral negotiations for formalising an efficient and rule-based world trade regime. There were indeed differences within the domestic economy marked by acrimonious debates on the issue of whether India should join the WTO or not. At the end of course the Indian parliament has ratified the proposal of India signing the WTO agreement. India did not succumb to the global trend towards formations of RTAs and instead remained loyal to multilateralism for the most part of the last decade. So India did not consider obtaining membership of regional blocs as an export expansionary strategy.⁵ However, this outlook changed from 2003 onwards and currently India is part of a number of overlapping trade blocs, mostly in Asia (Nag and Chakraborty, 2006). From an initial position of hesitation as seen in the first WTO Ministerial Conference held in Singapore (1996), India has succeeded in achieving a position of leadership among the developing countries bloc in the Cancun Ministerial (2003). Thus, while India remained inactive by not majorly protesting against the inclusion of four new issues, namely, trade and investment, competition policy, transparency in government procurement, and trade facilitation, in the Singapore Ministerial (1996), it did play a somewhat active role in the Geneva Ministerial (1998) and became a part of the Global E-commerce Agreement. Subsequently, in response to the non-realisation of the promised market access under the UR and also owing to a number of challenges it had faced at the WTO Dispute Settlement Body, India was forced to adopt a proactive approach in Seattle (1999) by raising its voice against the incorporation of social aspects under the WTO ambit. In the same way, in Doha (2001), when developed countries were willing to begin discussion for launching a

new round, India with a handful of developing country opposed the move and demanded realisation of market access as promised under the UR. The concern over TRIPS and public health also played a major role in this regard.⁶ Finally, in Cancun (2003), the G-20 group led by Brazil, China, India and South Africa laid an alternate proposal against the EU-US proposal for removing agricultural subsidies in their domestic market. Also during July 2004, the commerce ministers from Australia, Brazil, the EU, India and the US discussed in a meeting, and reached an agreement; a much-needed step to initiate fresh talks. In the G-20 ministers meet in New Delhi (18–19 March 2005), the ministerial declaration further decided to keep the pressure on developed countries for increased market access, the line which was eventually followed at the Hong Kong Ministerial (2005):

... the tariff reduction formula must contain: (i) progressivity—deeper cuts to higher bound tariffs; (ii) proportionality—developing countries making lesser reduction commitments than developed countries and neutrality in respect of tariff structures; and (iii) flexibility—to take account of the sensitive nature of some products without undermining the overall objective of the reduction formula and ensuring substantial improvement in market access for all products.⁷

WTO-induced Reform in India

India had initiated a series of reforms including tariff reforms even before 1995. Historically it had adopted highly protective tariff policies for encouraging the domestic industries as a strategy of industrialisation. This however led to a gradual shrinkage of India's share in the world market since 1950s.⁸ Apart from the protective tariff policies, India also had adopted various restrictive entry policies such as the reservation policies to protect the small-scale sector and the industrial licensing policies to restrict free entry of firms. These two sets of entry restriction policies had drastically reduced competition in the internal domestic market. In other words, the entry and exit decisions of the firms were influenced not by the market forces but by the whims of the bureaucratic decisions.⁹ Consequently, a number of large business houses emerged in capital-intensive sectors. Although the Monopolies and Restrictive Trade Practices (MRTP) Commission was operational in this period, the domestic competition was heavily influenced by government policies in particular markets. Similarly, the strict regulations on foreign currency resulted in poor FDI inflow as compared to other Asian economies. Coupled with the lack of competition due to import restrictions, the inefficiency in manufacturing sector and the consequent low productivity had been a major problem for India. Concerned with the twin problems of slow growth and BOP constraint, India was compelled perhaps by the forces of circumstances to initiate certain reform measures both at the internal and external fronts. On the internal front the new industrial policy of 1991, removing the earlier licensing system and reservation of industries, had paved the way for adopting a liberalised economic system and as a result presently the government retains exclusive monopoly only for railways. The banking sector is gradually being opened up for private investors. In addition, replacement of FERA by new FEMA, disinvestment in several public sector enterprises, reforms in direct and indirect taxes, building up infrastructure through liberalised policy framework, etc. has increased the reliability of the reform policies.¹⁰ De-reservation of small-scale sectors over the last couple of years is considered to be a major step for promoting efficiency.¹¹ Finally, the government opened up a number of key sectors to attract FDI, and this result in an increase in the number of foreign players in the market.¹²

On the external front, more stress was laid on formulating an export-led growth strategy. Indian rupee was devalued in 1991, and the control over it was gradually loosened. The current account was made fully convertible in August 1994. Although discussions were going on for capital account convertibility, the South East Asian crisis in 1997 and the resulting capital flight caused India to adopt a cautious approach.¹³ However, external reform was effectively locked in because of India's participation in WTO, as it was a signatory member of GATT since 1947 and became part of the WTO commitments from 1995. The statement of the Prime Minister of India in March 2006 on consideration of full capital account convertibility of the rupee might perhaps be followed by certain concrete policies in this front.

Thus, at the beginning of the WTO, India had already liberalised the economy to a large extent which was further accentuated by the tariff commitments made under the multilateral body from 1995 onwards. For instance, India lowered its (un-weighted) applied tariff rate for the overall economy from 125 per cent in 1990–91 to 71 per cent in 1993–94, and further to 22.2 per cent in 2004–5. Similarly, the maximum tariff rate has declined from 355 per cent in 1990–91 to 45 per cent in 1997–98 and further to 30 per cent in 2004–5 (Chadha et al. 2003, 15–16; World Bank reports, various years). In the same way, imports of previously restricted items were liberalised¹⁴ and the coverage of tariff lines was gradually expanded, and India bounded around 73 per cent of its tariff lines compared to only 6 per cent bound tariff lines in the pre-UR period. The ceilings for industrial goods are generally at 40 per cent *ad valorem* for finished goods and 25 per cent on intermediates. The phased reduction to these bound levels would be achieved during the 10-year period beginning from 1995 onwards.

The relative openness of the Indian economy in the post-1995 period in comparison to the previous epoch becomes obvious from Table 8.2, which shows export plus import as a share of GDP has increased three-fold over a major part of the last two decades. The tariff reform in the post-WTO accession period has resulted in a massive decline in average as well as peak tariff rates.¹⁵ Buoyed with this advantage, the volume of import has increased at a higher rate as compared to export growth rate. Although the volume of trade balance is worsening over time, the increasing dependence on trade is a good sign.

TABLE 8.2 The Openness Measures for Indian Economy (Rs in Crore)

Year	Export (X)	Export Growth (percentage)	Import (M)	Import Growth (percentage)	Trade Balance	TB Growth (percentage)	GDP at Factor Cost	TB as a percentage of GDP	X+M as a percentage of GDP
1983–84	9771	11.00	15831	10.76	-6060	10.38	471191	-1.29	5.43
1984–85	11744	20.19	17134	8.23	-5390	-11.06	490027	-1.10	5.89
1985–86	10895	-7.23	19658	14.73	-8763	62.58	514059	-1.70	5.94
1986–87	12452	14.29	20096	2.23	-7644	-12.77	536337	-1.43	6.07
1987–88	15674	25.88	22244	10.69	-6570	-14.05	556874	-1.18	6.81
1988–89	20232	29.08	28235	26.93	-8003	21.81	615206	-1.30	7.88
1989–90	27658	36.70	35328	25.12	-7670	-4.16	656469	-1.17	9.59
1990–91	32553	17.70	43198	22.28	-10645	38.79	693051	-1.54	10.93
1991–92	44041	35.29	47851	10.77	-3810	-64.21	702067	-0.54	13.09
1992–93	53688	21.90	63375	32.44	-9687	154.25	738003	-1.31	15.86
1993–94	69751	29.92	73101	15.35	-3350	-65.42	781345	-0.43	18.28

(Contd)

(Table 8.2 Contd)

Year	Export (X)	Export Growth (percentage)	Import (M)	Import Growth (percentage)	Trade Balance	TB Growth (percentage)	GDP at Factor Cost	TB as a percentage of GDP	X+M as a percentage of GDP
1994-95	82674	18.53	89971	23.08	-7297	117.82	888031	-0.82	19.44
1995-96	106353	28.64	122678	36.35	-16325	123.72	899563	-1.81	25.46
1996-97	118817	11.72	138920	13.24	-20103	23.14	970083	-2.07	26.57
1997-98	130101	9.50	154176	10.98	-24075	19.76	1016266	-2.37	27.97
1998-99	139753	7.42	178332	15.67	-38579	60.25	1083047	-3.56	29.37
1999-2000	159561	14.17	215236	20.69	-55675	44.31	1148367	-4.85	32.64
2000-1	203571	27.58	230873	7.27	-27302	-50.96	1198664	-2.28	36.24
2001-2	209018	2.68	245200	6.21	-36182	32.53	1268175	-2.85	35.82
2002-3	255137	22.06	297206	21.21	-42069	16.27	1316270	-3.20	41.96
2003-4	293367	14.98	359108	20.83	-65741	56.27	1428667	-4.60	45.67
2004-5	375340	27.94	501065	39.53	-125725	91.24	1536058	-8.18	57.06
2005-6	456418	21.60	660409	31.80	-203991	62.25	1674177	-12.18	66.71

Source: Calculated from *Economic Survey*, Various Issues. P—Provisional Estimates, Q—Quick Estimates

Note: GDP Figures from 1999-2000 onwards have been calculated in 1993-94 prices

Disputes and Concern Areas

Increasing trade is associated with disputes on newer areas, where trade is created. India has been very much concerned with certain global streams of events since 1995. In particular, various trade-distorting policies of partner countries have led to huge market access loss for India.¹⁶ On the other hand, India's domestic policies have come under fire on various occasions, and questions have been raised on the WTO-compatibility of its various measures. In Table 8.3, a comparative analysis of the two Trade Policy Reviews on India undertaken in 1998 and 2002 is presented, which shows that despite the decline in the extent of WTO-inconsistency in Indian policies, concern areas still remain (e.g., contingency measures, entry restrictions, etc.). The concern is quite legitimate since Table 8.4 shows that as respondent India has lost most of the cases at WTO the forum, thereby implying the validity of the claims of the complainant countries.

