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**INDIAN EXPORT AND ECONOMIC GROWTH PERFORMANCE
IN ASIAN PERSPECTIVE**

SURESH D. TENDULKAR
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Core-6A, 4th Floor, India Habitat Centre, Lodi Road, New Dlehi-110 003

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Foreword

This paper by Suresh Tendulkar is the second and final paper for the project “Indian Export and Economic Growth Performance in Asian Perspective” which was funded by the Export-Import Bank of India. It analyses India’s export and economic growth performance in a comparative perspective of 5 South East Asian economies, China, and two of India’s South Asian neighbours, i.e. Pakistan and Bangladesh. Tendulkar finds that the crucial difference between India and the rapidly growing economies lay in the persistently restricted industrial and trade policies that motivated Indian industrialization in contrast with the shift to unilateral trade liberalization that the other economies undertook during the fairly early stages of their development. The latter successfully exploited the powerful instrumental role of international trade in stepping up their rate of economic growth and thereby improving living standards.

Tendulkar’s empirical analysis leads him to conclude that international trading opportunities can act as a powerful instrument in stepping up the rate of economic growth provided the internal mainsprings of the growth process are maintained and continually strengthened. The process of shedding more than four-decade long protectionist past would require reallocation of resources away from the inefficient import-substitution-oriented sectors towards export oriented activities. Recognizing this, the author emphasizes that adequate social safety nets are essential for minimizing the transitory adverse effects of adjustment.

I hope that this paper will help counter the export pessimism that has been so dominant in the thinking on development strategy in India.

December, 2000

Isher Judge Ahluwalia
Director & Chief Executive
ICRIER, New Delhi

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Suresh D. Tendulkar*

Executive Summary

The paper addresses apprehensions, unwarranted, in our view, that still persist in the minds of policy makers, bureaucrats, political leaders and radical intelligentsia on the imperative need to accelerate the pace of global integration of the Indian economy. By pacing the economic performance of India in respect of export-earnings and economic growth during 1980-96 in the Asian perspective that includes the rapidly growing economies of East and South East Asia (South Korea, Taiwan, Thailand, Indonesia, Malaysia and (mainland) China) which started around more or less the same level of per capita GDP as India in the 1950s but today enjoy much higher living standards than those in India. This is despite the fact that India had a headlong start in industrialisation well-ahead of those countries in the 1950s. The crucial difference between India and the rapidly growing economies lay in the persistently restricted industrial and trade policies that motivated Indian industrialisation in contrast with the shift to unilateral trade liberalisation and markets that those economies undertook during the fairly early stages of their development. They successfully exploited the powerful instrumental role of international trade emphasised by Kravis(1970) in stepping up their rate of economic growth and thereby improving living standards. The perspective also includes India's South Asian neighbours Pakistan and Bangladesh who inherited the autarchic Indian legacy and the Philippines which has been an outlier in South-East Asia. The paper is empirical in character and takes a process view of development in the tradition of Simon Kuznets and Arthur Lewis.

The following major findings emerged from our empirical analysis:

(1) During 1980-96 period, growth of Indian export earnings turned out to be above the world average for all the broad categories of Extended-Manufacturing (E-Mfg) exports including double digit growth rates in labour and scale intensive products. However Indonesia, Malaysia and Thailand posted much higher and more stable growth rates than India. Interestingly, South Korea and Taiwan did

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much better than India in resource intensive products as well as technologically more sophisticated differentiated and science-based products (Section II). A better export performance than India in technologically more sophisticated products by South Korea and Taiwan requires to be underlined. India had a headlong start in industrialisation in the 1950s well ahead of these countries, but the persistently autarchic character of Indian industrialisation not only made it internationally non-competitive but wasteful in scarce capital and foreign exchange, thereby slowing down the rate of economic growth.

(2) Faster than world average export growth in E-Mfg over 1980-96 resulted in a rise in India's share in world E-Mfg exports from an average of 0.3 percent (1980-86) to 0.5 percent (1993-96). By itself, this was remarkable because the world E-Mfg exports tripled over this period. However, much smaller countries like South Korea and Taiwan as also other late entrant smaller economies like Malaysia and Thailand more than doubled their shares in E-Mfg. China, too, doubled its higher share over a shorter period from 1987-90 to 1993-96 (Section III).

(3) Turning to the commodity composition of country specific export basket, India improved the share of E-Mfg significantly from 56 percent (1980-86) to 71 percent (1987-90) in total exports (all SITC codes) during the first period but only marginally further to 75 percent during 1993-96. The first period 1980-90 was marked by a rise in the share of scale-intensive exports. Share of labour intensive exports remained constant around 40 percent. Other early trade liberalising and rapidly growing economies changed their export-basket increasingly towards differentiated and science-based products. This diversification reflected corresponding changes in their factor endowments and domestic production structure thereby reducing their vulnerability to volatile world trading environment in resource intensive exports and slower growing world exports of labour intensive products (Section IV).

(4) Analysis of incremental average annualised exports between 1980-86 and 1993-96 for nine countries excluding China showed that these countries accounted for 21 percent of corresponding incremental world exports in labour intensive manufacturing products. Four countries (Thailand, Indonesia, Taiwan and South Korea) had more than two thirds of the regional share with India (2.5 Percent) coming fifth. Ten countries including China over the shorter period between 1987-90 and 1993-96 had 42 percent share in world incremental labour intensive exports more than half of which was claimed by China. India with 4.5 percent share occupied the fourth position after China. Indonesia and Thailand (Section V).

(5) Analysis of competitiveness at 3-digit SITC level showed that India had sustained presence only in certain labour-intensive products in some of which

South Korea and Taiwan too, had maintained their competitiveness. These two countries along with Indonesia, Thailand and Malaysia had established competitiveness in technologically more sophisticated differentiated and science-based products (Sector VI).

(6) Better export-performance than India by smaller economies like Thailand and Malaysia as well as large economies (in terms of population) like Indonesia and China was attributable to their earlier start than India, not in industrialisation but in unilateral trade liberalisation. Possibly realising the limited size of their domestic markets at low levels of per capita incomes, these countries had switched from import-substitution to export-orientation fairly early in their development process. India was the first in initiating industrialisation but the last in trade liberalisation. This difference got reflected in the more rapid growth rates of aggregate GDP (between 6 to 10 pcpa compared to 5 pcpa by India over (1980-96)) recorded by these countries. The difference in the aggregate performance would be sharper over the entire post-Second World War period. The powerful instrumental role of international trade that these Asian countries exploited needs to be emulated by India with great urgency because it has lagged behind these countries technologically, industrially and in terms of per capita GDP in purchasing power parity dollars.

The rapidly growing East and South-East Asian neighbours of India have clearly established that economies, whether small or large, (in terms of population) have improved their living standards by aggressively participating in the global division of labour and interacting with the global economy under expanding as well as fluctuating and volatile conditions of the world trading environment. The critical factor has been not the state of the international trading environment but the functioning of the domestic mainsprings of the growth process (such as competent governance, incentive structure for technological and organisational innovations, improvements in the quality of human resources, reliable and cost effective transport and communication facilities and stable and responsible macroeconomic management) which requires proactive approach on the part of the society, polity and economy. The basic point is that international trading opportunities can act as a powerful instrument in stepping up the rate of economic growth *provided* the internal mainsprings of the growth process are maintained and continually strengthened. There is, thus, an inextricable and indispensable link between progressive global integration of the Indian economy and the now widely accepted social objective of achieving and maintaining rapid economic growth in India. Rapid economic growth, in turn, has proved to be the tried and tested device for making a lasting dent on the longstanding problem of abject poverty. It does so through a rapid generation of gainful employment opportunities at progressively rising levels of productivity per worker. If India wishes to get out of the dubious distinction of hosting the largest number of

world's poor population, rapid growth is an absolute necessity and so is the imperative need for progressive integration with the global economy along with internationally competitive production structure in tradables. Progressive export orientation of the economy would yield not only very obvious efficiency gains in resource utilisation but also two other benefits which have not been so widely noted: One, because of the expansion of domestic market beyond international borders it would enhance and maintain the rate of return on productive investment and raise the rates of domestic savings and investment essential for rapid growth. Two, it would also impart resilience to the economy to successfully overcome external shocks.

Having established the imperative need, it is equally important to spell out, even though briefly (as this lies outside the scope of the present paper), the consequences. The benefits of improved living standards that can be brought about by opening up of the economy requires the society, polity and economy to accept the discipline that goes with the rules of the game governing international competition and the consequent need for maintaining competitive production structure in tradables which, in turn, is connected to the functioning of the domestic mainsprings of the growth process mentioned above. It is also important to emphasise that the process of shedding more than four-decade long protectionist past would require reallocation of resources away from the inefficient import-substitution-oriented and towards export oriented activities. This process of major structural adjustment is bound to be painful. Adequate safety nets are clearly essential for alleviating and minimising the pains of adjustment in the form of dislocation, unemployment and earnings disparities. But if these painful adjustments are necessary for putting the Indian economy on the higher growth path, the society and polity will have to evolve socially fair and credible mechanisms of cost-sharing and conflict resolution. Failure to do so would condemn the Indian economy to a low growth path and persistence of abject poverty. This is the challenge of globalisation. How the Indian society, polity and economy manage to grapple with it, only time can tell.

I Introduction

Liberalisation of restrictions imposed by the past government policy on markets and private sectors economic activities and progressive integration with the global economy have been the two major planks of the wide-ranging economic policy reforms in India since July 1991. Their objective has been to put the Indian economy on to a higher growth path. The efficacy of rapid growth for making a lasting dent on the long-standing problem of abject poverty has been widely recognised in India. Also recognised is the need to pursue domestic liberalisation with greater vigour. However, serious apprehensions still persist in the minds of policy-makers, bureaucrats, political leaders and radical intelligentsia on the imperative need to accelerate the pace of global integration. By placing the Indian merchandise export and economic growth experience in the Asian perspective, this paper seeks to bring out the powerful instrumental role that global integration has played in the rapid growth process of its East and South East Asian neighbours and that the Indian economy is better placed than most in effectively exploiting the powerful instrument which it had consciously denied itself in the past in its efforts at autarchic and hence internationally non-competitive industrialisation.

The present paper is a sequel to an earlier paper (Tendulkar (1999)) where, it was shown that historically, over the last nearly three centuries, mutually gainful global opportunities of exchange as measured by the volume growth of world merchandise exports had always grown faster than the volume growth of estimated real world GDP with a brief aberration of inter war period in the twentieth century; for a set of low income countries (including India), volume growth of their exports was strongly associated with their rate of economic growth under widely differing conditions (including considerable volatility) of the world trading environment during the post Second World War period; inference from (1) and (2), expanding world trade was helpful but not absolutely indispensable for the successful and powerful instrumental role of international trade in a developing country's growth process; more important precondition for the instrumental role of trade to work out was maintaining and strengthening the domestic mainsprings of the growth process as was pointed out by Kravis(1970) ; and the phenomenal (nearly 2-digit) growth rate of GDP experienced by a large economy like China in the last two decades was associated with aggressive participation in world trade and a significant rise in trade to GDP ratio. The Chinese case decisively destroyed the conventional myth that large countries did not participate in nor stand to benefit from international trade.

The present follow up paper proposes to place the Indian economic performance in respect of exports and rate of economic growth in an Asian perspective over the period from 1980 to 1996 and examine the association between export

performance and the rates of economic growth experienced by the selected Asian economies. For providing the Asian perspective, we have selected nine countries besides India. They include the Republic of (mainland) China with similar factor endowments to those of India, early industrialising countries of South Korea and Taiwan, India's immediate neighbours Pakistan and Bangladesh and South East Asian members of ASEAN : Thailand, Malaysia, Indonesia and the Philippines.

We have divided the entire period 1980-96 into three subperiods for an examination of export performance. These are 1980-86 (7 years), 1987-90 (4 years) and 1993-96 (4 years) covering two overlapping decades (1980-90) and (1987-96) in intertemporal comparisons. These overlapping decades have been referred as the first and the second period in subsequent discussion. It is useful to spell out the underlying rationale at the outset. The choice of subperiods is derived mainly from the Indian context of the study although it turned out to have other equally important and compelling justifications too.

The objective of the paper being an examination not just of export performance but its instrumental role in the growth process, the variations in the Indian growth performance over the period provided the basic rationale for the choice of subperiods. The decade (fiscal years) 1980-81 to 1990-91 was marked by the emergence of the Indian economy out of the low growth syndrome of the previous three decades. The average of the annual growth rates of gross domestic product (GDP) at factor cost (at 1993-94 prices) had been stuck around 3.5 percent per annum (pcpa henceforth) during the three decades 1950-51 and 1980-81 (calculated from NAS (2000)). It rose by more than two percentage points per annum to 5.8 pcpa during the decade of the nineteen eighties. This step up was partly fuelled by selective, hesitant and partial deregulation of industrial and trade policies but was associated with rising and unsustainable fiscal deficits financed by internal (public) and external (commercial) borrowings. The political instability and the Gulf war towards the end of the decade also contributed to rising current account deficits, pressure on the exchange rate, capital flight and dwindling foreign exchange reserves. The resulting crisis forced a major fiscal adjustment in the 1990s and wide ranging policy reforms involving liberalisation of industrial and trade policies since 1991. The average of the annual growth rate of GDP dipped to 3.8 pcpa during the three year period of fiscal contraction 1990-91 to 1992-93. This was followed by a spurt in the average aggregate growth rate at 6.6 pcpa during 1993-94 and 1998-99 which was higher than that during the decade of the 1980s. Our analysis of export performance omits the period of fiscal contraction in making intertemporal comparisons over the overlapping decades 1980-90 covering the period of deregulation and a consequent step-up in the aggregate growth rate and 1987-96 covering the period of economic reforms. It also stops in 1996 in order to

avoid the distortions in value of exports caused by the Asian currency crisis that followed.

It so happened that the world trade growth went through two distinct phases during the selected period. Following a crash in primary commodity prices after the second oil price hike in 1979, there was a virtual stagnation in the value of world exports during the seven year period 1980-86. This was followed by a spurt in growth rate of value of exports to 8 pcpa during 1987-96. The growth rate of the volume of world merchandise exports, too, slowed down from 3.68 pcpa (1973-80) to 3.48 pcpa (1980-87) before recovering to 5.70 pcpa (1987-96). The subperiods enable us to examine how the export performance of the selected Asian economies was affected by the changes in world trading environment. A compelling justification for periodisation also arose from the non-availability 3-digit SITC level export data for China for the period 1980-86.