As seen in Table 8.4, India has so far been involved in a total of 36 cases at the WTO dispute settlement body. An analysis of the time trend of cases against India reveals that its trade policy is increasingly becoming WTO-compatible, during June 1999-January 2003 not a single case was registered. However, recently India's anti-dumping policy is increasingly coming under fire.¹⁷ Second, while cases filed by India involves imposition of anti-dumping and other type of duties and WTO-incompatibility of import measures on textile products among other members, the cases filed against India centres on three broad issues, namely, import restrictions, patent regime and anti-dumping.¹⁸ Third, while India has won 7 cases out of 17 as a complainant, it has not won a single case as respondent and lost 5 cases out of 19.¹⁹ Finally, as third party, India had participated in disputes over TRIPS, textile products, primary products and allegations of dumping; i.e., the issues pertaining to its immediate interest. From the analysis in Tables 8.3 and 8.4, it appears that India may face a number of fresh disputes in coming years, as various countries have expressed

their open dissatisfaction over the pace of India's external reform and the level of market access realised so far.²⁰ On the other hand, as mentioned earlier, various non-tariff barriers imposed on Indian exports caused the realised market access for the country to shrink by a considerable amount, which potentially opens areas of future dispute.

TABLE 8.3 A Comparative Analysis: Country Review

<i>Trade Policy Review (1998)</i>	
<i>Policies Praised</i>	<i>Policies where Further Reform Advocated</i>
<ul style="list-style-type: none"> • Rapid reform in tariff rates over 1993–94 to 1997–98. • Overall economic reform measures. • Amendment in Copyright law in line with TRIPS. 	<ul style="list-style-type: none"> • Complex structure of tariff regime and tariff escalation. • Import restriction on consumer goods. • Restrictive import licenses and other procedural hassles on imports. • Presence of indirect subsidies, export subsidies and other incentives. • Unfinished compliance with TRIPS. • Reform in case of agricultural products. • Transparency in decision-making. • Reform in services.
<i>Trade Policy Review (2002)</i>	
<i>Policies Praised</i>	<i>Policies where Further Reform Advocated</i>
<ul style="list-style-type: none"> • Simplification of tariff structure. • Complete elimination of quantitative restrictions. • Reduction in export restrictions. • Review of FDI policy. • Move towards full conformity with TRIPS. • Significant reform in certain key service sectors e.g. telecommunication, financial services and to some extent in infrastructural services. 	<ul style="list-style-type: none"> • Increase in use of contingency measures on imports. • Wide range of price and distribution controls in agriculture. • Existence of certain commodity specific entry restrictions.

Source: Chaisse and Chakraborty (2004)

TABLE 8.4 Cases at DSB involving India (updated upto 21st March, 2007)

<i>Cases involving India as Respondent</i>					
<i>Complaint by:</i>	<i>Win</i>	<i>Loss</i>	<i>Amicably settled</i>	<i>Continuing/ Recent Request</i>	<i>Total</i>
Developed countries	0	5	9	4	18
Developing countries	–	–	–	1	1
<i>Cases involving India as Complainant</i>					
<i>Respondents:</i>	<i>Win</i>	<i>Loss</i>	<i>Amicably settled</i>	<i>Continuing/ Recent Request</i>	<i>Total</i>
Developed countries	6	1	5	1	13
Developing countries	1	0	3	–	4

Source: Compiled from WTO documents.

EFFECTS OF INCREASED MARKET ACCESS IN MANUFACTURING

A Review of CGE results

For analysing the possible effects of increased market access conditions on trade and industrial structure we first of all consider the standard Heckscher–Ohlin–Samuelson (HOS) framework of trade. This model predicts that trade liberalisation would shift resources away from the industries intensive in the use of relatively scarce factor to those industries which use the relatively abundant factor of the economy intensively. *The change in resource allocation results from the changes in relative commodity prices due to reduction in trade barriers* and it would improve the allocative efficiency of the economy in the use of resources. The improvement in efficiency is seen in terms of industrial adjustments through specialisation in industries in which the country has comparative advantage. Under the assumptions of perfect competition and constant returns to scale, such changes in relative commodity prices would lead to changes in the relative factor rewards according to the Stolper–Samuelson theorem. Thus, India being a relatively labour-abundant economy, trade liberalisation is expected to shift resources away from the capital-intensive industries towards the labour-intensive industries and consequently the rewards (both nominal and real) to labour would rise and to capital will decline following the Stolper–Samuelson hypothesis. The theory also suggests that such liberalisation will generally increase the welfare level of the economy. Thus, as we have noted above, the *price effects of the reduction of tariffs* may not be very significant for the developed countries as they have already lowered their tariff rates substantially before the UR (Rodrik, 1999) and moreover until the other obstacles to trade—MFA and anti-dumping measures—are removed, the market will be insulated from such price effects. Thus, Rodrik argues that increased openness in these countries affects the elasticity of (labour demand in his case) demand due to increased competition from the cheap labour-intensive products of the developing countries. On the other hand, as Wood and Ridao-Cano (1999) argues, the price changes may be substantial for developing countries as these countries begin the process of lowering their tariffs from very high initial tariff rates.

The quantitative analysis of the possible effects of unilateral and multilateral tariffs reductions as proposed under the UR could be estimated through a computational general equilibrium (CGE modelling) framework. The broad findings of the CGE model by Chadha and others (2003) have been in line with the HOS predictions (shifting of resources towards labour-intensive products, increase in real returns to both labour and capital, growth in output and exports for exporting industries, increase in welfare, etc.). However, the projected decline in output and employment in several industrial sectors have not materialised. The discrepancy with the real world scenario may originate from the essentially static framework of CGE models and their dependence upon the assumed elasticity parameters, apart from the particular model specification underlying the exercise. Moreover, the implicit assumption of perfect competition leading to exit (not just decline) of import competing industries and the rise of export industries is not without its limitations.

It is important to note that the market even after liberalisation is segmented from the world market by tariff and other barriers like transport cost and to that extent the domestic firms can discriminate between the world and domestic markets (Agarwal and Barua, 1993;

1994 and 2004). This implies that the domestic firms can charge higher price than the tariff inclusive foreign price, which gives certain freedom to firms to survive despite foreign import competition. While the distinction between the firm and the industry becomes blurred under the assumption of perfect competition, it now plays an important role under market imperfections. When both export and import competing firms are subject to increasing returns to scale, they face decreasing average cost curves. In the post-liberalisation period as the exporting firms expand they move along the downward slope of the decreasing average cost curve while the import competing firms move up the contour. Thus, while one set of firms is enjoying economies of scale, the other set of firms suffers from diseconomies of scale. The real benefits from increasing returns are therefore not unambiguous as scale advantage from increased production in export goods must be balanced against the diseconomies from the decline in the production of import competing goods (Rodrik, 1988). Chakraborty (2002) provides some evidence of increasing returns in export industries and decreasing returns in import competing goods in India. The net welfare effects are therefore not known. However, this may not happen if industries are such that the import competing firms without any cost can easily adjust itself to produce the exporting variety. So if liberalisation does not lead to exit of the import competing firm then increased openness under the assumption of market imperfections and scale economies is expected to lead to increase in scale efficiency through intra-industry specialisation and improvement in welfare via the effects of increased varieties on consumer demand. A substantial increase in the levels of intra-industry trade has been observed in India since 1991 (Chakraborty, 2002). The cost of adjustments may be minimal if the industrial structures in import and export goods are similar and this would limit the adverse implications on income distribution due to increased openness.

As argued by Agarwal and Barua (2003), openness also plays an important disciplining role in the market. It breaks domestic monopoly and forces market to behave competitively. If this happens then one would observe reduction in the monopoly power in industries reflected in the decline in market concentration due to globalisation.

We however cannot decide a priori which particular framework will be the appropriate one to examine the possible implications of globalisation on Indian industries and firms. The existence of market imperfection does not necessarily preclude the relevance of the HOS framework to analyse the effects of globalisation. The relative price effect may play a far more dominating role than the standard conclusions based on market imperfection. The issue is therefore open to empirical verification.

The Realised Impact of Trade Liberalisation

We first consider here the changing pattern and direction of India's trade. Then we will attempt to analyse whether India's net trade can be explained in terms of factor intensities. For the analyses, we use the trade figures provided under the HS system from various issues of DGCIS Monthly Statistics of Foreign Trade.²¹ First, we consider the changing pattern in India's trade direction. As seen in Table 8.5, the export shares to Africa, Latin America and Asia are increasing in the post-WTO accession period, while the same to former USSR, North America and EU has gone down. A similar trend is observed in case of imports as well, where shares of Africa and Asia are increasing in India's trade basket at the cost of North America and EU.

TABLE 8.5 Exports and Imports of India by Destination

Region	Export			Import		
	1960–61	1990–91	2005–6	1960–61	1990–91	2005–6
EU	36.2	27.5	16.0	37.1	29.4	22.3
North America	18.7	15.6	6.1	31.0	13.4	17.7
Eastern Europe, Russia and Baltic States	7.0	17.9	2.2	3.4	7.8	1.3
Africa	6.3	2.1	2.7	5.6	2.2	5.4
Asia including OPEC	11.0	19.9	35.2	10.3	30.3	48.5
Latin America	1.6	0.4	1.7	0.4	2.3	2.9

Source: *Economic Survey*, various years.

The increase in trade shares of Asia, particularly Southeast and East Asia has been the direct result of the ‘Look East’ policy followed by India since 1991. The collapse of Soviet Union, a major trade partner, coupled with the increasing trend in regionalism in the world caused India to focus its attention to the hitherto unexplored quarters. In the pre-1991 days, India deliberately maintained a distance with the countries located in this region. However, since the initiation of economic reform process in 1991, India is trying to attract FDI inflow in the country and was keen to repeat a ‘flying geese’ phenomenon through East Asian capital (Saint-Mezard 2003, p. 26). Singh (2004) shows that from 1992 onwards, Indian prime ministers have regularly visited the region, so as to facilitate increasing bilateral associations.²²

Next, we focus on the pre- and post-reform trends in India’s trade pattern. In Tables 8.6 and 8.7, the trends in export and import shares of HS sections have been provided. It is clearly seen from Table 8.6 that the percentage share of HS-sections I–V, i.e. primary commodities comprising animal products and processed foodstuffs in India’s export, have declined. Among the intermediate and light manufacturing products, while sections VI, VII and X have shown proportionate increase, sections VIII and IX have declined. Export of section XI (textile and textile articles) has declined, while the same for section V (mineral fuels) has increased considerably. Section XIV (gems and jewellery) is found to be more or less constant over the period. On the whole, the major export items consist of labour-intensive light manufacturing products.²³

It is observed from Table 8.7 that imports of section I–IV, i.e., the primary commodities, are declining. A similar trend is noticed in the other sections barring the exceptions of V (mineral products), VIII (hides and skins, leather products, fur skins and articles thereof), XI (textile & textile articles). Import of section VI (products of the chemical and the allied industries) and XII (footwear, headgear, umbrellas; prepared feathers and articles thereof) in proportional terms did not show any appreciable change over time. Import of section XIV (gems and jewellery) has undergone a changing trend.

The export and import dynamics at HS 2-digit level provides some interesting results. The prominent export items are mineral fuels (HS-27), chemical products (HS-29), articles of leather (HS-42), articles of apparel and clothing (HS-61 and 62), gems and jewellery (HS-71), and machinery and equipment (HS-84 and 85). It is observed that import share of manufacturing items are increasing in general. The most significant import items are mineral fuels (HS-27), gems and jewellery (HS-71), and machinery and equipment products (HS-84 and 85).

TABLE 8.6 Export ratios of India by HS Sections²⁴

Year	1987-88	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1999-2000	2000-01	2001-02	2002-03	2003-04	2005-06
I	4.237	3.125	3.605	4.018	4.020	4.324	4.930	3.929	4.188	4.280	3.891	4.016	3.613	3.405	2.719	2.265
II	14.582	10.848	9.734	9.856	6.514	8.131	7.796	11.177	9.713	9.722	8.889	7.021	6.892	7.077	6.232	4.750
III	0.136	0.285	0.270	0.406	0.313	0.472	0.603	0.848	0.585	0.506	0.714	0.522	0.395	0.292	0.335	0.272
IV	2.708	3.430	3.227	3.715	4.867	4.797	3.122	3.757	5.244	4.388	2.309	2.357	3.057	2.306	2.631	2.203
V	9.118	7.629	7.543	6.991	6.336	5.628	5.028	4.543	4.227	3.439	2.194	6.382	7.247	8.111	8.875	16.711
VI	4.646	8.399	7.864	8.621	6.968	7.080	7.853	7.746	8.793	9.448	9.510	9.538	9.711	10.239	10.370	10.436
VII	0.784	1.127	1.207	1.137	1.839	2.000	2.599	2.467	2.210	2.084	1.983	2.394	2.643	2.903	3.135	3.100
VIII	5.584	5.068	5.392	4.712	5.000	4.011	4.293	3.837	3.256	3.385	2.925	3.029	3.062	2.516	2.442	1.801
IX	0.117	0.087	0.080	0.092	0.074	0.227	0.168	0.118	0.128	0.099	0.080	0.080	0.077	0.092	0.099	0.101
X	0.208	0.193	0.186	0.203	0.259	0.836	0.384	0.476	0.433	0.334	0.449	0.542	0.572	0.605	0.0572	0.539
XI	26.506	23.989	27.433	27.236	28.120	25.738	27.298	25.625	27.391	26.897	26.001	26.038	23.624	22.491	21.114	17.316
XII	2.877	2.457	2.864	2.684	2.369	2.270	2.181	1.918	1.760	1.589	1.756	1.551	1.613	1.292	1.328	1.126
XIII	0.308	0.384	0.434	0.571	0.719	0.795	0.996	1.024	0.974	0.944	1.066	1.180	1.150	1.176	1.162	0.975
XIV	16.772	19.175	16.205	15.387	16.942	18.035	17.179	16.643	14.183	15.327	20.951	16.710	16.748	17.247	16.856	15.383
XV	2.409	3.987	4.088	4.541	6.065	6.243	5.528	5.583	5.827	6.203	6.249	6.677	6.525	8.016	8.819	9.316
XVI	4.707	5.293	5.230	4.849	4.311	4.349	4.656	5.047	5.555	5.826	5.401	6.121	6.464	6.020	6.901	6.747
XVII	1.622	1.957	2.218	2.769	2.927	2.659	2.933	2.815	2.889	2.664	2.226	2.378	2.327	2.538	3.064	4.193
XVIII	0.627	0.684	0.464	0.416	0.319	0.359	0.374	0.377	0.435	0.449	0.675	0.737	0.819	0.808	0.862	0.741
XIX	0.002	0.003	0.001	0.001	0.005	0.003	0.002	0.001	0.003	0.011	0.002	0.005	0.014	0.004	0.005	0.002

TABLE 8.7 Import Ratios of India by HS Sections

Year	1987-88	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1999-2000	2000-01	2001-02	2002-03	2003-04	2005-06
I	0.667	0.175	0.022	0.075	0.093	0.048	0.064	0.092	0.033	0.066	0.097	0.063	0.055	0.066	0.067	0.031
II	2.121	2.127	1.062	1.616	2.870	2.247	2.023	1.629	1.991	2.561	1.725	1.240	2.193	1.979	1.597	1.183
III	4.569	0.710	0.865	0.715	0.453	0.472	0.979	2.014	2.209	1.816	3.930	2.793	2.887	3.046	3.305	1.537
IV	1.284	0.661	0.410	0.466	0.487	0.493	3.103	0.520	0.359	0.642	0.758	0.285	0.342	0.314	0.274	0.410
V	21.349	22.078	30.406	32.266	31.616	28.888	25.918	24.577	30.607	25.649	30.357	36.047	32.276	33.471	30.211	35.274
VI	8.329	11.986	9.774	13.396	12.784	11.388	13.161	16.388	11.283	12.219	10.740	8.442	9.461	8.517	8.683	8.003
VII	3.382	3.719	3.509	3.666	2.658	2.694	3.012	3.355	2.823	2.479	2.132	1.856	2.128	2.036	2.209	2.211
VIII	0.113	0.300	0.437	0.401	0.390	0.496	0.443	0.370	0.366	0.365	0.316	0.394	0.441	0.347	0.313	0.225
IX	1.081	1.126	1.091	0.875	0.907	0.620	0.792	0.666	0.696	1.025	0.929	0.973	1.076	0.675	0.929	0.643
X	2.664	2.156	2.475	1.851	1.789	1.915	1.811	2.217	2.084	2.237	1.684	1.814	1.867	1.612	1.726	1.317
XI	2.032	2.189	2.126	1.726	2.211	2.320	2.957	2.558	2.005	2.022	2.266	2.309	2.980	2.673	2.580	1.793
XII	0.063	0.065	0.083	0.086	0.084	0.111	0.108	0.103	0.079	0.076	0.070	0.069	0.058	0.051	0.055	0.071
XIII	0.456	0.482	0.480	0.457	0.413	0.304	0.470	0.399	0.330	0.364	0.348	0.367	0.459	0.399	0.441	0.453
XIV	9.159	12.137	8.924	10.168	12.239	12.441	8.306	7.979	10.139	15.895	20.592	19.149	18.189	17.057	18.113	13.871
XV	11.556	13.315	11.494	8.668	8.600	7.741	9.193	8.592	8.793	7.847	4.972	4.223	4.969	4.333	4.996	6.608
XVI	17.489	14.736	13.825	11.518	11.793	13.015	14.997	16.664	14.968	15.566	12.425	14.063	14.454	16.606	17.272	17.306
XVII	3.417	4.220	3.966	1.916	2.114	5.444	3.908	2.925	3.798	2.538	2.294	1.883	2.240	3.092	4.133	5.932
XVIII	2.266	2.565	2.573	2.030	2.290	1.997	1.893	1.995	1.543	2.020	1.968	1.958	2.361	2.259	2.048	1.836
XIX	0.003	0.002	0.001	0.001	0.002	0.000	0.000	0.001	0.001	0.002	0.003	0.001	0.002	0.004	0.004	0.001