The focus on the value of exports (in US dollars) in judging the export performance is derived from their ready availability, international comparability and the opportunity it offers for disaggregated analysis across SITC (Standard International Trade Classification) categories. Disaggregated analysis is presented for Extended Manufacturing (E-Mfg henceforth) products covering SITC codes 4 to 8 at two levels: for the six broad commodity groups or categories (resource-intensive, labour-intensive, scale-intensive, differentiated, science-based and miscellaneous products) as also analysis of competitiveness at 3-digit SITC level (for classification details see Table 7). In comparison with the standard definition of manufactured products (SITC 5 to 8 except 68) we decided to analyse exports of extended manufacturing to include also natural resource-intensive products (SITC 4 and 68). This departure from the standard definition is prompted by the fact that most industrialising countries at low levels of per capita income often started by initially exporting resource-intensive or labour-intensive products depending on their initial natural resource or labour abundant relative factor endowments. In our view, this extension has added richness to the analysis presented in the paper. Specific attention to E-Mfg exports is derived from two inter-related considerations. One, the increasing importance of manufacturing exports in total exports was observed in export-oriented economies during the post-second world war period (Reynolds(1983)). Two, inter-temporal fluctuations in manufacturing export earnings have been much less than those in primary exports. Consequently manufacturing exports provide much needed stability in foreign exchange earnings and contributes towards imparting potential viability in the balance of payments of the low income countries which has been critical to a sustained growth process.

The paper is organised as follows: the next section II examines the growth in U.S. Dollar earnings from the merchandise exports in the aggregate exports (all

SITC codes), in aggregate extended manufacturing (E-Mfg) exports (SITC 4 to 8) and for 5 broad categories of E-Mfg exports mentioned above according to factor-intensity and technology. This has been done for the set of 10 countries in this study as well as for world exports over the two phases 1980-87 of depressed world exports and 1987-96 of recovery as also over the entire period 1980-96. The objective is to put the Indian export growth in world perspective on the one hand and in the perspectives provided by some of its rapidly growing Asian neighbours on the other. The translation of growth in export earnings into world market shares are analysed in section III covering two overlapping decades: 1980-90 and 1987-96. The reflection of export growth and resulting market shares into changes in the commodity composition of the export baskets of the individual countries is discussed in section IV. The impact of changes in the average annual shares on incremental annualised exports by broad categories is examined in section V for two overlapping periods: between 1980-86 (7 years) to 1993-96 (4 years) for nine countries and between 1987-90 (4 years) to 1993-96 for ten countries with China added to the list. Sustained presence of different countries at 3-Digit SITC level is noted in Section VI. In the penultimate section VII export performance, competitiveness and associated economic growth performance have been analysed. Concluding observations appear in the final section.

II. Growth in Exports: 1980-96

The period, as mentioned in the introduction, is divided into two sub periods: The period 1980-87 (Table I) of depressed world trade and 1987-96 of renewed spurt in world trade (Table 2). The export performance is analysed in terms of growth in U.S. Dollar earnings for total exports (all SITC categories) , extended manufacturing exports (SITC 4 to 8) which , in turn , are divided into the following 6 broad categories:

1. Resource- intensive exports.
2. Labour-intensive exports.
3. Scale-intensive exports.
4. Differentiated exports.
5. Science-based exports
6. Miscellaneous (not classified elsewhere)

The classification is adapted from UN-ESCAP (1991) and the details at 3-digit SITC level can be found in Table 7. Broadly, resource intensive exports are based on primary agricultural or mineral raw material and labour intensive category covers light manufacturing mostly consumer goods. The scale intensive (homogenous) and differentiated categories of products are expected to be technologically more sophisticated than the first two categories whereas the science based products belong to the hi-tech variety. The UN-ESCAP study indicates that usually most countries started with either resource or labour-intensive exports depending on initial relative factor endowments and the relocation of entire manufacturing activity from developed to developing countries. Their progress to more sophisticated manufactures was observed to be varied and expected to be a function of both physical and human capital accumulation, pace of adaptation to new technologies, the quality control that they exercise and the access and ability to participate in international (buyer or seller driven) production chains in more sophisticated manufactured products.

Table 1 for the period 1980-87 indicates a very low growth rate and significant instability around that growth rate (as judged by the squared (product moment) correlation coefficient associated with the semi log trend regression) for total world exports covering all SITC categories (line 8,col(3)) . Growth rate is higher for Extended Manufacturing (E-Mfg) and extent of instability lower than that for total exports. In other words, foreign exchange earnings from manufactured exports were relatively much less affected than primary exports during this process of depressed world trade.

Turning to individual broad categories of world exports, a crash in primary commodity prices gets reflected in the lowest growth rate and the highest instability around it in resource intensive exports. Most sophisticated differentiated and science based products experienced above-average growth as well as much greater stability around them. Interestingly, labour-intensive exports recorded above-E-Mfg average growth of 5.9 pcpa.

In the world perspective, Indian exports recorded higher than world export growth rates (with greater stability) for total exports (5.5 pcpa), E-Mfg (7.4 pcpa), resource intensive (7.1 pcpa) as well as labour-intensive products (6.7 pcpa) with the most remarkable growth performance in scale-intensive products (14.3 pcpa) compared to very low growth (3.5 pcpa) in the corresponding world exports in the category scale intensive products. In other words, depressed primary prices did not affect India's resource intensive exports which grew faster than India's

labour-intensive exports. In the remaining categories, the performance was worse in comparison with world exports in terms of growth.

How did Indian export performance compare with other countries ? In the labour-intensive category which averaged 41 percent of India's E-Mfg exports during the period (and 23 percent of total exports)(calculated from Table 5.1) all other selected countries (except the Philippines) experienced double-digit growth rates varying between 10 pcpa (South Korea and Pakistan) and nearly 31 pcpa (Indonesia) compared to 6.7 pcpa for India. In other words, during the period of depressed world trade 1980-87, other Asian countries including notably South Korea and Taiwan managed to maintain their competitiveness and expand labour-intensive exports much faster than India. India's impressive growth rate of 14.3 pcpa in scale-intensive exports accounting for nearly 26 percent of E-Mfg exports was exceeded by Indonesia, Thailand and Malaysia. India's average E-Mfg export earnings of nearly US \$ 5 billion were exceeded by much smaller countries like Korea , Taiwan and Malaysia.

During the phase of recovery from 1987-96 (Table 2) our sample of selected Asian economies includes the Republic of China (China hereafter) for which SITC 3-digit level disaggregated export data are available only from 1987-onwards. The recovery in the growth of world export earnings covered all categories of E-Mfg as well as total exports (all SITC categories) the growth rates varying within a narrow range between nearly 8 to 10 pcpa.

Barring the resource intensive category, Indian export earnings did considerably better than the corresponding categories for the world exports. India's labour-intensive exports grew at impressive 12.5 pcpa during 1987-96 compared to 7.9 pcpa for the same category of world exports. However their average share in India's E'Mfg exports remained unchanged around 40 percent. In other words, labour intensive exports of India did not expand faster than all other categories of E-Mfg exports put together.

South Korea and Taiwan slowed down their growth in the labour-intensive category during this period whereas other Asian countries in the sample did atleast as well as or better than India. Indonesia posted 25 pcpa growth while China 17 pcpa. It is thus apparent that while India did worse than other Asian countries during the period 1980-87 of depressed world trade , it atleast kept pace with other Asian countries during the process of recovery of world trade. The net result was that other Asian countries like Indonesia , Thailand and Malaysia whose average E-Mfg exports were lower than those of India during 1980-87, managed to surpass India's U.S.Dollar export earnings by the end of the period. In other broad categories ,too, China, Indonesia, Thailand and Malaysia posted uniformly higher growth rates than India and were fast

establishing competitive advantage in the global chains in technologically more sophisticated product categories as judged by the growth rates of exports of differentiated and science-based products. A comparatively disappointing export performance of India during 1980-90 despite earlier start in industrialisation than other Asian countries is thus apparent. It is attributable to the inward oriented policies pursued by India.

Over the entire period 1980-96 (Table 3) Indian export growth turned out to be above the world average for all categories. However, Indonesia, Malaysia and Thailand posted much more impressive and stable growth rates in all the broad categories than India. Interestingly, South Korea and Taiwan did better than India with regard to growth in resource-intensive exports as well as that in technologically more sophisticated differentiated and science based products.

III. Share in World Exports by Broad Categories

Set of Tables 4.1 to 4.7 present the level of exports in 1980 and simple averages of the annual shares in world exports for 1980-86(7-years) , 1987-90(4 years) and 1993-96 (4 years) for total exports, E-Mfg exports and five broad categories of E-Mfg exports for the ten Asian countries including India under study. The last line of each table also provides the average size of the internationally traded world markets in terms of US \$ billion as reflected in the value of world exports in a given category.

With regard to total exports covering all the SITC categories (Table 4.1), India had a higher share than South Asian neighbours (Pakistan and Bangladesh). India's share creeps up very slowly from 0.52 percent (1980-87) to 0.57 percent (1987-90) and further to 0.68 percent (1993-96). Thailand starting with a lower average share in world exports than that of India during 1980-86, with a much faster growth in export earnings noted in section II, ended up with much higher share (1.16 percent) during 1993-96 than India (0.68 percent). However, China recorded more than doubling of its share from 1.88 percent (1980-86) to 4.26 percent (1993-96) over the period. Aggressive participation of a very large country (in terms of population) in the international division of labour is apparent.

Turning to the aggregate E-Mfg exports (Table 4.2), India expanded its share from about 0.3 percent (1980-96) to 0.5 percent (1993-96) over the sixteen year period when the size of the world market almost tripled-a better performance than that in total exports. However, much smaller countries like South Korea and Taiwan who had been posting phenomenal export growth since 1960s had acquired almost four times India's export earnings of \$4.5 billion in 1980 and increased their shares from 2 percent (1980-86) to 3 percent (1993-96). Even

other late entrant small countries like Thailand and Malaysia and a large economy like Indonesia almost tripled their shares in world E-Mfg exports. Most remarkable was the performance of China over the shorter period of a decade whose average share (3.7 percent) in E-Mfg exceeded that of South Korea and Taiwan in 1993-96. India's South Asian neighbours Pakistan and Bangladesh as also South East Asian outlier in ASEAN, the Philippines fared worse than India.

In the individual broad categories, the crash in primary prices during 1980-86 got reflected in the average annual world exports in the resource-intensive category (Table 4.3) turning out to be lower than their level in 1980. There was a recovery in the later years 1987-90 and 1993-96. India's share remained stagnant during the entire period and thus India remained unaffected by crash in primary prices as also their partial recovery.

In the traditional labour-intensive category (Table 4.4) India increased its international presence by raising the share from nearly 1.5 percent (1980-86) to a little over 2 percent by 1993-96. Starting with a sizable presence in 1980 and consistent with the slowdown of exports of South Korea and Taiwan in the labour intensive category (noted in the last section), the share of these countries in labour intensive world exports started declining during this period. China almost doubled its average share of labour-intensive exports over the decade from 1987-90 at 6.5 percent to a little over 12 percent during 1993-96. Indonesia, starting with a much lower base in 1980 and consequently a much lower share during 1980-86, posted remarkable expansion and exceeding India's share during 1993-96. What is remarkable in the Indonesian performance was that, being petroleum exporter it was adversely affected by the decline in oil prices over the period. However, it made it up by a phenomenal expansion in labour intensive manufacturing exports.

Consistent with the very high growth in scale-intensive exports noted in the last section, India succeeded in more than doubling its share in this category over the entire seventeen year period from 0.6 to 1.3 percent (Table 4.5). However, China, too, doubled its share over a much shorter period of a decade from 1.4 percent during 1987-90 to 3.3 percent during 1993-96.

In the remaining technologically more sophisticated and much faster growing categories of differentiated (Table 4.6) and science-based products (Table 4.7) India had negligible and stagnant share whereas China managed to double its share over the decade 1987-96.

Thus, a rise in India's world market shares in total E-Mfg as well as in labour and scale intensive categories, while impressive in the Indian context, had been

exceeded by small countries like Thailand and Malaysia as well as large economies like Indonesia and China .

IV. Changes in the Commodity Composition of Country's Export Basket

How did the growth rates (discussed in section II) and the resulting changes in world export shares (section III) get reflected in the commodity composition of the export basket of the countries in our study ? It may be noted that these changes which influence the viability of balance of payments also indirectly reflect the changing comparative advantage in exports that results from broad changes in relative factor endowments and consequent changes in the structure of domestic production. This section excludes Bangladesh where commodity composition available from Com.trade database contained many 'not available' entries. What one expects with rapid growth of exports is the declining share of resource-intensive or labour-intensive exports (with slower growing world markets) offset by the rising shares of any one or more categories of faster growing and technologically more sophisticated scale intensive, differentiated and science based exports. These changes are to be judged against the expansion in aggregate E-Mfg exports. Formally, these compositional changes reflect deviations of category specific export growth rates from the average growth rate for all E-Mfg exports. At a deeper level they reflect an interplay between a given country's efforts at changing comparative advantage and the overall expansion of opportunities for exchange in the world markets. A successful interaction with the global economy would be reflected in above-world average growth in export earnings often combined with a shift from resource or labour intensive to more sophisticated categories of exports. This, in turn, is expected to be associated with rapid rate of economic growth (Tendulkar (1999) and section VII).

Our focus would be on comparing compositional changes between the depressed world trade situation during the seven year period 1980-86 and initial recovery in the four year period 1987-90 (the first period hereafter) covering the decade 1980-90, on the one hand and between 1987-90 and four year period of 1993-96 (the second period hereafter) on the other. The first comparison would include nine countries including India while the second would also include China which has been aggressively seeking world markets. These comparisons would cover two overlapping decades 1980-90 and 1987-96. The first comparison between 1980-86 and 1987-90 would indicate how a country managed to emerge out of depressed world trade environment whereas the second comparison between 1987-90 and 1993-96 would reflect a country's success in taking advantage of expanding trade environment.

The average annual world exports of aggregate E-Mfg during 1987-90 were 1.81 times the average annual exports during 1980-87 whereas during 1993-97, their

ratio to the average during 1987-90 was 1.64 (calculated from Table 4.2). The growth which was faster during the first period because of the recovery from depressed world trade slowed down during the second period. All the countries in the study did better than the world average in both the periods. During the first period (using the line 8(a) of tables 5.1 to 5.9), India (2.16) was third from bottom among the nine countries with the Philippines and Pakistan recording slower growth than India. Thailand was at the top during the first period (3.87) followed by Indonesia(3.38), South Korea (3.35) and Taiwan (2.34) and Malaysia (2.29). Thus economies that had opened up in the 1970's during the volatile world trade environment managed to emerge out of depressed world trade much faster than the inward oriented economies of South Asia including India.

During the second period, India (with 1.98) was fourth from the bottom, this time Pakistan (1.97), South Korea (1.81) and Taiwan(1.66) doing worse than India. Malaysia with 3.86 was at the top followed by Indonesia (3.24), China(3.18), the Philippines(3.00) and Thailand(2.77). Aggressive export-drive of these four countries in E-Mfg exports in comparison with India should be obvious.

It should be clear that India's export performance in E-Mfg , while above the world average in both the periods, was far exceeded by small countries like Thailand and Malaysia as well as large countries like China and Indonesia. Aggressive export drive of these four countries in comparison with India needs no further comment.

Although India doubled the US dollar earnings from its E-Mfg exports during each period, a major change in the export composition (Table 5.1) took place only during the first period: an almost 10 percentage point rise in scale intensive exports but a constant share of labour intensive exports. Not much change in the composition of India's exports of E-Mfg products took place during the four years of the reform period 1993-96 than the four years (1987-90) preceding reforms.