An Analysis Based on Net Trade Flows

It is observed from the earlier analysis that India's trade in manufacturing products has increased gradually in the post-WTO period, but the trade balance was never in India's favour. On the other hand, although trade with developed countries still accounts for a major proportion of total trade, the share of developing countries is on the rise. Broadly, the trade pattern is in line with the traditional HOS theorem, which predicts that, a labour-abundant country like India will export labour-intensive products, while importing capital-intensive products.²⁵

In order to check the relevance of the theorem for India, we undertake the following estimation exercise. India being a developing country, the net export of a particular product group should bear a positive relationship with the unskilled-skilled wage ratio of the group, and a negative relationship with its capital-labour ratio. Based on this assumption, we calculate net trade figures of India at HS 4-digit level for all industries. The industry-related data is collected from the *Annual Survey of Indian Industries* (NIC-87 classification), and matched with the trade data through a minor modification over the concordance table prepared by Debroy and Santhanam (1993). Since the industry classification system has undergone a change from 1998-99 onwards, to obtain a comparable dataset on trade and industry, we select the 11-year period (1987-88 to 1997-98) as the sample. From the set of 175 industries at 3-digit level of industrial classification, a balanced panel is prepared with 135 industries.²⁶ We estimate the following model:

$$NT_{it} = \mu_i + \beta_1 \cdot (SK/USK)_{it} + \beta_2 \cdot E(K/L)_{2it} + \beta_3 \cdot S_{it} + V_{it} + \varepsilon_{it} \quad \dots (1)$$

Where, $i = 1 (1) 135$, and $t = 1 (1) 11$.

Where NT_{it} is net trade deflated by total trade for the i -th industry in period t , μ_i is constant over time and specific to the individual cross-section unit, known as individual effect,²⁷ $(SK/USK)_{it}$ is the skilled to unskilled labour wage ratio, $E(K/L)_{it}$ is the estimated capital-labour ratio, and S_{it} represents the percentage share of a sector's gross value added in the aggregate gross value added of the industry sector.²⁸ We include a WTO reform dummy V_{it} in the analysis, which takes the value of 1 after 1995 and 0 beforehand. We estimate the equation in Generalized Least Square framework, and usual corrections for autocorrelation and heteroskedasticity are made. The result is reported in the following:²⁹

$$NT_{it} = 0.524 - (0.005) \cdot (SK/USK)_{it} - (0.060) \cdot E(K/L)_{2it} + (0.052) \cdot S_{it} + 0.196 (V_{it}) \quad \dots (2)$$

(***)
(***)
(***)
(***)
(***)

Number of observations = 1479 Wald $\chi^2(4) = 341.27$ Prob. > $\chi^2 = 0.0000$

The empirical findings indicate that net export items are labour-intensive products usually produced by unskilled labours. Moreover, there is a significant impact of the size of the industries in determination of its trade-intensity, as industries with larger size tend to export more. In addition, the WTO dummy is highly significant, implying that WTO accession has favoured export of products intensive in abundant factors.

The S-S theorem in international trade predicts that there will be a distributional impact on the factor prices in the aftermath of free trade. The price of the relatively abundant input would rise while the same for the relatively scarce input will fall, responding to which industries might modify their input requirements. Capital-labour ratio in Indian

industries has gradually increased over time (Chakraborty 2002),³⁰ although both the cost of capital (rate of interest) and real wage has gradually declined over the years.³¹ Hazra and Chakraborty (2005) showed that from 1982 onwards (also in the post-liberalisation period) new industrial units tend to be more capital-intensive owing to the inflexibility in labour market.³² In other words, domestic policy inflexibility has deprived the relatively abundant factor the full effect of economic liberalisation.

INCREASING RETURNS AND IMPERFECT COMPETITION

Implicit in the above analysis are the assumptions of perfect competition and constant returns to scale, which implies that intra-industry trade (IIT) has to be completely ruled out. If however IIT exists then the netting of trade flows in the above analysis will eliminate a large quantity of trade from our analysis. Secondly, intra-industry trade means countries are having simultaneous comparative advantage as well as disadvantage in the same industry, which is not permissible under HOS framework. Grubel and Lloyd (1975), Dixit and Stiglitz (1977), Krugman (1979 and 1980) and Lancaster (1980) theorised this phenomenon by assuming imperfect competition, product differentiation and economies of scale. As argued by Grubel and Lloyd (1975), IIT can be intensified by trade liberalisation and its presence minimises the problems of adjustment, which we have discussed above. Expansion of trade in such a situation does not involve inter-sectoral changes in resource allocation as in the HOS model but only reduction of product varieties within the industry.

Since mid-seventies, research on IIT focused on its determinants and impact. Generally trade reform enhances IIT in manufactures, both in case of developed and developing countries (Balassam 1966; Willmore 1970; Grubel and Lloyd 1975; Globerman 1990; Musonda 1997; Faustino et al. 1998 and Andresen 2001).

Focusing on the Indian data over 1960–80, Pant and Barua (1986) observed that increased trade resulted in no appreciable change in IIT level barring a few commodity groups owing to (a) specialisation in narrow product lines, (b) trade bias towards developed countries and (c) worsening of export potentials of the manufacturing sector. Bhattacharyya (1994) showed that the IIT index is rather skewed in favour of a few selected industry groups, and is considerably higher with developed countries and NICs vis-à-vis the same with developing countries and LDCs (Veeramani 2001).³³ The finding was supported by Kantawala (1997), which reported an insignificant intra-SAARC IIT level for India.

Analysing IIT trends in the capital goods industries, Veeramani (1999) noted a marginal increase over the years and found the trade to be predominantly vertical in nature; both in case of multilateral and bilateral trade.³⁴ It has been observed that for manufacturing products, the relatively higher IIT indices is associated with a rising share in the export basket in general (Veeramani 2001; Chakraborty 2002).

In Table 8.8, the aggregate IIT trends for Indian economy over the last decade are provided where we report Grubel-Lloyd (uncorrected), Grubel-Lloyd (corrected) and Aquino indices. It is observed that overall index is showing an increasing trend by all three measures. In Table 8.9, we report the IIT indices at HS sectional level.³⁵ It is seen that the IIT indices across individual HS sections are also rising over time and quite high for manufacturing items.

TABLE 8.8 The Indices of IIT

Year	Grubel-Lloyd (U)	Grubel-Lloyd (C)	Aquino
1987–88	24.43	29.63	24.25
1988–89	26.41	30.23	25.46
1989–90	29.37	33.47	28.59
1990–91	25.47	29.29	25.12
1991–92	25.44	26.58	25.14
1992–93	27.13	29.90	26.60
1993–94	26.74	27.41	26.55
1994–95	22.92	23.90	22.90
1995–96	22.98	25.19	22.98
1996–97	25.02	27.15	24.84
1997–98	26.82	29.35	26.52
1998–99	26.19	29.72	25.54
1999–2000	28.53	33.77	27.26
2000–1	30.29	32.41	29.48
2001–2	30.32	32.94	29.60
2002–3	32.40	35.08	31.48
2003–4	34.20	40.29	32.75

The IIT indices could qualitatively be further segregated in two categories, namely—horizontal and vertical. Horizontal IIT is generally associated with trade in commodities differentiated by attributes. On the other hand, vertical IIT is prevalent when trade in commodities differentiated by quality takes place. Horizontal IIT are supposed to be more relevant when countries at similar stage of economic development are engaged in trade with each other. Vertical IIT becomes particularly important when trade among countries unequal in terms of development takes place. The recent empirical literature has, however, shown that even in trade among developed countries, vertical IIT could explain a substantial proportion.³⁶ The recent literature on IIT assumes that the differences in unit values (UV) of the commodities represent the quality difference among them. If UV^X and UV^M represent the unit values of export and import items of an industry at the same level of industrial classification respectively, then the trade is regarded as horizontal, if the ratio of the unit values differs by less than α percentage, and vertical, if otherwise.³⁷ In other words, for the trade to be horizontal, the following condition must hold:

$$1 - \alpha \leq (UV^X / UV^M) \leq 1 + \alpha \quad \dots (3)$$

If the above condition is violated, then the trade is vertically differentiated. The arbitrary parameter α could take different values. However, throughout the literature on horizontal and vertical IIT, two values, 15 per cent and 25 per cent, have been used most widely. The 15 per cent threshold is used when the price differences are supposed to reflect only quality differences, based on the assumption of perfect competition, i.e., consumers will not purchase a similar or lower quality good at a higher price. However, in case of imperfect information, where price difference could result from brand names as well, the 15 per cent difference is too narrow. Instead of using 15 per cent as the threshold limit, 25 per cent should be the accurate level for this purpose. Both of these values could be used in order to check the robustness of the result.

TABLE 8.9 IIT Trends (1987-88 to 2002-03)

Year	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
I	1.99	2.00	2.29	1.70	1.96	1.81	3.42	5.34	2.62	5.32	6.33	3.44	6.05	9.03	19.53	16.64
II	23.74	25.36	32.78	34.97	27.30	33.67	32.49	30.06	20.03	26.62	21.59	21.89	34.45	34.32	22.38	27.49
III	3.70	6.30	5.79	8.78	9.54	23.92	18.53	15.54	12.72	3.25	5.55	2.50	3.60	6.63	18.76	10.04
IV	10.43	9.18	6.95	8.18	7.30	6.49	8.92	6.79	17.12	9.70	12.68	9.79	10.69	22.59	22.46	25.15
V	22.27	29.89	31.95	37.52	34.27	35.42	34.87	37.16	36.25	36.81	32.93	17.09	12.80	8.67	9.56	11.59
VI	25.27	14.49	23.35	28.87	23.64	24.04	27.04	31.24	31.13	31.47	33.60	33.61	33.63	40.61	39.50	42.81
VII	18.03	16.77	17.62	16.79	19.23	21.76	19.79	32.12	31.89	28.33	33.69	36.57	41.91	50.88	49.01	50.95
VIII	50.08	32.30	38.83	25.78	20.81	18.65	22.53	26.70	21.86	20.79	16.61	14.24	16.15	21.52	25.79	27.87
IX	3.81	11.46	4.70	3.54	11.98	2.29	3.45	5.78	7.79	12.38	10.36	62.01	7.96	10.59	10.14	15.74
X	22.75	27.98	20.58	25.12	24.85	23.60	22.94	29.74	28.02	26.04	30.65	31.82	35.77	34.22	32.18	29.78
XI	8.84	9.40	11.84	9.97	12.73	12.17	12.90	11.16	11.72	14.65	19.94	19.78	14.48	15.77	18.09	22.10
XII	63.83	68.43	67.29	63.77	61.54	51.06	44.54	39.00	42.02	38.70	49.15	50.01	41.44	49.44	53.22	42.58
XIII	24.21	19.64	23.65	22.75	21.24	17.34	21.84	21.49	21.60	23.75	21.40	25.44	29.09	31.63	34.86	39.73
XIV	96.71	95.59	94.48	93.23	87.92	89.76	91.04	69.59	70.41	74.45	50.98	42.31	53.57	50.71	49.92	58.54
XV	21.79	20.86	30.23	22.73	26.54	23.83	30.40	31.22	35.52	36.10	39.87	40.48	39.29	43.53	43.28	48.83
XVI	52.70	50.56	53.57	57.12	53.51	58.36	58.41	57.66	59.93	58.10	60.44	60.94	59.68	60.14	67.28	61.21
XVII	38.65	46.19	29.22	37.13	37.20	29.00	18.78	23.70	27.63	28.92	39.18	39.20	44.54	43.86	38.30	29.98
XVIII	37.00	35.47	49.50	51.85	47.87	53.28	52.42	53.46	56.12	58.19	59.68	55.98	57.71	57.10	66.71	62.63
XIX	26.01	33.51	27.53	36.01	2.63	35.52	54.05	40.85	34.41	44.44	87.75	50.43	44.90	36.97	80.25	57.59

In Table 8.10, the overall vertical IIT trends in twelve manufacturing industries with high trade share and IIT indices are reported using UV method at three cross-sections of time—1988–89, 1999–2000 and 2003–4. While the first period gives an impression about the pre-reform scenario, the other two depict the same in the post-WTO framework. The increase in market access through tariff liberalisation in the post-1995 period has caused Indian export of manufacturing products to increase, not only in developing countries, but also in developed countries as well. The fact is part represented by the steady increase in the number of both-way traded items over the sample period. In addition, over 1999–2000 to 2003–4, the proportion of both-way trade as a percentage of all traded lines has declined for certain commodities, signifying trade in newer varieties. The analysis reveals that a major proportion of India's trade in the sample groups is vertical in nature. It is further interesting to note that while the proportion of vertical trade increased over 1988–89 to 1999–2000 for most of the industries, it marginally declined over 1999–2000 to 2003–4 for a number of industries both at 15 per cent and 25 per cent level of difference. The decline is particularly marked for HS 42. In other words, for a significant number of commodity groups, the unit price levels of exports and imports at 6-digit level of aggregation moved closer.

INDUSTRY LEVEL ANALYSIS

Rodrik (1988) had made an important point on the effects of trade liberalisation under monopolistic competition and economies of scale by arguing that trade liberalisation may not lead to the exit of the relatively inefficient firms; which do not export but remain import competitive within the domestic market. The segmentation of markets due to tariffs and other barriers make it possible for the non-exporting firms to exist along with the exporting firms. In such a situation, trade liberalisation while enables the exporting firms to move down along the downward sloping average cost curve and enjoy scale economies, the import competing firms will be forced to move up along the average cost curve and suffer from the diseconomies of scale. Thus, the producer's surplus will increase for the exporting firms and will decrease for the import competing firms. The net welfare impact of trade will therefore not be unambiguous. We make an effort to explore whether such scale effects can be seen in the Indian industrial sector in the aftermath of reform. For this we estimate a production function for each industry at NIC 2-digit level and examine if any appreciable changes in scale efficiency can be noticed. The estimation is performed in a two-input framework, with the assumption of a Cobb-Douglas Production function of the following form:

$$Y = A \cdot K^{\alpha} \cdot L^{\beta}$$

Y, K and L being output, capital and labour respectively, then, sum of the powers of the inputs, i.e., $(\alpha + \beta)$ represents the economies of scale. The production function is subject to increasing, constant or decreasing returns to scale depending on the fact whether $\alpha + \beta$ is greater than, equal to or less than one. In the proposed model, gross-value added data is taken as an indicator to represent output Y. The price changes have been corrected by deflating it by the yearly price index of the manufactured products. Of the two inputs considered for analysis, while the calculation of labour is done directly, i.e., the number of employees is taken as a representative of labour input, measurement of capital is done following the Perpetual Inventory Method.

TABLE 8.10 Horizontal and Vertical Specialisation Trend³⁸

HS-Digit	Both way Trade (Number of HS 6-digit lines)				Proportion of Both way Trade (percentage of all 6-digit lines)				Proportional of 6-digit lines with Vertical trade (15 per cent)				Proportional of 6-digit lines with Vertical trade (25 per cent)			
	1988-89	1999-2000	2003-04	2003-04	1988-89	1999-2000	2003-04	2003-04	1988-89	1999-2000	2003-04	2003-04	1988-89	1999-2000	2003-04	2003-04
28	44	61	153	85.00	70.97	95.31	85.00	88.64	86.89	90.20	90.20	77.27	80.33	85.62	85.62	
29	76	129	287	91.69	77.55	98.47	91.69	85.53	91.47	86.41	86.41	77.63	70.07	76.31	76.31	
30	-	16	26	89.66	-	100.00	89.66	-	81.25	100.00	100.00	-	75.00	100.00	100.00	
39	39	47	119	94.44	92.86	100.00	94.44	79.49	93.62	91.60	91.60	69.23	80.85	79.83	79.83	
40	20	24	70	95.89	86.96	100.00	95.89	100.00	91.67	85.71	85.71	100.00	87.5	78.57	78.57	
42	-	12	10	100.00	-	92.31	100.00	-	91.67	70.00	70.00	-	91.67	50.00	50.00	
71	6	14	39	79.59	46.15	77.78	79.59	83.33	85.71	92.31	92.31	83.33	64.29	82.05	82.05	
72	61	63	155	91.18	63.54	94.03	91.18	88.52	90.48	77.42	77.42	78.69	80.95	67.10	67.10	
73	33	50	111	92.50	67.35	96.15	92.50	96.97	94.00	96.40	96.40	87.88	88.00	91.89	91.89	
84	167	198	471	92.90	90.76	98.02	92.90	97.6	97.47	95.75	95.75	96.40	95.96	93.84	93.84	
85	78	99	275	94.18	93.98	99.00	94.18	96.15	92.93	89.82	89.82	93.59	87.88	83.27	83.27	
87	19	27	65	89.04	65.52	96.43	89.04	94.74	96.30	93.85	93.85	89.47	81.48	86.15	86.15	

For estimating the production function at 2-digit level, data at 3-digit level is considered for the industries (NIC-1987) taken from the factory sector.³⁹ From the 183 industries, 15 industries have been dropped, as they are not economically productive uniformly throughout the period. We define 1987–88 to 1991–92 to be the pre-reform period, while 1992–93 to 1997–98 is considered as the post-reform period.⁴⁰ The production function is written in logarithmic form in the following way:

$$Y_{it} = \mu_i + \beta_L \cdot K_{it} + \beta_K \cdot L_{it} + \varepsilon_{it} \quad \dots (4)$$

Where, $i = 1 (1) n$, and $t = 1 (1) T$

Where Y is the logarithm of output and K and L are the logarithms of inputs, μ_i is constant over time and specific to the individual cross-section unit, known as individual effect. 'n' is the number of industries in a particular group.