Thailand with the fastest growth of E-Mfg exports during the first period also maintained a constant share (Table 5.3) of scale intensive exports around 20 percent and labour intensive exports around 40 percent like India but a 9 percentage point rise in differentiated products and a steep 13 percentage point decline in resource intensive exports between 1980-86 and 1987-90. During the second period, Thailand continued its diversification into more sophisticated scale-intensive, differentiated and science-based products while reducing the relative weight of labour-intensive category by more than 8 percentage points from 40 percent to 32 percent during the second period. Comparing Table 5.3 with 5.1, we find (lines 8(a)) that starting with \$ 2.6 billion or half the E-Mfg export earnings in comparison with India (\$ 5 billion) during 1980-

86, Thailand got on par with India during 1987-90 (\$ 10.2 billion) and by 1993-96 ends up at \$ 28.3 billion compared to \$ 14.3 billion for India.

The Thailand story holds in a slightly less dramatic form for oil producing Indonesia which more than tripled its export earnings from E-Mfg during each period from \$ 2.2 billion(1980-86) to \$ 7.4 billion (1987-90) and further to \$ 24.0 billion (1993-96) thus surpassing India's export-earnings from E-Mfg by a big margin like Thailand. During the first period (Table 5.5), there was a 13 percentage point rise in labour intensive exports partially offsetting 10 percentage point decline in resource intensive exports. During the second period, there was a steeper 20 percentage point decline in resource-intensive exports which was offset by a further rise in labour intensive exports and an impressive 9 percentage point rise in the exports of differentiated products. It may be noted that during the first period, average annual aggregate export earnings remained stagnant around \$20 billion (line 8(b),Table 5.5) when E-Mfg exports more than tripled. In other words, during the 1980s when primary commodity prices crashed, Indonesia managed to maintain its export earnings by aggressive drive in stepping up E-Mfg exports in general and labour intensive exports in particular. During the second period, aggregate export earnings doubled while E-Mfg exports more than tripled with a further diversification into differentiated products.

Another oil producing Asian country in our sample, namely, Malaysia (Table 5.4) was also affected by declining oil prices in the 1980s. Its average annual total export earnings increased by 69 percent when E-Mfg exports expanded by 127 percent. Unlike Indonesia, Malaysia had more than half of E-Mfg export earnings from differentiated products (presumably from Direct Foreign Investment from Japan, Taiwan and South Korea) during the period. Malaysia was the star performer during the second period when its E-Mfg exports registered an explosive growth of 286 percent which raised its aggregate exports by 175 percent and the share of E-Mfg exports in total exports rising from 58 percent to 81 percent (as can be seen from line 8(b)). Starting with E-Mfg exports at the same level as India 1980-86, Malaysia ends up with E-Mfg export earnings of \$ 52.4 billion in 1993-96 compared to \$ 14.3 billion for India. While the composition of exports across broad categories did not change significantly during1980-90, a 10 percentage point decline in resource intensive category offset by a rise of 9 percentage point rise in differentiated products where, as noted in the last section, the share in world exports more than doubled (Table 4.6). More interestingly, the share of labour intensive exports was never significant in the Malaysian export basket during the period under consideration even though it more than tripled its world market share (Table 4.4)in labour intensive exports from 0.34 percent (1980-86) to 1.07 percent(1993-96).

The third oil producing country in the sample, namely, the Republic of (mainland) China opened up to the global markets in the late 1970s. We do not have data on the commodity composition of China's exports during 1980-86. Table 4.1 indicates that its average of the annual shares of total (all SITC categories) exports increased only marginally from 1.88 percent during 1980-86 to 2.34 percent during 1987-90. However, during the second period from 1987-90 to 1993-96 (Table 5.2) it more than tripled its E-Mfg exports from \$ 34.3 billion to \$109.3 billion while total exports more than doubled. As a consequence the average share of export earnings from E-Mfg rose from 68 percent (1987-90) to 85 percent (1993-96). As noted earlier (Table 5.1), India merely doubled export earnings from E-Mfg whose average share in India's export basket increased from 70 percent to 75 percent over the corresponding period. The explosive export growth of E-Mfg exports of China compared well with that of Indonesia-another large and oil-producing country. Export basket of China across broad categories did not register major changes.

The export performance of Pakistan (Table 5.7) compared well with that of India in terms of growth but its export basket continued to be increasingly dominated by labour intensive exports.

In terms of growth in E-Mfg export earnings, the performance of the Philippines (Table 5.6) was the worst amongst the 9 countries in the sample during the first period but improved remarkably during the second period when like China, Indonesia and Malaysia, its average E-Mfg exports tripled with a doubling of the share of differentiated products in its export basket from one-quarter to nearly half during the second period with a 14 percentage point decline in resource intensive category and a 6 percentage point decline in the share of labour-intensive exports.

Finally, we turn to the miracle economies in the sample, namely, South Korea (Table 5.8) and Taiwan (Table 5.9), both the countries having more than 90 percent average share of E-mfg exports in total exports during 1980-86. Their average level of E-Mfg export earnings as well as their composition across broad categories during 1980-86 as also their growth during the first period was similar. Both the countries started reducing the share of labour intensive and scale intensive exports in their export basket while raising the share of differentiated and science based products. During the second period, while their E-Mfg export earning growth was above the world average, it was the slowest (66 percent for Taiwan and 81 percent for South Korea) between 1987-90 and 1993-96 among the countries in our study. In terms of composition of the export basket, a 14 percentage point decline in the share of labour intensive products in E-Mfg was offset by a similar rise of equal magnitude in the exports of differentiated products for South Korea from 38 to 52 percent during 1987-90 and 1993-96.

The changes in Taiwan were less dramatic but similar in direction. These two countries with their E-Mfg export earnings almost touching \$100 billion had completed the transformation of their economy from predominantly agricultural in the 1950s to an industrial one.

Thus, the doubling of E-Mfg export earnings by India in each of the two periods, while impressive by itself, had been far exceeded by Thailand, Malaysia and Indonesia whose export earnings from E-Mfg more than tripled. India's progress in diversifying the export-basket also appeared much more limited in comparison with faster growing East and South East Asian neighbours.

V. Analysis of Incremental Export Earnings

We have examined the growth in dollar earnings from exports by broad categories, and their translation into the changes in (averages of) annual shares in world exports as well as changes in the export basket of E-Mfg export earnings for a set of 10 countries including India. In this section we propose to examine the shares of these countries in incremental average annualised exports between the 1980-96 (7 years) and 1993-96 (4 years) for a set of nine countries (Table 6.1) and between 1987-90 (4 years) and 1993-96 for a set of ten countries (Table 6.2) (with China added to the sample). We examine the increments in (a) total exports, (b) E-Mfg exports and (c) labour-intensive exports and (d) country specific basket of incremental E-Mfg exports across broad categories. The focus on labour-intensive category is derived from the Indian context as India has been seeking market access in this category in international negotiations.

An examination of Table 6.1 indicates that

- (1) E-Mfg exports continued to dominate the overall expansion in total exports not only for the entire world but also for the nine countries covered in the present study (line 3)
- (2) India's share in incremental E-Mfg exports at 0.7 percent was better than its South Asian neighbours (Pakistan and Bangladesh) and the Philippines but was exceeded by all other countries including South east Asian neighbours, Indonesia, Thailand and Malaysia (line 4)
- (3) Incremental average annualised world labour-intensive exports amounted to US \$270 billion which accounted for barely 12.5 percent of incremental world E-Mfg exports. The nine countries in our study accounted for only 21.4 percent (sum of line 6). Thailand, Indonesia, Taiwan and South Korea had between 3.0 and 4.5 percent share each or two-thirds of the incremental labour-intensive

exports of the region. India with 2.5 percent share was the fifth after the above four countries.

(4) The percentage composition of the incremental E-Mfg exports in lines (7.1 to 7.5), indicates that labour intensive manufacturing exports were still important mainly in South Asia (India, Pakistan and Bangladesh), Indonesia and to some extent in Thailand. Other countries like South Korea, Taiwan and Malaysia had been moving away from labour-intensive manufactures and successfully into differentiated products. Eighty percent of India's incremental export basket was almost equally divided between labour-intensive and scale intensive products.

During the 1987-96 decade when we can assess the contribution of China according to broad categories, Table 6.2 shows that

(i) Share of labour intensive exports in total incremental world E-Mfg exports declined to 11.8 percent during 1987-96 (line 7.2 for the world) from 12.5 percent during 1980-90 (Table 6.1).

(ii) The ten countries together accounted for as high as 42.1 percent of incremental world exports of labour-intensive manufactures, nearly 53 percent of which had been claimed by China alone. If we add Indonesia, Thailand and India which together had 27 percent share of incremental world exports, the four countries accounted for 80 percent of the total incremental contribution by the ten countries (line 6). India's export share in incremental world exports of labour intensive products goes up from 2.5 percent (1980-90) to 4.5 percent (1987-96). This can be partly attributed to the economic policy reforms mentioned in the introduction.

(iii) Turning to the composition of incremental E-Mfg exports (rows 7.1 to 7.5) we note that the world exports had been moving increasingly towards differentiated products and South Korea, Taiwan and Malaysia had been penetrating into this expanding market with Thailand also getting into the select club.

(iv) Labour-intensive exports with a declining share in incremental world E-Mfg exports continued to be the mainstay of South Asian countries as well as China.

VI. Competitors at the 3-Digit SITC level

Our analysis so far has been confined to broad categories of E-Mfg exports. A rise in the world market share of the category has been interpreted as increasing competitiveness or penetration of the country in the export market in that

category. While this would be valid at that level of aggregation, it would be interesting to track down competitors at a more disaggregated level. Given our database, we can go only upto the 3-digit SITC level although this level itself constitutes aggregation over more detailed classification. Since we had a time series of exports at 3-digit SITC level for the countries in our study from 1980-96, we decided to adopt a two stage procedure.

In the first stage, for each country we picked those SITC codes where a given country's exports grew faster than the corresponding SITC level world exports. We take this to be an indicator of sustained presence in the international market. For this purpose we fit a semi-log time-trend regression to SITC level country specific exports as well as world exports to get SITC level exponential growth rates g_i^c and g_i^w for SITC code i for country c and world, respectively. We interpret the corresponding squared product-moment correlation coefficients (r^2) to be an indicator of stability of the estimated(descriptive) growth rate. In the first stage, we choose those codes where r^2 exceeded 0.9 and g_i^c exceeded g_i^w .

In the second stage, for each SITC code and for each year, we represent a country as having competitive advantage if the world export share of the country in that code was atleast as high as the share of the country in world E-Mfg exports. This indicator was suggested by Balassa as representing revealed comparative advantage(RCA). We use it to reflect the fact that the exports of the country in that SITC code was growing faster than its aggregate E-Mfg exports in that year.

We may note that we are using a stringent double criterion of ex-post established competitiveness of a country in a given SITC code. When a country enters in a given year and a given SITC code in the second stage, it may have been preceded by a process of getting established in the world market with RCA index less than unity. A country is also taken to exit when RCA index drops below unity after recording levels exceeding unity.

Table 7 presents the outcome of the application of the two-stage process described above. In each cell in Table 7 corresponding to a given SITC code and a given year, a country symbol is placed if the double criterion is satisfied. In view of the stringency of the criterion, most cells turn out to be empty. But wherever a cell has only one entry, we interpret it to reflect competitiveness with no competitors from among the countries chosen for comparison. This does not mean that countries (not considered in the study) would not satisfy the double criterion. Equally, whenever there is more than one entry, competition within the set of countries covered in this study is indicated.

A note of caution: since China did not have commodity breakdown of exports prior to 1987, its entry would not appear before 1987. This would not necessarily reflect absence of established competitiveness.

While the interested reader may get more from a detailed examination of Table 7, we only note major findings below.

In the resource-intensive exports, Indonesia has a sustained presence in one 3-digit SITC category, wood manufactures (code 632) where Thailand also competed during 1980-96 with China entering the fray in 1987. In the absence of data, it is not possible to confirm China's presence in the earlier years. India appears between 1993 and 1996 in paper and paperboard (code 641). It is also interesting to note that in the case of leather (code 611), Thailand maintained its presence through the period but joined by Taiwan in 1988 and South Korea in 1989. South Korea also had sustained presence in leather manufactures (code 612) where China enters and stays from 1992 onwards. In the processed animal vegetable oil etc. (code 431) Malaysia does not have competitors from within the set of countries considered here. Notice that South Korea and Taiwan maintained their presence in the resource-intensive leather manufactures despite moving into technologically more sophisticated categories of exports.

In the labour-intensive exports we have the largest number of non-empty cells and where India makes sustained presence in 5 out of 19 3-digit SITC codes since 1980. These were textile, yarn and thread (code 651), woven cotton fabrics (code 652) floor cover, tapetry etc (code 657), travel goods and handbags (code 831) and clothing not of fur (code 841). All these belong to the traditional textile exports. Barring the code 657 where India has a unique presence, in all the other categories, not only is Pakistan (651, 652, 841) among our competitors but also Taiwan (651), Thailand (651, 652, 831, and 841), Malaysia (652), South Korea (652) and China (841). It is interesting to note that South Korea, Taiwan and Malaysia, which had been phasing out of labour-intensive exports because of rising labour costs have managed to maintain their presence in selective labour-intensive categories as well. Indonesia entered into a variety of labour-intensive products in the 1980s: non-cotton woven textiles (653) textile yarn and thread (651) where it started competing with India since 1987, cutlery (697) and furniture (821) since 1989, footwear (851) since 1988 and other manufactured goods (899) since 1981. Dropouts, too, are noted. For example, Thailand from special textile products (855) since 1988, Malaysia from SITC codes (652) and (653) since 1981 and South Korea (652) since 1987.

In the scale-intensive category, Indian presence had been noted in the synthetic dyes, natural indigo and lakes (531) since 1980, pearls, precious and semi-precious stones (667) since 1981, rubber articles NES (629) since 1984 and gold

silverware and jewellery (897) since 1981. Over a shorter period since 1987 (for which data are available). China has established sustained presence in a good number of scale intensive products: organic chemicals (512), inorganic elements (513), synthetic dyes, indigo and lakes (531) where it competes with India, pottery (666), iron, steel , hoop and strip (675), iron and steel castings (679) since 1989, non-electrical wire products (693) articles of plastic NES (893) and toys, sporting goods NES (894). In the case of the last mentioned product, Pakistan, too, had established competitive advantage.

India does not have sustained presence in the case of more technologically advanced differentiated and science-based products. Table 7 indicates that the 1980s saw the entry of Taiwan in many differentiated machinery products across reasonably wide spectrum although Malaysia, Thailand and China also maintained sustained appearance. The last three countries along with Indonesia register their sustained presence in the science based products as well.

What emerges from the foregoing is that the other countries of Asia which opened up earlier than India have managed to upgrade their export-basket technologically faster than India and establish sustained presence in technologically more sophisticated products, thereby also reflecting the changes in their domestic industrial structure. This has to be placed in the context where India had a pioneer status in industrialisation among the developing countries in the 1950s. However, autarchic approach of that industrialisation inevitably led to technological backlog and international non-competitive character which was taken advantage of by other smaller and late industrialising countries of Asia by opening up their economies to trade faster than India.

VII. Export Performance, Competitiveness and Economic Growth

We have analysed the export performance of the ten Asian countries including India in terms of US dollar earnings in broad categories of E-Mfg exports as well as competitiveness at the 3-digit SITC level. The analysis of competitiveness indicated that countries at reasonably advanced stage of industrialisation such as South Korea and Taiwan still maintained sizable presence in certain labour intensive products despite rising labour costs (while predictably diversifying their export basket to technologically more advanced products). How do we explain this phenomenon? An explanation is readily available in the age-old Ricardian theory of comparative advantage which teaches us that international competitiveness in labour intensive products is derived not just from low wage rate per worker but low ratio of wage rate to average productivity, in other words wage cost in efficiency units rather than in crude terms of workers. This can be empirically approximated be a ratio of wage bill in gross output or gross value

added. When we divide both the numerator and denominator of this ratio by the number of workers we get a ratio of average (skill adjusted) wage rate to productivity per worker. Instead of interpreting the wage share in value of gross output as wage rate in efficiency units, the literature normally interprets it as a measure of labour intensity i.e. a lower wage share being associated with lower labour intensity, in other words, a lower wage share is interpreted either as a lower wage rate or smaller number of employed workers or both. On the contrary, a recent study by Bhavani and Tendulkar (2000) showed that the export oriented units among the modern small-scale industrial units in India were relatively larger in terms of number of workers but also reported a lower average ratio of wage bill to gross-output. In fact, a lower wage share reflected both a higher average (skill adjusted) wage rate and a larger number of workers per establishment because these were offset in export oriented units by a higher productivity per worker. This clearly indicated, following the traditional comparative advantage doctrine that a higher efficiency of labour (as reflected in productivity per worker) can enable payment of higher wage rate as well as employing larger number of workers. Notice that analytically a higher productivity per worker is obtained by (a) a higher capital intensity (given technology) which usually increases the scale of output per plant, or (b) adoption of a superior technology which also in general would raise the scale of output per plant or (c) better organisational and work methods improving efficiency. In all these cases, pressure comes either from changing factor prices (as in the case of (a)) or competitive pressures leading to (b) or (c) or both.

How do we assess competitiveness in international comparisons that we have undertaken? Our limited purpose is to explain the presence of prima-facie high labour cost economies in our study in the international markets for known labour intensive products. Following the logic of comparative advantage theory if we have internationally comparable estimates of average labour productivity in different countries, binary comparisons would reflect the bounds within which average wage rate can lie while maintaining competitive advantage. This is attempted in Table 8 in binary comparisons with India for other Asian economies covered in our previous discussion. Upper left hand box provides per capita GDP in purchasing power parity (ppp) dollars for 1980 and 1997 for nine countries including India and excluding Taiwan for which figures are not available. Upper right hand box provides male labour force participation rates(LFPR) which are more stable and comparable across countries than female participation rates. Dividing GDP_{PPP} by male LFPR, we get an approximation to average productivity per male worker indicated in lower left hand box. Lower right hand box gives indices of average per worker productivity in different countries with that in India taken to be 100. We interpret these indices to reflect the bounds within which average wage rate per worker could lie without adversely affecting competitiveness in labour-intensive products while

competing with India. For example, the index for Indonesia in 1980 was 183.39. This means that the average wage rate in Indonesia could be higher than that in India but so long as it did not exceed 83 percent on the average, Indonesia could maintain competitive advantage vis-à-vis India in labour intensive products. This is indeed a very crude measure but serves the indicative purpose at hand. The measure also reflects the effect of economic growth on labour productivity and consequentially on higher wage rate that can be paid without adverse effect on competitiveness.

In 1980, all the other Asian countries in the study except Bangladesh and China had higher average productivity than India. A lower level of GDP_{PPP} and slower growth in Bangladesh than India, the index remains considerably lower than 100 in 1997 at 70.5 . In other words, average wage rate in Bangladesh had to be lower by 30 percent or more in order to compete with India. In all other countries, it could be higher than that in India to the extent of even 7.8 times, for example, in South Korea without adversely affecting the competitiveness in labour intensive products. This helps explain the sustained presence of South Korea in labour-intensive products noted at 3-digit SITC level in the last section.

While examining the export performance during 1980-96 of the East, South East and South Asian selected in the study, we noted that all countries except the Philippines had recorded above the world average growth rates in value of total exports, E-Mfg exports as also in all the broad categories except the resource intensive exports over the entire period 1980-96(Table 3); the Indian export performance, while above the world average, was exceeded often by large margins by Indonesia, Thailand, Malaysia and China as also by South Korea and Taiwan; the countries outperforming India as noted in (b) registered not only impressive gains in market shares but also successfully diversified and technologically upgraded their export baskets.

The outperforming countries continued to maintain sustained presence even in labour-intensive products and compete with India in the world markets.

How was the associated growth performance of the countries in our study ? We are consciously using the term 'associated' rather than 'resulting' growth performance because, in our view, the relationship between world trade and economic growth is a two way mutually interactive one with multiple dimensions rather than unidirectional and uniquely causal. In fact, this is the basic reason why, in our view, there are no well settled and widely accepted empirical indicators of the openness of a country to international trade or integration with the world economy. In the present study, we propose to use a crude but readily available indicator, namely, current price value of exports plus imports (or value of exports only) as percent of gross domestic product at current market prices.

The former is termed trade ratio while the latter, export ratio. In interpreting these ratios some cautions are necessary. One, these are not structural ratios because the value of exports and imports are determined jointly with domestic consumption and investment in a macroeconomic equilibrium. Two, composition of exports and imports—whether they are predominantly final or intermediate goods as also the fact that the numerator contains gross value of traded outputs while the denominator refers to the gross value added would govern the magnitude of these ratios which could exceed 100. Three, the ratios would also be influenced by the distortions introduced by the trade policy.

What kind of behaviour should one expect for these ratios during the process of growth ? Kravis (1970) had noted a broad generalisation in the nineteenth century, namely, that those countries that experienced sustained economic growth, there was an associated rise in export ratio. This was also later confirmed for the post Second World War period by Reynolds(1983). On a priori grounds, this generalisation may be taken to apply in the early stages of growth because, as Nurkse(1953) pointed out long time back, that inducement to invest in a closed low-income economy was limited by the limited size of the domestic market or real purchasing power at low levels of per capita GDP. Limited degree of diversification in the commodity bundle underlying low level of real per capita GDP severely constrained the adoption of modern technology which invariably also expanded the scale of operation per plant and hence required tapping external markets to be economically profitable. This would lead to a rise in export ratio, provided, as Kravis(1970) pointed out, domestic mainsprings of the growth impulses functioned effectively. As GDP per capita in real terms increases during the process of economic growth, there is a continuous interaction between the changes in the commodity composition of domestic demand resulting from rising per capita real income, technological changes in the production structure and the changing opportunities for international exchange in multilateral trading framework (Kuznets(1966)). Given higher per capita real incomes in the Developed industrialised countries, exports would expand markets for domestic products in the early stages of economic growth in low income countries providing stimulus to investment and also raising export and trade ratios in the process. This would obviously require maintaining international cost competitiveness in tradables. However, in the late stages of economic growth when the real per capita GDP becomes very high in absolute terms, domestic market is likely to loom large relative to external markets and the trade and export ratio may decline. It is not possible to predict the direction of these ratios in the intermediate stages before affluence is achieved. Our *a priori* expectation, however, is that the trade and export ratios would show a tendency to rise during the process of rapid economic growth especially for countries with per capita real incomes at the lower end in the international league.

The last remark leads to a question: how 'rapid' is rapid economic growth ? The norms appear to have undergone major changes during the 20th century as compared to the 18th and 19th centuries. Kuznets(1973) mentions 3 pcpa as an average rate during what he called 'modern economic growth'(MEG) in the advanced industrialised countries of Europe and America between the middle of the 18th century till the 1950s. This was a quantum jump compared to the pre-MEG stage of those countries of Europe and America. Japan, South Korea, Taiwan since the 1950s and Thailand, Malaysia, Indonesia and China after them have grown twice or more as fast as the industrially advanced countries during their growth process.

In analysing the growth performance, in addition to the aggregate growth of GDP at constant prices, we also consider the growth rates of three major sectors distinguished by Kuznets, namely, agriculture and allied sectors (A-sector) intensive in non-reproducible natural resources (including cultivable land), industry or I-sector (covering manufacturing, mining, construction and utilities) which are intensive in reproducible tangible capital and finally, the residual heterogeneous services or S-sector which in advanced countries, has become hi-tech human capital intensive. Kuznets noted that typically A-sector has lower than and non-A sectors have higher than average productivity per worker. A structural transformation of GDP and workforce away from A-sector and towards non-A sector results in increasingly higher average productivity per worker and hence in per capita GDP. The agricultural growth rate is particularly important in densely populated agricultural economies of Asia with A-sector accounting for 50 percent or higher share of workforce because without improved productivity in this sector, overall growth rate cannot be increased. In addition to sectoral growth rate, we also consider rates of gross domestic savings and investment as macroeconomic indicators of internal and external resource mobilisation.

Table 9 presents trade ratio, export ratio and rates of gross domestic savings and investment (all at current prices) for the countries in our study and averages over the first three years 1980-82 and the last three years 1994-96 over the period 1980-96 that we have been analysing. It may be seen that the trade ratio and export ratio increased during the period for all the countries except South Korea and Taiwan (possible cases of domestic markets becoming increasingly important). Somewhat surprisingly, Indonesia too, indicated a decline (though only marginal in magnitude) in both the trade and export ratio which is difficult to explain. All the countries also recorded increases in the rates of gross domestic savings as well as investment with the exception of Taiwan and the Philippines. However, the increases registered by China, Indonesia, Malaysia, Thailand and South Korea are quite steep and often exceeding 30 percent of GDP by the end of the period as compared to much lower magnitudes in South Asia including India for the same period. All these countries of East and South East Asia had

undertaken aggressive participation in international division of labour through unilateral trade liberalisation and mainly driven by private investments.

How does the resource mobilisation in Table 9 get reflected in the growth outcomes? Table 10 provides sectoral and aggregate trend growth rates recorded by the countries covered in the study. The table also provides average of the annual rates of gross domestic capital formation at constant prices in order to derive an approximate measure of efficiency of capital utilisation in terms of incremental capital output ratio (ICOR) in the countries derived from the standard Harrod-Domar *expost* growth identity. The following findings emerge.

One, the South Asian Countries (India, Pakistan and Bangladesh) experienced both lower rates of investment and lower rates of growth than their East and South East Asian neighbours (except the Philippines). The latter set of countries registered aggregate growth rates exceeding 6.5 percent per annum (pcpa) which, as noted earlier, were associated with a rise in trade and export ratio (Indonesia being an exception along with South Korea and Taiwan) and in rates of gross domestic savings and investment at current prices (Table 9)

Two, with the exception of Taiwan, the rapid growth of East and South East Asian economies was more due to high rates of real investment than due to lower ICOR. In our interpretation, the inducement for such very high rates of (mostly private profit and market driven) investment recorded by these countries would not have been possible on the strength of the domestic market alone. External markets, as the earlier sections of this study argued, played a powerful instrumental role in maintaining investment incentive as well as rapid growth.

Three, we may also note low ICORs as well as rates of investment in Taiwan and Pakistan. In a very open economy like Taiwan, they reflect efficient utilisation of capital. In contrast, in Pakistan with low trade and export ratios, low ICOR appears to be more due to high rate of agricultural growth. Very high agricultural growth rate in China has contributed very significantly to China's superfast rate of growth.

Finally, a brief comment is called for in the case of Philippines. It is clearly an outlier among the rapidly growing economies of the South-East Asia. Unlike other countries of that region, its export performance was very badly affected by the depressed world trade environment during 1980-87 (Table 1). Although it improved remarkably during 1987-96 (Table 2), it did not get reflected in the rate of economic growth (Table 10). While this requires further analysis, a possible explanation in the Kravis (1970) scheme may lie in the poor functioning of the

domestic mainsprings of the growth process including problems of governance and other institutions.

A contrast with India emerges clearly from Table 10. In the Indian context, a study by P.N.Dhar(1989) had pointed out that constraints on Indian growth rate were derived not so much from inability to mobilise resources as from the constricting effects of discretionary direct control regime followed by the Indian policy makers aiming at autarchic industrialisation. In fact, the Indian (average of the annual) gross domestic savings rate (at current prices) more than doubled from about 9 percent during 1951-55 to nearly 18.5 percent during 1974-80 (calculated from NAS (2000)). However, the average of the annual growth rates of GDP at constant 1993-94 prices hovered around 3.5 pcpa and implicit ICOR exceeded 5. It is only since 1980-81 that the growth rate has been stepped up to 5.5 pcpa with ICOR of around 4 (Table 10). This was also accompanied by hesitant deregulation of controls on domestic investment and external transactions in the 1980s and more wide ranging liberalisation of controls since the policy reforms in 1991. These policy measures undertaken in the last two decades, while impressive in relation to India's past, in no way match its East and South East Asian neighbours who had opened up much earlier than India. The lesson is clear, India had consciously insulated itself from the global economy since the Mahalanobis strategy in the 1950s till the 1970s. Consequently its growth rate got stuck at 3.5 pcpa-what the late professor Raj Krishna described as the Hindu rate of growth. In the process it forewent the benefits of participation in global division of labour and frittered away the headlong start it had managed in industrialisation ahead of the East and South East Asian neighbours. It is only after China opened up in the late 1970s and established the benefits of global division of labour in terms of superfast growth rate that India started the corrective policy reforms very late in 1991. With the late entry into trade liberalisation, if India were to catch up with other countries trade liberalisation and other policy reforms need to be accelerated to step up the catching up process, not with advanced industrial countries but with India's own East and South East Asian neighbours who started with per capita GDP not different from that of India in the 1950s but now, thanks to much faster rates of economic growth than India, have per capita GDP several times that of India (Table 8). As is obvious from the discussion of export performance of these countries in the previous sections, they have used the powerful instrument of international trade in their rapid growth process. These high growth rates, by generating gainful employment opportunities with rising levels of productivity have contributed towards almost total eradication of abject poverty in these rapidly growing economies.

VIII Concluding observations

This paper sought to place the economic performance of India in respect of export earnings and economic growth in the Asian perspective provided by nine countries over the period from 1980-96 marked by depressed conditions in world trade (1980-87) followed by a recovery (1987-96). This enabled us to examine the impact of changes in world trading environment on country's exports and economic growth. The countries included the two early miracle economies (South Korea and Taiwan), two later ones (Thailand and Malaysia), two large economies in terms of population (China and Indonesia), one outlier of South East Asia (the Philippines) and two of India's subcontinent neighbours (Pakistan and Bangladesh).