As noted by Rodrik (1995), the scale efficiency should rise in the post-liberalisation period, in particular for a country like India, where policy restrictions played a major role in the pre-reform days. The results of economies of scale estimation are briefly summarised in Table 8.11. First, it is checked whether a sector is subject to scale economies, i.e., whether $(\alpha + \beta - 1)$ is significantly different from zero. On the basis of that test, we drop HS 22 (beverages and tobacco), HS 33–34 (basic metal and metal products) and HS 38 (other manufacturing industries) from the analysis, and proceed with the remaining seven sectors.

TABLE 8.11 The Trends in Scale Efficiency of the Industrial Sector

<i>Industries with $(\alpha + \beta - 1)$ significantly different from zero</i>				
<i>Industry code</i>	<i>Description</i>	<i>Trends in Net Trade</i>	<i>$(\alpha + \beta)$ in pre-reform period</i>	<i>$(\alpha + \beta)$ in post-reform period</i>
20–21	Manufacture of food products	Negative in mid-eighties, but becomes positive from early nineties.	1.0971	1.1423
23–26	Cotton Textile and other fabrics	The trade balance was always positive, the increasing in recent years.	1.0543	1.1435
27–28	Wood and Paper industries	The trade balance was always negative, and increasing in the recent period.	1.0704	1.1287
30–31	Chemicals, rubber and plastic	Positive in mid-eighties, but becomes negative since early nineties. The balance is worsening in recent period.	1.2372	0.8481
32	Non-metallic mineral products	Negative in mid-eighties, but becomes positive afterwards. The trade balance is fluctuating.	0.9852	1.4640
35–36	Machinery and equipment	The trade balance was always negative, and worsening in recent period.	1.1947	1.0492
37	Transport Equipments	The trade balance was always negative, and worsening in recent period.	1.1537	1.0661
<i>Industries with $(\alpha + \beta - 1)$ not significantly different from zero</i>				
<i>Industry code</i>	<i>Description</i>			
22	Manufacture of beverages, tobacco and related products			
33–34	Basic metals and manufactures of metal products			
38	Other manufacturing industries			

It could be seen from Table 8.11 that the scale efficiency of the factory sector does not show a uniform trend. Certain sectors show an increase in scale efficiency while the others have shown decrease in efficiency. For a number of sectors, the liberalisation dummy has been found to be statistically non-significant. We compare the result of scale efficiencies of the manufacturing industries at 2-digit NIC level with the trade balances of the corresponding HS-industries at 2-digit level in the same table. The observation reveals that, in general, the NIC-industries with decrease in scale efficiency are associated with a declining trend in net trade of the corresponding HS-industries over the sample period. The only exception is the wood and paper industry, for which the economies of scale has increased in the post-liberalisation period, despite a negative trade balance. In other words the import-competing sectors in the post-liberalisation period have suffered to certain extent, while the net exporter industries reaped the advantages of increased scale efficiency. The result broadly in line with the findings of Krishna and Mitra (1998), which found that although the rate of growth of productivity has increased weakly in the post-liberalisation period, the returns to scale expressed as a sum of factor shares has actually declined.⁴¹

CONCLUSION

From the above analysis the following conclusions can be drawn. First, the Indian economy is much more liberalised today in comparison to the pre-1991 situation. This has happened partly because of the internal compulsions created by the serious BOP crisis in 1991 and the slowing down of productivity growth over decades and partly by the external forces due to the obligatory commitments under the WTO. Second, by focusing on the manufacturing sector only, it is observed that trade liberalisation has led to increase in the net exports of the labour-intensive products across the spectrum of industries. Third, by introducing possibilities of increasing returns and market imperfection, it is seen that trade liberalisation does not lead to extinction of import competing industries from the economy as would be predicted by the traditional theory. Rather, it forces the import competing industries to move upwards along their downward sloping average cost curves. This had led to a decrease in the scale of production of the import competing goods and consequently loss of efficiency. On the other hand, the exporting industries realised economies of scale from their expansion of production and as a result experienced efficiency gains. The net effect of trade liberalisation, both unilateral as well as WTO-induced, on welfare therefore is ambiguous.

Endnotes

¹ India being a developing country is entitled to use a higher WTO Bound rate.

² A—Simple Mean Tariff, B—Standard Deviation of Tariff Lines, C—Weighted Mean Tariff, D—Share of Tariff Lines with International Peaks, E—Share of Tariff Lines with Specific Tariffs.

³ The detailed account of EU and US barriers could be obtained from the *National Trade Estimate* report published by the United States Trade Representative and the *Report on United States Barriers to Trade and Investment* published by the European Commission, apart from the respective trade policy reviews brought out by WTO from time to time. WTO Trade Policy Review of EU (2000) deserves special mention in this regard.

⁴ In particular, the developing countries were against inclusion of the Singapore issues, i.e., Trade and Investment, Competition Policy, Transparency in Government Procurement, and Trade Facilitation and Trade and Environment related discussions at the proposed new round.

⁵ 'As some members (notably Australia, Hong Kong, China, India and Singapore) have shown, unilateral liberalisation can also be in their national interest' WTO 2003, 11).

⁶ Indian pharmaceutical sector has suffered heavily on this count. The Cipla-South Africa incidence as quoted in Dasgupta (2003) is the best example of it.

⁷ 'G-20 Ministerial Declaration', available at http://www.commerce.nic.in/wto_sub/g20/min_decln.htm.

⁸ The export and import share of India stood at 2.2 and 3.1 respectively in 1948. However, it stood at 0.5 and 0.6 per cent in 1992. After ten years of reform experience, the shares have increased marginally to 0.8 and 0.9 per cent in 2002.

⁹ For instance, Chapter V(b) of Industrial Dispute Act might be cited, which directed that for factories with more than 100 workers, prior permission from government is a must before retrenching them in order to make the firm viable. Hazra (2001) shows that even if a firm foresees higher demand for its products in a given period, it would be reluctant to employ more workers because retrenching them during lean periods could be impossible, which leads to increasing capital/labour ratio in the factory sector over time.

¹⁰ Now, private investment in power is unrestricted with 100 per cent foreign equity allowed. Moreover, foreign investment in mining is allowed up to 50 per cent equity.

¹¹ During 2000–1, the government de-reserved the readymade garments sector from SSI list. Next year, de-reservation was done in the field of 14 items related to leather goods, shoes and toys. Finally during 2002–3, 51 more items were removed from the list. The acceptance of the Competition Act (2002) by the lower house of the parliament also had a significant impact on the market structure.

¹² FDI policy in initial years allowed automatic approval of foreign investment in various sectors up to 51 per cent, and the limit is being raised in recent years to 100 per cent in select sectors and special economic zones (SEZs), apart from introduction of one-window facilities instead of time-consuming lengthy bureaucratic channels. In addition, during 2002–3, FDI has been allowed in print media up to 26 per cent, which was not implemented earlier due to national security concerns.

¹³ The Tarapore Committee report (1997) recommended that a number of precautionary measures should be gradually implemented before making capital account fully convertible.

¹⁴ WTO-induced reforms played a crucial role in this regard. Restriction on several import items on BOP grounds were withdrawn after losing the case against US (DS 90). Similarly, the impetus for reforms in the domestic IPR regime came in the aftermath of losing two cases on patent protection for pharmaceutical products to US (DS 50) and EC (DS 79).

¹⁵ Virmani et al (2004) has shown that Indian industry would gain from further reduction of tariffs in the coming years in terms of efficiency.

¹⁶ For a detailed analysis, see Bhattacharya (1999). Bhattacharya estimated the total NTM affected exports from India to EU, US and Japan to be Rs 155,910.7 million, Rs 81,623.78 million and Rs 33,350.06 million respectively during 1996–97.

¹⁷ Taiwan (DS 318—1 November 2004), Bangladesh (DS 306—2 February 2004) and EU (DS 304—11 December 2003) has lodged three cases against India complaining its initiation of Anti-Dumping measures to be WTO-incompatible. Bangladesh is the first developing country to lodge a case against India at the dispute settlement body.

¹⁸ The quantitative restrictions on import of primary and other commodities had to be removed in 2000, as India lost the case on 'Quantitative restrictions on imports of agricultural, textile and industrial products' (DS 90) against US in 1999. The list of the 714 items at HS 8-digit level, which were free from QR with effect from 31 March 2000, are provided in the March 2000 issue of *India and the WTO*, the monthly newsletter of Ministry of Commerce, Government of India.

¹⁹ It needs to be mentioned that in two cases, (DS58, import prohibition of shrimp and shrimp products against US, and DS206, anti-dumping and countervailing measures on steel plate against US), although certain US procedures in force were ruled WTO-inconsistent, some of India's claims were rejected by the panel in the latter while certain panel rulings were reversed by the Appellate Body in the former.