We may start by highlighting the major findings :

(1) During 1980-96 period, growth of Indian export earnings turned out to be above the world average for all the broad categories of Extended-Manufacturing (E-Mfg) exports including double digit growth rates in labour and scale intensive products. However Indonesia, Malaysia and Thailand posted much higher and more stable growth rates than India. Interestingly, South Korea and Taiwan did much better than India in resource intensive products as well as technologically more sophisticated differentiated and science-based products (Section II). A better export performance than India in technologically more sophisticated products by South Korea and Taiwan requires to be underlined. India had a headlong start in industrialisation in the 1950s well ahead of these countries, but the persistently autarchic character of Indian industrialisation not only made it internationally non-competitive but also wasteful in scarce capital and foreign exchange, thereby slowing down the rate of economic growth.

(2) Faster than world average export growth in E-Mfg over 1980-96 resulted in a rise in India's share in world E-Mfg exports from an average of 0.3 percent (1980-86) to 0.5 percent (1993-96). By itself, this was remarkable because the world E-Mfg exports tripled over this period. However, much smaller countries like South Korea and Taiwan as also other late entrant smaller economies like Malaysia and Thailand more than doubled their shares in E-Mfg. China, too, doubled its higher share over a shorter period from 1987-90 to 1993-96 (Section III).

(3) Turning to the commodity composition of country specific export basket, India improved the share of E-Mfg significantly from 56 percent (1980-96) to 71 percent (1987-90) in total exports (all SITC codes) during the first period but only marginally further to 75 percent during 1993-96. The first period 1980-90 was marked by a rise in the share of scale-intensive exports. Share of labour

intensive exports remained constant around 40 percent. Other early trade liberalising and rapidly growing economies changed their export-basket increasingly towards differentiated and science-based products. This diversification reflected corresponding changes in their factor endowments and domestic production structure thereby reducing their vulnerability to volatile world trading environment in resource intensive exports and slower growing world exports of labour intensive products (Section IV).

(4) Analysis of incremental average annualised exports between 1980-86 and 1993-96 for nine countries excluding China showed that these countries accounted for 21 percent of corresponding incremental world exports in labour intensive manufacturing products. Four countries (Thailand, Indonesia, Taiwan and South Korea) had more than two thirds of the regional share with India (2.5 Percent) coming fifth. Ten countries including China over the shorter period between 1987-90 and 1993-96 had 42 percent share in world incremental labour intensive exports more than half of which was claimed by China. India with 4.5 percent share occupied the fourth position after China. Indonesia and Thailand (Section V).

(5) Analysis of competitiveness at 3-digit SITC level showed that India had sustained presence only in certain labour-intensive products in some of which South Korea and Taiwan too, had maintained their competitiveness. These two countries along with Indonesia, Thailand and Malaysia had established competitiveness in technologically more sophisticated differentiated and science-based products (Sector VI).

(6) Better export-performance than India by smaller economies like Thailand and Malaysia as well as large economies (in terms of population) like Indonesia and China was attributable to their earlier start than India, not in industrialisation but in unilateral trade liberalisation. Possibly realising the limited size of their domestic markets at low levels of per capita incomes, these countries had switched from import-substitution to export-orientation fairly early in their development process. India was the first in initiating industrialisation but the last in trade liberalisation. This difference got reflected in the more rapid growth rates of aggregate GDP (between 6 to 10 pcpa compared to 5 pcpa by India over (1980-96)) recorded by these countries. The difference in the aggregate performance would be sharper over the entire post-Second World War period. The powerful instrumental role of international trade that the rapidly growing Asian neighbours exploited needs to be emulated by India with great urgency because it has lagged behind these countries technologically, industrially and in terms of per capita GDP in purchasing power parity dollars (Table 8).

It was argued by Bhagwati and Desai (1970) three decades back and a decade ago by Dhar (1989) that the constraints on the Indian growth process were not primarily

due to lack of resources as India's efforts in resource-mobilisation as reflected in the rising rates of gross domestic savings and investment had been quite satisfactory. The constraints on growth had been paradoxically policy-induced. The constraints on Indian growth were located in the direct discretionary policies that constricted the operation of the functioning markets, came in the way of self regulating adjustment mechanisms of these markets, generated perverse and non-productive rent seeking incentive structure and thereby created a slow growing perpetual shortage economy. The Indian industrialisation was based on wasteful utilisation of scarce capital as well as foreign exchange, resultant high incremental capital-output ratio and slow growth. In the process a diversified industrial structure did get established in India but it was internationally noncompetitive as it was driven by perpetual shortages rather than by competition-induced efforts at cost-cutting and quality improvements. It was unable to absorb large and growing labour force in gainful activities and hence also turned out to be inequitable as the share of workforce in higher productivity organised activities had been stuck at around 10 percent for three decades or more. As high as 90 percent of the workforce had been condemned to lower productivity unorganised activities. This inegalitarianism of the development process has been noted by Lewis(1976) in a general context of dual economies. Hesitant and partial deregulation of policies in the 1980s did result in a step up in growth rate and a lower incremental capital-output ratio. However fiscal profligacy associated with it made that growth unsustainable. The wide ranging policy reforms since 1991 involving liberalisation and global integration have resulted in spurts of rapid growth thereby providing evidence that globalisation is capable of playing a positive instrumental role in India's growth process.

The rapidly growing East and South-East Asian neighbours of India have clearly established that economies, whether small or large (in terms of population) have improved their living standards by aggressively participating in the global division of labour and interacting with the global economy under expanding as well as fluctuating and volatile conditions of the world trading environment. The critical factor has been not the state of the international trading environment but the functioning of the domestic mainsprings of the growth process (such as competent governance, incentive structure for technological and organisational innovations, improvements in the quality of human resources, reliable and cost effective transport and communication facilities and stable and responsible macroeconomic management) which requires proactive approach on the part of the society, polity and economy. The basic point is that international trading opportunities can act as a powerful instrument in stepping up the rate of economic growth *provided* the internal mainsprings of the growth process are maintained and continually strengthened. There is, thus, an inextricable and indispensable link between progressive global integration of the Indian economy and the now widely accepted social objective of achieving and maintaining rapid economic growth in India. Rapid economic growth, in turn, has proved to be the tried and tested device for making a lasting dent on the

longstanding problem of abject poverty. It does so through a rapid generation of gainful employment opportunities at progressively rising levels of productivity per worker. If India wishes to get out of the dubious distinction of hosting the largest number of world's poor population, rapid growth is an absolute necessity and so is the imperative need for progressive integration with the global economy along with internationally competitive production structure in tradables. Progressive export orientation of the economy would yield not only very obvious efficiency gains in resource utilisation but also two other benefits which have not been so widely noted: One, because of the expansion of domestic market beyond international borders it would enhance and maintain the rate of return on productive investment and raise the rates of domestic savings and investment essential for rapid growth. Two, it would also impart resilience to the economy to successfully overcome external shocks.

Having established the imperative need, it is equally important to spell out, even though briefly (as this lies outside the scope of the present paper), the consequences. The benefits of improved living standards that can be brought about by opening up of the economy requires the society, polity and economy to accept the discipline that goes with the rules of the game governing international competition and the consequent need for maintaining competitive production structure in tradables which, in turn, is connected to the functioning of the domestic mainsprings of the growth process mentioned above. It is also important to emphasise that the process of shedding more than four-decade long protectionist past would require reallocation of resources away from the inefficient import-substitution-oriented and towards export oriented activities. This process of major structural adjustment is bound to be painful. Adequate safety nets are clearly essential for alleviating and minimising the pains of adjustment in the form of dislocation, unemployment and earnings disparities. But if these painful adjustments are necessary for putting the Indian economy on the higher growth path, the society and polity will have to evolve socially fair and credible mechanisms of cost-sharing and conflict resolution. Failure to do so would condemn the Indian economy to a low growth path and persistence of abject poverty. This is the challenge of globalisation. How the Indian society, polity and economy manage to grapple with it, only time can tell.

Table 1
Exponential Growth Rates of Value of total and Extended Manufacturing Exports in Selected Asian Economies
By Broad Categories

TIME PERIOD: 1980-87

S.N O.	CATEGORY	Exponential Growth Rate (%)								
		WO RL D	INDIA	S.Korea	Taiwan	Indonesia	Thailand	Malaysia	Philippi nes	Pakistan
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Resource Intensive	1.78 (0.1366)	7.07 (0.8521)	-4.1 (0.1134)	8.91 (0.7998)	17.72 (0.9201)	-7.46 (0.518 1)	-1.96 (0.0867)	-3.03 (0.2687)	13.4 (0.9217)
2	Labour Intensive	5.87 (0.5570)	6.72 (0.5733)	10.61 (0.8913)	11.43 (0.9220)	30.93 (0.9662)	16.46 (0.870 1)	12.17 (0.8458)	0.36 (0.0048)	10.19 (0.7157)
3	Scale Intensive	3.54 (0.4233)	14.33 (0.8690)	7.93 (0.8246)	13.99 (0.9445)	43.05 (0.8177)	18.51 (0.897 0)	22.19 (0.9339)	8.36 (0.5733)	1.2 (0.505)
4	Differentiated Products	6.64 (0.7482)	1.52 (0.0838)	20.16 (0.9502)	16.87 (0.9240)	-12 (0.3836)	19.06 (0.817 1)	16.57 (0.9482)	20.35 (0.9005)	-7.17 (0.2170)
5	Science Based	7.72 (0.7815)	1.21 (0.0461)	22.53 (0.8537)	10.95 (0.6698)	19.26 (0.8047)	11.07 (0.8542)	15.69 (0.8682)	-9.33 (0.5175)	9.35 (0.6236)
6	Miscellaneous	5.34 (0.5388)	-7.49 (0.3399)	12.17 (0.7585)	15.83 (0.9231)	36.59 (0.7150)	23.62 (0.764)	16.67 (0.8894)	2.11 (0.1498)	1.12 (0.0041)

7	Total Extended Manufacturing	5.51 (0.6366)	7.39 (0.7673)	12.96 (0.9578)	13.51 (0.9168)	21.32 (0.9482)	13.09 (0.7538)	8.72 (0.8233)	2.54 (0.3054)	10.46 (0.8177)
8	Total Exports	1.62 (0.1409)	5.46 (0.8143)	12.6 (0.9559)	12.92 (0.9132)	-5.23 (0.6850)	6.81 (0.6527)	4.81 (0.6122)	-1.63 (0.2161)	5.26 (0.5228)

Notes :

1. Extended manufacturing exports include SITC 4 and 68 in addition to the standard definition (SITC 5,6,7 and 8 minus 68).
2. For the composition of broad categories in terms of 3 digit SITC classification see Appendix.
3. Exponential rate of growth is the estimated slope parameter from the regression $\ln X = a + bt$, where X is the given category of exports and t is time.
4. Figures in bracket are squared correlation coefficients of the corresponding regression.

Source : World Bank : Com-Trade CD-ROM

Table 2
Exponential Growth Rates of Value of Total and Extended Manufacturing Exports in Selected Asian Economies
By Broad Categories

TIME PERIOD: 1987-96

S.N O.	CATEGORY	Exponential Growth Rate (%)									
		World	China	India	S.Korea	Taiwan	Indonesia	Thailand	Malaysia	Philippines	Pakistan
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Resource Intensive	7.69 (0.8872)	19.82 (0.9521)	6.56 (0.8577)	15.59 (0.9618)	7.28 (0.7286)	11.68 (0.9669)	14.03 (0.8959)	13.82 (0.9352)	4.70 (0.4791)	-0.02 (0.0001)
2	Labour Intensive	7.86 (0.9749)	17.30 (0.9797)	12.46 (0.9811)	1.53 (0.3613)	1.67 (0.6283)	24.90 (0.8864)	13.82 (0.8953)	18.95 (0.9776)	13.41 (0.7498)	12.24 (0.9474)
3	Scale Intensive	7.49 (0.9368)	21.46 (0.9830)	12.38 (0.9112)	10.18 (0.9713)	7.06 (0.9494)	16.75 (0.9599)	18.22 (0.9594)	20.51 (0.9652)	9.35 (0.9308)	10.6 (0.945)
4	Differentiated Products	9.48 (0.9787)	22.26 (0.9572)	12.16 (0.9455)	15.24 (0.9595)	13.06 (0.9914)	46.93 (0.9716)	29.31 (0.9863)	25.09 (0.9957)	28.31 (0.8864)	5.38 (0.2286)
5	Science Based	9.96 (0.9823)	23.24 (0.9923)	10.76 (0.7350)	7.34 (0.8938)	7.40 (0.8908)	32.66 (0.9868)	34.76 (0.8848)	34.26 (0.9590)	30.16 (0.8452)	11.17 (0.9712)
6	Miscellaneous	8.01 (0.9248)	13.97 (0.9445)	17.52 (0.9347)	10.74 (0.9058)	14.06 (0.9625)	25.98 (0.9741)	23.17 (0.9561)	23.88 (0.9299)	13.42 (0.9364)	13.30 (0.9094)
7	Total Extended Manufacturing	8.76 (0.9709)	19.37 (0.9914)	11.89 (0.9727)	10.09 (0.9501)	8.54 (0.9824)	19.64 (0.9735)	21.38 (0.9805)	22.54 (0.9956)	17.53 (0.8393)	11.37 (0.9512)

8	^g Total Exports	8.06 (0.9602)	15.51 (0.9895)	10.89 (0.9726)	10.05 (0.9517)	8.31 (0.9808)	12.57 (0.9946)	17.51 (0.9848)	16.90 (0.9963)	13.04 (0.9610)	8.77 (0.955)
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Notes :

1. Extended manufacturing exports include SITC 4 and 68 in addition to the standard definition (SITC 5,6,7 and 8 minus 68).
2. For the composition of broad categories in terms of 3 digit SITC classification see Appendix.
3. Exponential rate of growth is the estimated slope parameter from the regression $\ln X = a + bt$, where X is the given category of exports and t is time.
4. Figures in bracket are squared correlation coefficients of the corresponding regression.

Source : World Bank : Com-Trade CD-ROM

Table 3
Exponential Growth Rates of Value of Total and Extended Manufacturing Exports in Selected Asian Economies
By Broad Categories

TIME PERIOD: 1980-96

S.N O.	CATEGOR Y	Exponential Growth Rate (%)								
		WORLD	INDIA	S.Korea	Taiwan	Indonesi a	Thailand	Malaysi a	Philippine s	Pakista n
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Resource Intensive	7.16 (0.8859)	7.61 (0.9562)	11.65 (0.7538)	11.43 (0.9168)	15.88 (0.9702)	6.58 (0.5217)	7.24 (0.7025)	2.24 (0.3138)	6.72 (0.7573)
2	Labour Intensive	9.11 (0.9440)	12.08 (0.9520)	7.76 (0.8432)	6.52 (0.8559)	30.33 (0.9714)	19.09 (0.9549)	19.03 (0.9735)	11.01 (0.8159)	13.14 (0.9604)
3	Scale Intensive	7.82 (0.9274)	15.46 (0.9636)	11.04 (0.9722)	11.45 (0.9572)	25.75 (0.8837)	21.57 (0.9761)	24.55 (0.9804)	11.06 (0.9345)	7.70 (0.7470)
4	Differentiated Products	9.82 (0.9678)	10.15 (0.8906)	17.25 (0.9812)	16.64 (0.9814)	23.68 (0.7137)	21.95 (0.9656)	22.03 (0.9868)	24.53 (0.9524)	-2.92 (0.1525)
5	Science Based	10.77 (0.9707)	10.84 (0.8457)	16.94 (0.9038)	13.04 (0.9134)	23.49 (0.9510)	31.96 (0.9347)	31.18 (0.9638)	15.53 (0.6345)	10.90 (0.9494)
6	Miscellaneous	9.03 (0.9351)	5.15 (0.3743)	12.76 (0.9539)	17.25 (0.9782)	34.63 (0.9436)	29.33 (0.9595)	20.60 (0.9637)	9.59 (0.8715)	9.88 (0.6886)
7	Total Extended Manufacturing Exports	9.19 (0.9549)	12.14 (0.9657)	12.70 (0.9798)	12.16 (0.9706)	21.72 (0.9877)	21.94 (0.9656)	17.86 (0.9591)	12.37 (0.8475)	12.26 (0.9718)
8	Total Exports	7.27 (0.9016)	9.65 (0.9647)	12.46 (0.9807)	11.72 (0.9711)	5.58 (0.6035)	15.98 (0.9529)	12.41 (0.9348)	8.19 (0.8090)	8.98 (0.9414)

Notes :

1. Extended manufacturing exports include SITC 4 and 68 in addition to the standard definition (SITC 5,6,7 and 8 minus 68).
2. For the composition of broad categories in terms of 3 digit SITC classification see Appendix.
3. Exponential rate of growth is the estimated slope parameter from the regression $\ln X = a + bt$, where X is the given category of exports and t is time.
4. Figures in bracket are squared correlation coefficients of the corresponding regression.

Source : World Bank : Com-Trade CD-ROM

Table 4
Share in World Exports of Selected Asian Economies by Broad Categories
Averages for 1980-86, 1987-90, and 1993-96
(Simple Averages of Given Annual Shares)

Table 4.1: Percentage share of Country's Total Exports in World Total Exports

Countries / year	1980 Level (\$ Billion)	1980-86	1987-90	1993-96
India	7.51	0.52	0.57	0.68
China	18.01	1.88	2.34	4.26
Thailand	6.37	0.41	0.65	1.16
Malaysia	12.94	0.81	0.87	1.53
Indonesia	21.91	1.2	0.78	1.03
Philippines	5.75	0.3	0.27	0.36
Pakistan	2.59	0.16	0.18	0.19
S.Korea	17.45	1.5	2.21	2.52
Taiwan	19.84	1.59	2.33	2.42
Bangladesh	0.74	0.05	0.05	0.07
Total	113.11	8.42	10.25	14.22
Memo Total:				
Size of the Market (\$ Billion)	1857.59	1712.04	2664.17	4184.09

**Table 4.2: Percentage share of Country's Extended Manufacturing Exports
in
World Manufacturing Exports**

Countries year	/ 1980 Level (\$ Billion)	1980-86	1987- 90	1993- 96
India	4.46	0.29	0.4	0.51
China	N.A	N.A.	1.84	3.74
Thailand	2.28	0.24	0.5	0.88
Malaysia	5.03	0.54	0.67	1.58
Indonesia	1.21	0.19	0.37	0.73
Philippines	1.93	0.17	0.16	0.28
Pakistan	1.25	0.15	0.17	0.2
S.Korea	15.74	2.11	2.76	3.02
Taiwan	17.49	2.19	2.89	2.9
Bangladesh	0.5	0.05	0.05	0.08
Total	49.89	5.93	9.81	13.92
Memo Total:				
Size of the Market (\$ Billion)	1073.66	1104.71	1996.6 6	3284.4 4

**Table 4.3: Percentage share of Country's Exports in World's Exports
Product Category: Resource Intensive**

Countries year	/ 1980 level (\$ billion)	1980- 86	1987- 90	1993- 96
India	0.51	0.59	0.6	0.57
China	N.A.	N.A.	0.9	1.97
Thailand	0.78	0.5	0.35	0.47
Malaysia	2.84	2.8	1.97	3
Indonesia	0.82	1.37	2.36	3.22
Philippines	0.95	0.84	0.55	0.46
Pakistan	0.10	0.16	0.19	0.12
S.Korea	0.99	0.84	0.94	1.57
Taiwan	1.06	1.33	1.9	1.92
Bangladesh	0.06	0.08	0.08	0.07
Total	8.11	8.51	9.84	13.37
Memo Total: Size of the Market (\$ Billion)	108.41	95.32	156.32	236.15

**Table 4.4: Percentage share of Country's Exports in World's Exports
Product Category: Labour Intensive**

Countries year	/ 1980 Level (\$ billion)	1980-86	1987-90	1993-96
India	1.95	1.45	1.61	2.11
China	N.A.	N.A.	6.54	12.02
Thailand	0.72	0.75	1.54	2.07
Malaysia	4.08	0.34	0.55	1.07
Indonesia	0.16	0.27	0.85	2.3
Philippines	0.61	0.42	0.4	0.55
Pakistan	1.02	0.94	1.1	1.46
S.Korea	6.9	6.67	7.63	5.22
Taiwan	7.53	7.08	6.91	4.8
Bangladesh	0.42	0.31	0.3	0.52
Total	23.39	18.23	27.43	32.12
Memo Total :				
Size of the Market (\$ Billion)	138.04	140.72	261.74	413.18

**Table 4.5: Percentage share of Country's Exports in World's Exports
Product Category: Scale Intensive**

Countries year	/ 1980 level (\$ billion)	1980-86	1987-90	1993-96
India	0.91	0.56	0.94	1.28
China	N.A.	N.A.	1.4	3.28
Thailand	0.34	0.22	0.51	0.96
Malaysia	0.15	0.1	0.29	0.63
Indonesia	0.07	0.12	0.25	0.47
Philippines	0.18	0.09	0.11	0.12
Pakistan	0.05	0.04	0.03	0.04
S.Korea	3.72	1.85	2.21	2.66
Taiwan	3.07	1.9	2.63	2.62
Bangladesh	0.01	0	0.01	0.02
Total	8.50	4.88	8.38	12.08
Memo Total:				
Size of the Market (\$ Billion)	244.11	234.17	395.3	598.1

**Table 4.6: Percentage share of Country's Exports in World's Exports
Product Category: Differentiated Products**

year	1980 Level	1980-86	1987-90	1993-96
Countries	(\$ Billion)			
India	0.63	0.12	0.11	0.13
China	N.A	N.A.	0.72	1.47
Thailand	0.38	0.09	0.29	0.68
Malaysia	1.49	0.54	0.67	1.58
Indonesia	0.11	0.03	0.02	0.17
Philippines	0.13	0.05	0.08	0.29
Pakistan	0.03	0.01	0	0
S.Korea	3.44	1.47	2.16	2.66
Taiwan	4.74	1.39	2.31	2.89
Bangladesh	0	0	0	0
Total	10.95	3.76	6.36	9.87
Memo Total:				
Size of the Market (\$ Billion)	477.5	520.91	962.1	1657.33

**Table 4.7: Percentage share of Country's Exports in World's Exports
Product Category: Science Based Products**

Countries / year	1980 Level (\$ Billion)	1980-86	1987-90	1993-96
India	0.27	0.36	0.39	0.37
China	N.A	N.A.	1.18	2.65
Thailand	0.46	0.07	0.09	0.14
Malaysia	0.09	0.15	0.41	1.66
Indonesia	0.04	0.1	0.1	0.43
Philippines	0.03	0.04	0.02	0.08
Pakistan	0.03	0.05	0.05	0.05
S.Korea	0.55	1.09	2.27	1.94
Taiwan	0.76	1.06	1.56	1.34
Bangladesh	0	0	0	0
Total	2.23	2.92	6.08	8.67
Memo Total:				
Size of the Market (\$ Billion)	72.62	81.52	161.31	615.83

Table 5.1

Changes In Percentage Composition Of India's Extended Manufacturing Products Exports By Broad Categories 1980-86, 1987-90, 1991-92, and 1993-96

S.N O.	CATEGORY	AVERAGE SHARE (%)			
		1980-86	1987-90	1991-92	1993-96
1	Resource Intensive	11.20	8.83	7.15	6.35
2	Labour Intensive	40.96	39.34	43.16	40.87
3	Scale Intensive	25.71	34.57	32.43	35.96
4	Differentiated	12.10	10.01	9.83	9.90
5	Science Based	5.88	5.82	5.51	5.05
6	Miscellaneous	4.15	1.43	1.91	1.87
	Total Manufactured	100.00	100.00	100.00	100.00
7					
8	Memo Totals (\$ billion)				
	(a) Total Manufacturing Exports	4.985	10.769	14.273	21.326
	(b) Total Exports	8.828	15.181	19.276	28.392

Notes:

1. For the composition of broad categories in terms of 3-digit SITC classification see Appendix.

2. Simple averages over the periods mentioned in the column headings. They refer to the percentage composition of manufactured exports (lines 1 to 6), and average levels of exports in \$ billion (lines 8 (a) and 8 (b)).

Source: World Bank: Com-Trade CD-ROM

Table 5.2

**Changes In Percentage Composition Of China's Extended Manufacturing
Products Exports By Broad Categories
1980-86, 1987-90, 1991-92, and 1993-96**

S.N O.	CATEGORY	AVERAGE SHARE (%)			
		1987-90	1991-92	1993-96	1997
1	Resource Intensive	4.19	3.90	4.33	4.61
2	Labour Intensive	50.92	49.25	46.50	41.90
3	Scale Intensive	16.32	16.89	18.23	19.01
4	Differentiated	20.25	22.28	22.56	25.97
5	Science Based	5.63	6.03	7.07	7.11
6	Miscellaneous	2.96	2.12	2.10	2.17
	Total Manufactured	100.00	100.00	100.00	100.00
7					
8	Memo Totals (\$ billion)				
	(a) Total Manufacturing Exports	34.320	61.730	109.230	160.540
	(b) Total Exports	50.400	78.390	128.140	182.790

Notes:

1. For the composition of broad categories in terms of 3-digit SITC classification see Appendix.

2. Simple averages over the periods mentioned in the column headings. They refer to the percentage composition of manufactured exports (lines 1 to 6), and average levels of exports in \$ billion (lines 8 (a) and 8 (b)).

Source: World Bank: Com-Trade

Table 5.3

**Changes In Percentage Composition Of Thailand's Extended
Manufacturing Products Exports By Broad Categories
1980-86, 1987-90, 1991-92, 1993-96, and 1997**

S.N O.	CATEGORY	AVERAGE SHARE (%)				
		1980- 86	1987- 90	1991- 92	1993- 96	1997
1	Resource Intensive	19.46	5.77	3.22	4.68	4.41
2	Labour Intensive	39.91	40.73	35.06	32.07	20.69
3	Scale Intensive	19.02	20.39	17.99	22.97	15.15
4	Differentiated	18.52	27.68	34.97	32.98	50.91
5	Science Based	2.31	3.94	7.07	6.03	7.08
6	Miscellaneous	0.77	1.50	1.69	1.27	1.77
	Total Manufactured	100.0	100.00	100.0	100.00	100.0
7		0		0		0
8	Memo Totals (\$ billion)					
	(a) Total Manufacturing Exports	2.641	10.226	20.19 9	28.312	41.45 4
	(b) Total Exports	7.059	17.628	30.38 8	46.160	57.56 7

Notes:

1. For the composition of broad categories in terms of 3-digit SITC classification see Appendix.

2. Simple averages over the periods mentioned in the column headings. They refer to the percentage composition of manufactured exports (lines 1 to 6), and average levels of exports in \$ billion (lines 8 (a) and 8 (b)).

Source: World Bank: Com-Trade CD-ROM

Table 5.4

**Changes In Percentage Composition Of Malaysia's Extended
Manufacturing Products Exports By Broad Categories
1980-86, 1987-90, 1991-92, and 1993-96**

S.N O.	CATEGORY	AVERAGE SHARE (%)			
		1980-86	1987-90	1991-92	1993-96
1	Resource Intensive	28.33	23.53	14.74	13.69
2	Labour Intensive	9.81	10.74	10.81	8.57
3	Scale Intensive	6.72	8.44	9.38	7.32
4	Differentiated	51.07	51.06	55.99	59.77
5	Science Based	2.64	4.85	8.03	9.17
6	Miscellaneous	1.43	1.38	1.04	1.48
	Total Manufactured	100.00	100.00	100.00	100.00
7					
8	Memo Totals (\$ billion)				
	(a) Total Manufacturing Exports	5.940	13.590	26.430	52.410
	(b) Total Exports	13.820	23.380	37.550	64.480

Notes:

1. For the composition of broad categories in terms of 3-digit SITC classification see Appendix.
2. Simple averages over the periods mentioned in the column headings. They refer to the percentage composition of manufactured exports (lines 1 to 6), and average levels of exports in \$ billion (lines 8 (a) and 8 (b)).

Source: World Bank : Com-Trade CD-ROM

Table 5.5

**Changes In Percentage Composition Of Indonesia's Extended
Manufactured Products Exports By Broad Categories
1980-86, 1987-90, 1991-92, 1993-96, and 1997**

S.N O.	CATEGORY	AVERAGE SHARE (%)				
		1980- 86	1987- 90	1991- 92	1993- 96	1997
1	Resource Intensive	61.38	51.13	33.94	31.42	32.93
2	Labour Intensive	16.58	29.68	46.12	39.43	31.59
3	Scale Intensive	10.39	14.05	10.04	11.66	13.85
4	Differentiated	7.72	2.41	6.53	11.66	14.78
5	Science Based	3.76	2.26	2.88	5.11	6.12
6	Miscellaneous	0.17	0.48	0.49	0.71	0.73
	Total Manufactured	100.0	100.00	100.0	100.00	100.0
7		0		0		0
8	Memo Totals (\$ billion)					
	(a) Total Manufacturing Exports	2.191	7.412	15.00 7	23.983	25.46 9
	(b) Total Exports	20.41 0	20.772	31.40 6	42.912	53.22 0

Notes :

1. For the composition of broad categories in terms of 3-digit SITC classification see Appendix.

2. Simple averages over the periods mentioned in the column headings. They refer to the percentage composition of manufactured exports (lines 1 to 6), and average levels of exports in \$ billion (lines 8 (a) and 8 (b)).

Source: World Bank : Com-Trade CD-ROM

Table 5.6

**Changes In Percentage Composition Of Philippine's Extended
Manufacturing Products Exports By Broad Categories
1980-86, 1987-90, 1991-92, and 1993-96**

S.N O.	CATEGORY	AVERAGE SHARE (%)			
		1980-86	1987-90	1991-92	1993-96
1	Resource Intensive	41.76	27.44	15.57	13.48
2	Labour Intensive	31.39	32.55	35.55	26.17
3	Scale Intensive	10.63	13.19	9.86	8.77
4	Differentiated	13.64	24.79	35.88	48.40
5	Science Based	1.47	1.03	2.32	2.34
6	Miscellaneous	1.10	1.00	0.81	0.84
	Total Manufactured	100.00	100.00	100.00	100.00
7					
8	Memo Totals (\$ billion)				
	(a) Total Manufacturing Exports	1.900	3.180	5.750	9.540
	(b) Total Exports	5.150	7.120	9.310	15.400

Notes:

1. For the composition of broad categories in terms of 3-digit SITC classification see Appendix.
2. Simple averages over the periods mentioned in the column headings. They refer to the percentage composition of manufactured exports (lines 1 to 6), and average levels of exports in \$ billion (lines 8 (a) and 8 (b)).