²⁰ China is not happy with India's anti-dumping policy for a long time. US has raised voice on a couple of occasions that the level of market access proposed in India through some liberalised measure is often nullified because of restrictive policies in other fields.

²¹ The *International Trade Statistics Yearbook*, United Nations, provide SITC data, it does not publish export and import figures of the traded items, whose values are less than 0.3 per cent of total trade. Hence, a number of commodities will remain excluded, if the UN data is to be used.

²² The initiative of the policy makers was adequately supported by the business community, as Confederation of Indian Industries (CII), which accompanied the prime ministers in all these trips, played a crucial role in this period.

²³ The 'Revealed Comparative Advantage' (RCA) indices of Kumar et al. (2000) showed improvement mainly in labour-intensive products, with a specialisation trend in narrow product lines. However, it was observed that India does not possess competitiveness in a vast number of commodities.

²⁴ HS I—Live animals, animal products; HS II—Vegetable products; HS III—Animal or vegetable fats, and oils and their cleavage products; HS IV—Prepared foodstuffs, beverages and tobacco; HS V—Mineral products; HS VI—Products of the chemical and the allied industries; HS VII—Plastics and rubber; HS VIII—Hides and skins, leather products, furskins and articles thereof; HS IX—Wood, cork & articles thereof, manufacture of plaiting materials; HS X—Paper, paper-board and articles thereof, HS XI—Textile and textile articles; HS XII—Footwear, headgear, umbrellas, prepared feathers and articles thereof, HS XIII—Stone, cement and similar materials, ceramic products, glass and glassware; HS XIV—Pearls, precious and semi-precious stones/metals and articles thereof; HS XV—Base metals & articles of base metals, HS XVI—Machinery & their parts, electrical & electronic equipment, parts thereof; XVII—Transport equipment; XVIII—Instrument and apparatus, clocks and watches, parts and accessories thereof; XIX—Arms and ammunition, parts and accessories thereof.

²⁵ However, Bharadwaj (1962) by analysing Indo-US bilateral trade arrived at a conclusion that the trade pattern refutes HOS theorem, since India export capital-intensive products and imports labour-intensive products.

²⁶ A number of industries have been merged and some others are dropped, as they were not operational for a major portion of the sample period.

²⁷ In the fixed-effect approach, μ_i is considered to be a group-specific constant, whereas in random effect model μ_i is considered to be a group-specific disturbance term.

²⁸ The capital-labour ratio is estimated by using Perpetual Inventory Method following Hashim and Dadi.

²⁹ **** implies significance at 1 per cent level.

³⁰ The increasing trend was observed not to be restricted to machinery, chemical or metal products, but equally strong in relatively labour-intensive sectors like plastic products and food industries as well.

³¹ The report on the Second National Commission on Labour (2002) notes, 'As a result of increase in prices, there is an erosion in the wage levels in real terms, and in order to prevent such an erosion, dearness allowance is paid and it is linked to the consumer price index.' p. 1348.

³² According to Chapter V-B of the Industrial Dispute Act (1947), a firm employing more than 300 workers needed prior permission of the government to retrench the excess labours, which was further amended to 100 in 1982. According to Hazra (2001), even if a firm foresees higher demand for its products in a given period, it will be reluctant to employ more workers because retrenching them in lean period could be impossible, as the government never permits retrenchments owing to political compulsions.

³³ The empirical finding also suggested that the link between industrial organisation and international trade, which was so effectively established for developed countries, does not hold good in the Indian scenario.

³⁴ The study came out with the policy prescription that future export promotion strategies should exploit the comparative advantage at the finer industry level rather than focusing any sector as a whole.

³⁵ However, at the sectional level it is seen that under a few circumstances, the value of export or import items at the 4-digit level are uniformly higher than the corresponding import or export items. Under these circumstances, using G-L index may not be the appropriate method. Hence, for calculating the IIT values at the sectional level the Acquino method (1978), which allows for correction of overall imbalance at the elementary level, is used as the more appropriate measure.

³⁶ The vertical or horizontal specialisation in recent literature is defined in the following way by calculating unit value index, which is discussed in detail in chapter 2. This method has been adopted by Abed-el-Rahman (1991), Greenaway, Hine and Milner (1995), Aturupane et al (1997), Andresen (2001) and others.

³⁷ The rationale for using UVs is that assuming perfect information, a variety sold at a higher price is in general associated with a higher quality, or, stated otherwise, relative prices reflect relative qualities. This notion is in line with the findings of Stiglitz (1987), which states that even with imperfect information, prices tend to reflect quality.

³⁸ HS 28—Inorganic chemicals, HS 29—Organic chemicals; HS 30—Pharmaceutical products; HS 39—Plastics and articles thereof; HS 40—Rubber & articles thereof; HS 42—Articles of leather, saddlery harness and animal gut; HS 71—Pearls, precious and semi-precious stones/metals & articles thereof; HS 72—Iron and steel; HS 73—Articles of Iron and steel; HS 84—Nuclear reactors, boilers, machinery and mechanical appliances, parts thereof; HS 85—Electrical machinery and equipment and parts thereof, sound and TV recorders, and reproducers and parts thereof; HS 87—Road vehicles and parts.

³⁹ The repair and servicing sector, included in 39–43, 74, 91 and 95–97, is dropped, and we concentrate on industries ranging from 20–21 to 38.

⁴⁰ 1991–92 has been defined as the liberalisation year, since several reform measures in industrial policies were initiated from that point.

⁴¹ However, the authors believed that the reduction does not necessarily mean lower scale efficiency but may indicate an increased exploitation of returns to scale by firms, which may have been operating at too small a scale before initiation of reforms. It could also reflect the relatively inflexible capacity constraints in the industries.

References

- Abed-el-Rahman, K. 1991. 'Firms Competitive and National Comparative Advantages As Joint Determinants of Trade Composition', *Weltwirtschaftliches Archiv*, vol. 127, pp. 83–97.
- Agarwal, Manmohan and Alokesh Barua. 2004. 'Entry Liberalization and Export Performance: A Theoretical Analysis in a Multi-market Oligopoly Model', *Journal of International Trade and Economic Development*, vol. 13, no. 3, pp. 287–303.
- . 2002. 'Firm and Industry Response to Liberalization in India: Theory and Evidence', paper presented in an international seminar organised by the CSH on Globalization of Firms: India, China and Russia on 19–20 December 2002, New Delhi.
- . 1994. 'Effects of Entry in a Model of Oligopoly with International Trade', *Journal of International Trade & Economic Development*, vol. 3, no. 1, pp. 1–13.
- . 1993. 'Trade Policy and Welfare in Segmented Markets', *Keio Economic Studies*, vol. 30, no. 2, pp. 95–108.
- Aggarwal, Aradhna. 2002. 'Anti-Dumping Law and Practice: An Indian Perspective', ICRIER Working Paper no. 85, April.
- Albuero, Florian A (2003)
- Andresen, Martin A. 2001. 'Canada, the United States and NAFTA: The Effects on Trade Patterns', Working Paper, Department of Economics, Simon Fraser University.
- Aquino, Antonio. 1978. 'Intra-industry Trade and Inter-industry Specialisation as Concurrent Sources of International Trade in Manufactures', *Weltwirtschaftliches Archiv*, vol. 114, pp. 275–96.
- Aturupane, Chonira, Simion Djankov and Bernard Hoekman. 1997. 'Determinants of Intra-industry Trade between East and West Europe', draft paper, World Bank.
- Balassa, Bela. 1966. 'Tariff Reductions and Trade in Manufactures among the Industrial Countries', *American Economic Review*, vol. 56, pp. 466–73.
- Bharadwaj, R. 1962. 'Factor Proportions and the Structure of Indo-US Trade', *Indian Economic Journal*, vol. 10, October.
- Bhattacharya, B. 1999. 'Non-Tariff Measures on Indian Exports: An Assessment', Occasional Paper no. 16, Indian Institute of Foreign Trade.
- Bhattacharyya, R. 1994. 'India's Intra-Industry Trade: An Empirical Analysis (1970–1987)', *Indian Economic Journal*, vol. 42, no. 2, pp. 54–74.
- Chadha, R. et al. 2003. 'Computational Analysis of the Impact on India and the Uruguay and the Uruguay Round and the Doha Development Agenda Negotiations', in *India and the WTO*, edited by Aaditya Mattoo and Robert M. Stern, New Delhi: Oxford University Press, pp. 13–46.
- Chaisse, Julien and Debashis Chakraborty. 2004. 'Disputes Resolution in the WTO: In the Light of Chinese and Indian Involvements', in *Future Negotiation Issues at WTO: An India-China Perspective*, edited by Bibek Debroy and Mohammad Saqib, New Delhi: Globus Books, pp. 377–432.
- Chakraborty, Debashis. 2007. 'Misuse of Anti-Dumping Provisions: What do the WTO Disputes Reveal?', in *Anti-Dumping: Global Abuse of a Trade Policy Instrument*, edited by B. Debroy and D. Chakraborty, New Delhi: Academic Foundation, pp. 155–83.
- . 2002. 'India's Intra-industry Trade: An Analysis of the Pre-reform and Post-reform Trends', unpublished M.Phil dissertation, International Trade and Development Division, School of International Studies, 2002.
- Das, D. K. 2003. 'Manufacturing Productivities under Varying Trade Regimes: India in the 1980s and 1990s', ICRIER Working Paper no. 107, July.