Source: World Bank : Com-Trade CD-ROM

Table 5.7

**Changes In Percentage Composition Of Pakistan's Extended
Manufacturing Products Exports By Broad Categories
1980-86, 1987-90, 1991-92, 1993-96, and 1997**

S.N O.	CATEGORY	AVERAGE SHARE (%)				
		1980- 86	1987- 90	1991- 92	1993- 96	1997
1	Resource Intensive	8.87	8.73	5.18	4.22	3.43
2	Labour Intensive	80.10	84.98	89.06	89.76	89.38
3	Scale Intensive	6.22	3.42	2.97	3.31	4.24
4	Differentiated	1.94	0.43	0.52	0.32	0.45
5	Science Based	2.69	2.30	2.15	2.24	2.36
6	Miscellaneous	0.19	0.13	0.12	0.15	0.15
	Total Manufactured	100.0	100.00	100.0	100.00	100.0
7		0		0		0
8	Memo Totals (\$ billion)					
	(a) Total Manufacturing Exports	1.650	3.380	5.410	6.670	7.420
	(b) Total Exports	2.760	4.700	6.860	7.890	8.630

Notes :

1. For the composition of broad categories in terms of 3-digit SITC classification see Appendix.
2. Simple averages over the periods mentioned in the column headings. They refer to the percentage composition of manufactured exports (lines 1 to 6), and average levels of exports in \$ billion (lines 8 (a) and 8 (b)).

Source: World Bank : Com-Trade CD-ROM

Table 5.8

**Changes In Percentage Composition Of South Korea's Extended
Manufacturing Products Exports By Broad Categories
1980-86, 1987-90, 1991-92, and 1993-96**

S.N O.	CATEGORY	AVERAGE SHARE (%)			
		1980-86	1987-90	1991-92	1993-96
1	Resource Intensive	3.74	2.66	2.94	3.74
2	Labour Intensive	40.66	36.21	30.76	21.95
3	Scale Intensive	18.86	15.87	16.58	16.05
4	Differentiated	32.02	37.74	42.79	51.71
5	Science Based	3.82	6.61	6.10	5.63
6	Miscellaneous	0.90	0.90	0.83	0.93
	Total Manufactured	100.00	100.00	100.00	100.00
7					
8	Memo Totals (\$ billion)				
	(a) Total Manufacturing Exports	23.430	54.980	69.155	99.543
	(b) Total Exports	25.595	58.694	74.033	106.103

Notes :

1. For the composition of broad categories in terms of 3-digit SITC classification see Appendix.

2. Simple averages over the periods mentioned in the column headings. They refer to the percentage composition of manufactured exports (lines 1 to 6), and average levels of exports in \$ billion (lines 8 (a) and 8 (b)).

Source: World Bank : Com-Trade CD-ROM

Table 5.9

Changes In Percentage Composition Of Taiwan's Extended Manufacturing Products Exports By Broad Categories 1980-86, 1987-90, 1991-92, and 1993-96

S.N O.	CATEGORY	AVERAGE SHARE (%)			
		1980-86	1987-90	1991-92	1993-96
1	Resource Intensive	5.26	5.16	6.25	4.72
2	Labour Intensive	41.28	31.29	25.45	20.85
3	Scale Intensive	18.17	18.01	17.15	16.44
4	Differentiated	29.67	38.56	43.23	50.36
5	Science Based	3.62	4.38	4.50	4.04
6	Miscellaneous	1.99	2.59	3.42	3.59
	Total Manufactured	100.00	100.00	100.00	100.00
7					
8	Memo Totals (\$ billion)				
	(a) Total Manufacturing Exports	24.460	57.330	73.700	95.100
	(b) Total Exports	27.220	61.740	78.710	101.120

Notes:

1. For the composition of broad categories in terms of 3-digit SITC classification see Appendix.
2. Simple averages over the periods mentioned in the column headings. They refer to the percentage composition of manufactured exports (lines 1 to 6), and average levels of exports in \$ billion (lines 8 (a) and 8 (b)).

Source: World Bank : Com-Trade

Table 6.1
Incremental Total Exports and Extended Manufacturing Exports along with their major contributing
categories:
1980-86 to 1993-96

	Increment Between 1980-86 & 1993-96	World	India	Pakistan	Bangladesh	Philippines	S. Korea	Taiwan	Indonesia	Malaysia	Thailand
1	Total Exports (\$ Billion)	2472.0	19.6	5.8	2.1	10.3	80.5	73.9	22.5	50.7	39.1
2	E-Mfg Exports (\$ Billion)	2179.9	16.3	5.9	2.0	7.6	76.1	70.6	21.8	46.5	25.7
3	Share of (2) in (1) (%)	88.0	83.0	98.0	95.0	74.0	95.0	96.0	97.0	92.0	66.0
4	Share of country in World E-Mfg Exports	100.0	0.7	0.3	0.1	0.3	3.5	3.2	1.0	2.1	1.2
5	Labour Intensive Exports (\$ Billion)	270.3	6.7	4.7	1.7	1.9	12.3	9.7	9.2	3.9	8.1
6	Share of Country in World Labour Intensive Exports	100.0	2.5	1.7	0.6	0.7	4.5	3.6	3.4	1.4	2.9
7	Percentage Composition of Increment in E-Mfg										
7.1	Resouce-intensive	6.5							28.4	11.6	
7.2	Labour-intensive	12.5	40.9	79.3	90.0	25.0	16.2	13.7	42.2	8.4	31.1
7.3	Scale-intensive	16.7	39.2				15.2				
7.4	Differentiated	52.1				56.5	57.8	57.5	11.9	60.6	34.2
7.5	Science based	9.4								9.9	6.2

Notes :

1. E-Mfg : Extended manufacturing products. This includes in addition to the standard definition of manufacturing exports (SITC 5,6,7,8 minus 68) SITC 4 and 68.

2. Increment is over average of the annual exports over 7 years 1980-86 and 4 years 1993-96.

Table 6.2
Incremental Total Exports and Extended Manufacturing Exports along with their major contributing categories:
1987-90to1993-96

	Increment Between 1987-90 & 1993-96	World	India	China	Pakistan	Bangladesh	Philippines	S.Korea	Taiwan	Indonesia	Malaysia	Thailand
1	Total Exports (\$ Billion)	1519.9	13.2	77.7	3.3	1.6	10.3	47.4	39.4	22.1	41.4	28.5
2	E-Mfg Exports (\$ Billion)	1288.0	10.6	74.9	3.3	1.5	6.4	44.6	37.8	16.6	38.6	18.1
3	Share of (2) in (1) (%)	85.0	80.0	96.0	100.0	94.0	62.0	94.0	96.0	75.0	93.0	64.0
4	Share of country in World E-Mfg Exports	100.0	0.8	5.8	0.3	0.1	0.5	3.5	2.9	1.3	3.0	1.4
5	Labour Intensive Exports(\$ Billion)	150.0	4.5	33.3	3.1	1.3	1.5	2.0	1.9	7.3	3.0	5.1
6	Share of country in World Labour Intensive Exports	100.0	3.0	22.2	2.1	0.9	1.0	1.3	1.3	4.9	2.0	3.4
7	Percentage Composition of Increment in E-Mfg											

7.1	Resouce-intensive	6.2								22.6	10.2	27.2
7.2	Labour-intensive	11.8	42.4	44.5	94.7	89.6	23.0	4.4	5.0	43.8	7.8	28.2
7.3	Scale-intensive	15.7	35.3	19.1				16.3	14.1			
7.4	Differentiated	54.0		23.6				68.9	68.3	15.8	63.3	36.0
7.5	Science based	9.8					60.2				10.8	7.2

Notes :

1. E-Mfg : Extended manufacturing products. This includes in addition to the standard definition of manufacturing exports (SITC 5,6,7,8 minus 68) SITC 4 and 68.

2. Increment is over average of the annual exports over 4 years 1987-90 and 4 years 1993-96.

Table 7
Major Competing Asian Countries at 3-digit SITC level within Broad Categories : 1980-96

7.1 Resource Intensive Products
ALL THOSE COMMODITIES FOR WHICH GROWTH RATE IS GREATER THAN
THE CORRESPONDING WORLD GR.RT (WITH R-SQUARE >=0.9) AND RCA>=1

SITC PRODUCT	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
411 ANIMAL OIL AND FATS																		
421 FIXED VEG OILS,SOFT																		
422 FIXED VEG OIL NONSOFT																		
431 PROCESD ANML VEG OIL,ETC	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
611 LEATHER	TH	TH	TH	TH	TH	TH	TH	TH	T, TH,	T,T, H,S	T,T, H,S	T,T, H,S	T,T, H,S	T,T, H,S	T,T, H,S	T,T, H,S	T,T, H,S	T,T, TH,S
612 LEATHER MANUFACTURES	ETC S	S	S	S	S	S	S	S	S	S	S	S	S	C,S,	C,S,	C,S,	C,S,	C,S,
613 FUR TANNED,DRESSED																		
631 VENEERS,PLYWOOD,ETC																		
632 WOOD MANUFACTURES	TH, IN,	TH, IN,	TH, IN,	TH, IN,	TH, IN,	TH, IN,	TH, IN,	TH, IN,	C,T, H,IN	C,T, H,IN	C,T, H,IN	C,T, H,IN	C,T, H,IN	C,T, H,IN	C,T, H,IN	C,T, H,IN	C,T, H,IN	C,T, H,IN
633 CORK									,	,	,	,	,	,	,	,	,	,

MANUFACTURES					
641 PAPER AND PAPERBOARD		IN,	IN,	IN,	IN, IN,
661 CEMENT ETC BUILDING PROD					
662 CLAY,REFRACTORY BLDG PRD					
663 OTH NONMETAL MINERAL MFS		M,	M,		
681 SILVER,PLATINIUM,ETC					
682 COPPER			T	T	T
683 NICKEL					
684 ALUMINIUM					
685 LEAD					
686 ZINC					
687 TIN					
688 URANIUM,THORIUM,ALL OYS					
689 NON-FER BASE METALS NES					

Notes: Country Acronyms

I : India IN:Indonesia C:China PA: Pakistan S:South Korea M:Malaysia T:Taiwan TH:Thailand
P:Philippines

7.2. Labour Intensive Products
ALL THOSE COMMODITIES FOR WHICH GROWTH RATE IS GREATER THAN
THE CORRESPONDING WORLD GR.RT (WITH R-SQUARE ≥ 0.9) AND RCA ≥ 1

SIT	PRODUCT	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
65	TEXTILE	T,TH,PA,I	T,TH,	T,TH,	T,TH,	T,TH,P	T,TH,	T,TH,	IN,T,T	IN,T,T	IN,T,T	IN,T,T	IN,T,T	IN,T,T	IN,T,T
1	YARN AND THREAD		PA,I	PA,I	PA,I	A,I	PA,I	PA,I	H,PA,	H,PA,	H,PA,	H,PA,	H,PA,	H,PA,	H,PA,I
65	COTTON	M,TH,S,P	M,TH,	M,TH,	M,TH,	M,TH,	M,TH,	M,TH,	TH,P	TH,P	TH,P	TH,P	TH,P	TH,P	TH,PA
2	FABRICS,W OVEN	A,I,S	S,PA,I	S,PA,I	S,PA,I	S,PA,I,	S,PA,I	S,PA,I	A,I	A,I	A,I	A,I	A,I	A,I	,I
65	WOVEN	T,M,TH,IN	T,TH,I	T,TH,I	T,TH,I	T,TH,I	T,TH,I	T,TH,I	T,TH,I	T,TH,I	T,TH,I	T,TH,I	T,TH,I	T,TH,I	T,TH,I
3	TEXTILES NONCOTTO N	,S	N,S	N,S	N,S	N,S	N,S	N,S	N,S	N,S	N,S	N,S	N,S	N,S	N,S
65	LACE,RIBB 4	T	T	T	T	T	T	T	T,C,	T,C,	T,C,	T	T	T,C,	T,C,
65	SPECIAL 5	T,TH,S	T,TH,	T,TH,	T,TH,	T,TH,S	T,TH,	T,TH,	T,TH,	S	S	S	T,S,	T,S,	T,S,
65	TEXTILE ETC PROD		S	S	S		S	S	S						
65	TEXTILE 6	PA	PA	PA	PA	PA	PA	PA	C,PA,	C,PA,	C,PA,	C,PA,	C,PA,	C,PA,	C,PA,
65	FLOOR 7	I,	I,	I,	I,	I,	I,	I,	I,	I,	I,	I,	I,	I,	I,
	COVR,TAPE														

	STRY ETC														
69	STRUCTURES AND														
1	PARTS NES														
69	METAL														
2	TANKS,BOXES,ETC														
69	TOOLS T	T	T	T	T	T	T	T,C	T,C	T,C	T,C	T,C	T,C	T,C	T,C
5															
69	CUTLERY							C,	C,	C,	C,	C,IN	C,IN	C,IN	C,IN
6															
69	BASE MTL TH,	TH,	TH,	TH,	TH,	TH,	TH,	TH,C	TH,C	C,TH,	C,TH,	C,TH,	C,TH,	C,TH,I	C,TH,I
7	HOUSEHOL									IN	IN	IN	IN	N	N
	D EQUIP														
82	FURNITURE TH,	TH,	TH,	TH,	TH,	TH,	TH,	TH,	TH,	TH,IN	TH,IN	TH,IN	M,TH,	M,C,T	M,C,T
1													IN	H,IN	H,IN
83	TRAVEL TH,I	TH,I	TH,I	TH,I	TH,I	TH,I	TH,I	TH,I	TH,I	TH,I	TH,I	TH,I	TH,I	TH,I	TH,I
1	GOODS,HA														
	NDBAGS														
84	CLOTHING TH,PA,I	M,TH,	M,TH,	M,TH,	M,TH,	M,TH,	M,TH,	M,C,T	M,C,T	M,C,T	M,C,T	M,C,T	M,C,T	M,C,T	M,C,T
1	NOT OF	PA,I	PA,I	PA,I	PA,I	PA,I	PA,I	H,PA,	H,PA,	H,PA,	H,PA,	H,I	H,PA,	H,PA,I	H,PA,I
	FUR							I	I	I	I		I		
84	FUR ETC							C	C	C	C	C	C	C	C
2	CLOTHES,PROD														
85	FOOTWEAR	TH	TH	TH	TH	TH	TH	TH	TH,IN	TH,IN	TH,IN	TH,IN	TH,IN	TH,IN	TH,IN
1															
89	OTHER TH	TH	TH	TH	TH	TH	TH	TH	TH	TH	TH,IN	TH,IN	TH,IN	TH,IN	TH,IN
9	MANUFACT														
	URED														
	GOODS														