- Das, S. K. and Alokesh Barua. 1996. 'Regional Inequalities, Economic Growth and Liberalization: A Study of the Indian Economy', *Journal of Development Studies*, vol. 32, no. 3.
- Dasgupta, Subhendu. 2003. 'Their Rules, Our Rights: Intellectual Property Rules and Right to Health', in *WTO and TRIPS: Indian Perspective*, edited by Byasdeb Dasgupta et al., Kalyani: University of Kalyani, pp. 27–41.
- Debroy, Bibek and A. T. Santhanam. 1992. 'Matching the Codes of the ITC (Revision 2) with the ITC (Harmonized System)', *Foreign Trade Bulletin*, Indian Institute of Foreign Trade, January.
- . 1992. 'Concordance between National Industrial Classification and India Trade Classification (Revision 2)', *Foreign Trade Bulletin*, Indian Institute of Foreign Trade, July 1992.
- . 1993. 'Matching Trade Codes with Industrial Codes', *Foreign Trade Bulletin*, Indian Institute of Foreign Trade, July.
- Dixit, Avinash and Joseph Stiglitz. 1977. 'Monopolistic Competition and Optimum Product Diversity', *American Economic Review*, pp. 297–308.
- Faustino, H. C., J. R. Silva and R. V. Carvalho. 1999. 'Testing Intra-Industry Trade between Portugal and Spain: 1990–1996', Working Paper, Instituto Politecnico De Portalegre.
- Globerman, Steven and J. W. Dean. 1990. 'Recent Trends in Intra-industry Trade and their Implications for Future Trade Liberalization', *Weltwirtschaftliches Archiv*, pp. 25–49.
- Goldar. 2004. 'Productivity Trends in Indian Manufacturing in the Pre and Post Reform Periods', ICRIER Working Paper no. 137, June.
- Ministry of Finance. various years. *Economic Survey*, New Delhi: Government of India
- Ministry of labour. 2002. *Second Labour Commission Report*, New Delhi: Government of India, http://labour.nic.in/lcomm2/nlc_report.html.
- Greenaway, David, Robert Hine and Chris Milner. 1995. 'Vertical and Horizontal Intra-industry Trade: A Cross Industry Analysis for the United Kingdom', *Economic Journal*, vol. 105, pp. 1505–18.
- Grubel, Herbert G. and P. J. Lloyd. 1975. *Intra-industry Trade: The Theory and Measurement of International Trade in Differentiated Products*, New Delhi: Macmillan.
- Hazra, Arnab Kumar. 2001. 'Industrial Disputes Act: A Critical Appraisal', RGICS Working Paper Series no. 29.
- Joshi, Vijay and I. M. D. 1998. Little, *India Economic Reforms 1991–2001*, New Delhi: Oxford University Press.
- Kantawala, Bhavana S. 1997. 'Inter and Intra-industry International Trade among SAARC Countries: 1981–1992', *Foreign Trade Review*, vol. XXXII, no. 1 & 2, pp. 29–72.
- Krishna, Pravin and Devashish Mitra. 1998. 'Trade Liberalisation, Market Discipline and Productivity Growth: New Evidence from India', *Journal of Development Economics*, vol. 56, pp. 447–62.
- Krugman, Paul R. 1979. 'Increasing Returns, Monopolistic Competition and International Trade', *Journal of International Economics*, vol. 9, no. 4, pp. 469–79.
- . 1980. 'Scale Economies, Product Differentiation, and the Pattern of Trade', *American Economic Review*, no. 5, pp. 950–59.
- Kumar, A. G., K. Sen and R. Vaidya, 2000. 'India's Export Competitiveness and Finance', in *India Development Report*, Mumbai, pp. 177–90.
- Lancaster, K. 1966. 'A New Approach to Consumer Theory', *Journal of Political Economy*, vol. 74, pp. 132–57.
- . 1980. 'Intra-industry Trade under Perfect Monopolistic Condition', *Journal of International Economics*, vol. 10, 1980 pp. 151–75.

- Nag, Biswajit and Debashis Chakraborty. 2006. 'India's Approach to Asian Economic Integration', paper presented in the conference on Globalization, Blocization, and East Asian Economic Integration, Center for WTO Studies, National Chengchi University, Taipei, 31 March.
- Naik, Gopal and Yashika Singh. 2003. 'Doha Round Negotiations: Agriculture', Working Paper no. 217, Indian Institute of Management, Bangalore, November.
- Pant, Manoj and Alokesh Barua. 1986. 'India's Intra-Industry Trade: 1960–80', Discussion Paper no. 8, International Trade and Development Division, School of International Studies, JNU.
- Raizada, B. and Javed Sayed. 2002. 'IPR and Drugs and the Pharmaceutical Industry: Concerns for Developing Countries', in *Salvaging the WTO's Future: Doha and Beyond*, edited by Amit Dasgupta and Bibek Debroy, New Delhi: Konark Publishers, pp. 274–89.
- Rao, Padma Arti. 2001. 'A Study of the Determinants of Firm Profitability in Selected Industries in Post-Reform India', unpublished M.Phil. dissertation, Delhi School of Economics, University of Delhi.
- Ridao-Cano (1999)
- Rodrik, D. 'Imperfect Competition, Scale Economies, and Trade Policy in Developing Countries', in *Trade Policy Issues and Empirical Analysis*, edited by R. E. Baldwin, Chicago and London: University of Chicago Press, 1988.
- Rodrik, D. 1995. 'Trade and Industrial Policy Reform', in *Handbook of Development Economics*, vol. III, edited by J. Behrman and T. N. Srinivasan, pp. 2925–82.
- Rodrik, D. 1999. 'Making Openness Work: The New Global Economy and the Developing Countries', Overseas Development Council, Washington DC, 1999.
- Saint-Mezard, Isabelle. 2003. 'The Look East Policy: An Economic Perspective', in *Beyond the Rhetoric: The Economics of India's Look East Policy*, vol. III, edited by Frederic Grare and Amitabh Mattoo, New Delhi: Centre de Sciences Humaines and Manohar, pp. 21–43.
- Singh, Swaran. 2004. 'Factoring Taiwan in India's Look East Policy', in *India and ASEAN: Foreign Policy Dimensions for the 21st Century*, edited by K. Raja Reddy, New Delhi: New Century Publications, 2004.
- Singh, Yashika. 2000. 'EU Trade: Tariff and Non-tariff Hurdles', RGICS Working Paper no. 13.
- Srivastava, Vivek, Pooja Gupta and Arindam Datta. 2001. *The Impact of India's Economic Reforms on Industrial Productivity, Efficiency and Competitiveness: A Panel Study of Indian Companies, 1980–97*, New Delhi: National Council of Applied Economic Research.
- Stiglitz, Joseph. 1987. 'The Causes and Consequences of the Dependence of Quality on Price', *Journal of Economic Literature*, vol. 25, pp. 1–48.
- Tata Services Limited. 2003. *Reforms and Productivity Trends in Indian Manufacturing Sector*, Mumbai: Department of Economics and Statistics.
- Topalova, Petia. 2003. 'Trade Liberalization and Firm Productivity: the Case of India', Yale University, www.econ.yale.edu/seminars/NEUDC03/topalova1.pdf.
- UNCTAD (1996).
- Unel, Bulent. 2003. 'Productivity Trends in India's Manufacturing Sectors in the last Two Decades', IMF Working Paper no. WP/03/22.
- Veeramani, C. 1999. 'Intra-Industry Trade under Economic Liberalisation: The Case of Indian Capital Goods Industries', *Journal of Indian School of Political Economy*, vol. 11, no. 3, pp. 455–73.
- _____. 2001. 'India's Intra-Industry Trade Under Economic Liberalisation: Trends And Country Specific Factors', Working Paper no. 313, Centre for Development Studies.

- Virmani, A., B. Goldar, C. Veeramani and V. Bhatt. 2004. 'Impact of Tariff Reforms on Indian Industry: Assessment based on a Multi-sector Econometric Model', ICRIER Working Paper no. 135, July.
- Willmore, L. N. 1972. 'Free Trade in Manufactures among Developing Countries: The Central American Experience', *Journal of Economic Development and Cultural Change*, vol. 20.
- Wood, Adrian and Ridaio-Cano Cristobal. 1999. 'Skill, Trade and International Inequality', *Oxford Economic Papers*, no. 51, pp. 89–119.
- World Bank. various years. *World Development Indicators*, Washington DC: The World Bank.
- World Trade Organization. various issues. *WTO Annual Report*, Geneva: WTO.
- . 1999. *WTO: Trading into the Future*, Geneva: WTO.
- . 2001. 'Market Access: Unfinished Business—Post-Uruguay Round Inventory and Issues', Special Studies no.6.
- . 2000. *Trade Policy Review, European Union*, Geneva: WTO.