7.3. Scale Intensive Products
ALL THOSE COMMODITIES FOR WHICH GROWTH RATE IS GREATER THAN
THE CORRESPONDING WORLD GR.RT (WITH R-SQUARE >=0.9) AND RCA>=1

SIT PRODUCT	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
51 ORGANIC CHEMICALS								C	C	C	C	C	C	C	C	C	C	C
51 INORG ELEMENTS								C	C	C	C	C	C	C	C	C	C	C
51 OTHR INORGANIC CHEMICALS																		
51 RADIOACTIVE ETC MATERIAL																		
52 COAL,PETROLEUM ETC CHEMS																		
53 SYNT DYE,NAT INDGO,LAKES	I	I	I	I	I	I	I	C,I	C,I	C,I	C,I	C,I	C,I	C,I	C,I	C,I	C,I	C,I
53 SYNT DYE,NAT IN INDGO,LAKES	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
56 DYES NES,TANNING PRODS																		
58 FERTILIZERS MANUFACTURED															T	T	T	T
62 MATERIALS OF M RUBBER		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
62 RUBBER	S	S	S,I	S	S,I	S,I	S,I	S	S	S,I	S,I	S	S,I	S,I	S,I	S,I	S,I	S,I
9 ARTICLES NES																		

64	ARTICLES OF PAPER																		
2	ETC																		
66	GLASS																		
4																			
66	GLASSWARE																		
5																			
66	POTTERY								C	M,	M,C	M,C	M,C	M,C	M,C	C	C	C	C
6									C										
66	PEARL,PREC-,SEMI-P																		
7	STONE																		
67	IRON AND STEEL																		
0																			
67	PIG IRON ETC																		
1																			
67	IRON,STL PRIMARY																		
2	FORMS																		
67	IRON AND STEEL																		
3	SHAPES																		
67	IRN,STL	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
4	UNIV,PLATE,SHEE																		
	T																		
67	IRON,STEEL								C	C	C	C							
5	HOOP,STRIP																		
67	RAILWY RAILS ETC																		
6	IRN,STL																		
67	IRN,STL WIRE	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
7	EXCL W ROD																		
67	IRON,STL																		
8	TUBES,PIPES,ETC																		
67	IRN,STL CASTINGS									C	C	C	C	C	C	C	C	C	C
9	UNWORKD																		

7.4. Differentiated Products
ALL THOSE COMMODITIES FOR WHICH GROWTH RATE IS GREATER THAN
THE CORRESPONDING WORLD GR.RT (WITH R-SQUARE ≥ 0.9) AND RCA ≥ 1

SIT PRODUCT	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	
C DESCRIPTION	0	81	82	83	84	85	6	7	8	9	0	1	2	3				6	
CO																			
DE																			
711 POWER MACHINERY NON-ELEC																			
712 AGRICULTURAL MACHINERY																			
714 OFFICE MACHINES							T	T	T	T	T	T,M	T,M	T,M	T,M	T,M	T,M	T,M	
715 METALWORKING MACHINERY										T,T	T,T	T,T	T,T	T,T	T,T	T,TH	T,TH	T	T,H
716 MISC MACHINERY										H	H	H	H	H	H				
717 TEXTILE,LEATHER MACHNRY	T	T	T	T	T	T		T	T	T	T	T	T	T	T	T	T		
718 MACHS FOR SPCL INDUSTRYS																			
719 MACHINES NES NONELECTRIC																			
722 ELEC PWR MACH,SWITCHGEAR						T	T	T	T,M	T,M	T,M	T,M	T,M	T,M	T,M	T,M	T,M,C	T,M	C
723 ELECTR DISTRIBUTING MACH								TH	TH	T,T	T,M,	T,M,	T,M,	T,M,	T,T	T,TH	T,TH	T	T,TH
724 TELECOMMUNICATIO N EQUIP			M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		

Table 7.5 Science Based Products
ALL THOSE COMMODITIES FOR WHICH GROWTH RATE IS GREATER THAN
THE CORRESPONDING WORLD GR.RT (WITH R-SQUARE >=0.9) AND RCA>=1

SITC PRODUCT COD DESCRIPTION ES	19 80	19 81	19 82	198 3	198 4	198 5	198 6	198 7	198 8	198 9	199 0	199 1	199 2	199 3	199 4	1995	199 6	199 7
533 PIGMENTS,PAINTS,ETC																		
541 MEDICINAL PRODUCTS	ETC	I	I	I	I	I	I	I,C	I,C	I,C	I,C	I,C	I,C	I,C	I,C	I,C	I,C	C
551 ESSENTL OIL,PERFUME,ETC			TH	TH	TH													TH
553 PERFUME,COSMETICS,ETC																		
554 SOAPS,CLEANING ETC PREPS										IN	IN	IN	IN	IN	IN	IN	IN	IN
861 INSTRUMENTS,APPARATUS																		
862 PHOTO,CINEMA SUPPLIES																		
863 DEVELOPED CINEMA FILM																		
864 WATCHES AND CLOCKS	AND	TH	TH	TH	TH	TH	TH	C	C,T	C,T	C,T	C,T	C,T	C,T	C,T	C,T	C,T	C,T
891 SOUND RECORDERS,PRODUCRS			M	M	M	M	M	M	M	M,T	M,T	M,T	M,T	M,T	M,T	M,C	M,C	M,C
										H	H	H	H	H	H	,TH	TH	C

7.6. Miscellaneous Products
ALL THOSE COMMODITIES FOR WHICH GROWTH RATE IS GREATER THAN
THE CORRESPONDING WORLD GR.RT (WITH R-SQUARE ≥ 0.9) AND $RCA \geq 1$

SIT	PRODUCT	198	19	19	19	19	19	19	19	198	198	199	199	199	199	199	199	199		
C	DESCRIPTION	0	81	82	83	84	85	86	87	8	9	0	1	2	3	4	5	6	7	
CO																				
DE																				
571	EXPLOSIVES,PYRO																			
*	TECH PROD																			
599	CHEMICALS NES																			
*																				
698	METAL	T	T	T	T	T	T	T	T	T	T	T,C	T,C	T,C	T,C	T,C	T,C	T,C	T,C	
*	MANUFACTURES																			
	NES																			
895	OFFICE SUPPLIES	T	T	T	T	T	T	T	T	T	T,M	T,M	T,M	T,M	T,M	T,M	T,M	T,C	T,C	T,C
*	NES										C	,C	,C	C	,C	,C	C			
896	WORKS OF ART																			TH
*	ETC																			

Table 8

GDP Per Capita (PPP) and per worker productivity in Selected Asian Economies
Time Period : 1980-1997

Per Capital GDP (PPP)			Male Labour Force Participation Rates		
Country	1980	1997	Country	1980	1997
Bangladesh	388.04	1044.93	Bangladesh	0.53	0.57
China	446.18	3124.96	China	0.61	0.64
India	520.52	1511.54	India	0.56	0.58
Indonesia	886.42	3489.53	Indonesia	0.52	0.57
Korea, Rep.	2464.66	13577.89	Korea, Rep.	0.50	0.59
Malaysia	2345.50	8187.18	Malaysia	0.51	0.50
Pakistan	604.69	1561.87	Pakistan	0.52	0.52
Philippines	2091.56	3518.33	Philippines	0.51	0.52
Thailand	1478.25	6687.77	Thailand	0.55	0.64

Per Worker Productivity			Per Worker Productivity: Index with India=100		
Country	1980.00	1997.00	Country	1980.00	1997.00
Bangladesh	736.33	1820.43	Bangladesh	78.93	69.37
China	736.26	4905.74	China	78.93	186.94
India	932.84	2624.21	India	100.00	100.00
Indonesia	1721.21	6165.25	Indonesia	184.51	234.94
Korea, Rep.	4979.12	23130.99	Korea, Rep.	533.76	881.45
Malaysia	4626.23	16309.12	Malaysia	495.93	621.49
Pakistan	1158.40	3021.03	Pakistan	124.18	115.12
Philippines	4133.52	6831.72	Philippines	443.11	260.33
Thailand	2697.54	10400.89	Thailand	289.18	396.34

Notes: Per worker productivity is based on male labour force participation rates because of female labour force participation rates being

unstable overtime for the same country and non-comparable in concept and measurement across countries.

Sources :

Heston-Summers series

(2) World Employment Report, 1998-99.

Table: 9
Trade as a percentage of GDP

		Banglade sh	Indi a	Indones ia	Pakista n	Taiwa n	China	Thailan d	Malaysi a	Philippin es	Korea, Rep
1980- 83	AVG.	19.04	15.54	52.13	34.44	89.25	14.71	50.85	110.50	49.81	73.89
	S.D.	1.03	0.94	2.15	2.23	4.92	1.22	3.91	1.86	2.42	3.21
1993- 96	AVG.	26.19	23.38	51.77	36.73	77.31	38.37	83.87	181.58	78.87	63.73
	S.D.	3.59	2.09	1.70	1.57	4.71	5.19	4.42	12.76	8.28	5.05

Exports as a percentage of GDP

		Banglade sh	Indi a	Indones ia	Pakista n	Taiwa n	China	Thailan d	Malaysi a	Philippin es	Korea, Rep
1980- 83	AVG	4.78	6.30	28.74	11.92	46.98	7.67	22.75	52.99	22.34	35.01
	S.D.	0.49	0.20	3.95	1.18	1.11	0.98	1.83	3.10	1.66	1.12
1993- 96	AVG	10.07	11.26	26.30	16.37	40.45	19.59	39.41	90.20	35.51	31.20
	S.D.	1.16	0.56	0.38	0.22	2.48	3.49	1.67	5.73	3.91	1.81

Rates of Gross Domestic Investment and Gross Domestic Savings at current prices for the Selected Asian Economies
Time Period : 1980-96

	Avg.	Banglade sh	China	India	Indones ia	S.Kore a	Malaysi a	Pakista n	Philippin es	Thailan d	Taiwan
1980- 82	I/Y	0.154	0.337	0.224	0.262	0.302	0.342	0.188	0.281	0.284	0.275
	S/Y	0.022	0.342	0.192	0.329	0.253	0.301	0.078	0.235	0.237	0.311
1994- 96	I/Y	0.160	0.410	0.260	0.310	0.370	0.400	0.190	0.230	0.410	0.230
	S/Y	0.082	0.424	0.226	0.326	0.352	0.389	0.156	0.155	0.359	0.255

Notes : Aggregate imports , exports and GDP at current prices in local currency units.

Sources:

1. World Bank : World Development Indicators, 1999 for countries other than Taiwan.
2. Asian Development Bank : Key Indicators of Developing Asian and Pacific Countries, 1997 for Taiwan.

Table : 10
Economic Growth in Selected Asian Economies
Time Period : 1980-96

ITEMS	INDIA	CHIN	S.KO	TAIW	INDON	THAIL	MALAY	PHILIPP	PAKIS	BANGLA
GR-RT GDP	5.41 (0.99 53)	9.61 (0.99 41)	8.32 (0.995 9)	7.54 (0.992 2)	6.72 (0.9927)	8.14 (0.9878)	6.58 (0.9734)	1.85 (0.7209)	5.56 (0.9933)	4.18 (0.9954)
GR-RT AGRICULTURE	3.11 (0.95 55)	4.89 (0.96 87)	1.73 (0.687 1)	1.25 (0.863 7)	3.31 (0.9930)	3.71 (0.9814)	3.17 (0.9659)	1.37 (0.8589)	4.16 (0.9812)	2.30 (0.9328)
GR-RT INDUSTRY	6.40 (0.99 24)	11.75 (0.98 59)	10.59 (0.977 8)	6.21 (0.969 6)	8.07 (0.9818)	10.53 (0.9847)	8.68 (0.9758)	0.83 (0.1489)	6.62 (0.9934)	5.49 (0.9862)
GR-RT SERVICES	6.45 (0.99 84)	10.82 (0.97 84)	7.99 (0.995 9)	8.90 (0.983 8)	7.21 (0.9959)	7.75 (0.9887)	5.97 (0.9512)	3.14 (0.9362)	5.79 (0.9878)	5.31 (0.9883)
AVG. I/Y at constant prices	0.225	0.357	0.326	0.227	0.275	0.351	0.340	0.224	0.191	0.140
IMPLICIT ICOR	4.16	3.71	3.92	3.01	4.09	4.31	5.17	12.11	3.44	3.35

Notes:

1. Growth rates (GR-RT) are exponential growth rates per annum based on semi-log trend regression with squared multiple correlation coefficients in the brackets.
2. Average gross domestic rate of investment (I/Y) at constant prices over the period 1980-96 for all countries except Taiwan for which the period is 1981-96.

Sources:

1. For Taiwan the data is obtained from the Key Indicators, ADB Publication. Data cover the time period 1981-96.
2. For all other countries data the data is from WDI CD-ROM, 1999, World Bank. Data cover the time period 1980-96.

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References

1. Bhagwati, J. and P. Desai (1970): *India: Planning for Industrialisation; Industrialisation and trade policies since 1951*; Oxford University Press, London
2. Bhavani, T.A. and Suresh D. Tendulkar (2000): "Determinants of Firm level Export Performance: A case study of Indian Garments and Apparel Industry " Working Paper no. 81, Centre For Development Economics, Delhi School of Economics, Delhi.
3. Dhar, P.N. (1989): *Constraints on Growth, Reflections on Indian Experience*, Oxford University Press, Delhi.
4. Kravis, I.B. (1970): "Trade as a Handmaiden of Growth: Similarities Between the Nineteenth and Twentieth Centuries" *Economic Journal*: Vol. 80, no. 320 (December) pp 850-72
5. Kuznets (1973): "Modern Economic Growth: Findings and Reflections", *American Economic Review*, Vol LXIII No. 3 (June) pp 347-58
6. Kuznets (1966): *Modern Economic Growth : Rate, Structure and Spread*, Yale University Press, New Haven, Connecticut, USA.
7. Lewis, A.W.: "Development and Distribution", Ch. 3, pp 26-42 in A. Cairncross and M. Puri (ed): *Employment, Income Distribution and Development Strategy*, Essays in honour of H.W. Singer, The Macmillan Press, London, U.K.
8. NAS (2000): *National Accounts Statistics 2000*, Central Statistical Organisation, Government of India , New Delhi.
9. Nurkse, R. (1953): *Problems of Capital Formation in Underdeveloped Countries*, Basil Blackwell, Oxford, U.K.

10. Reynolds, L.G.(1983): "The spread of Modern Economic Growth to the Third World: 1850-1980 ", *Journal of Economic Literature*, Vol XXXI, No. 3 (September) pp941-80
11. Tendulkar, Suresh D.(1999): "Exports in India's Growth Process" Working Paper No.46, ICRIER,(January)
12. UN-ESCAP (1991): *Industrial Restructuring in Asia and the Pacific*, a study undertaken by the Secretariat, Economic and Social Commission for Asia and the Pacific, Bangkok, Thailand.

List of Participants

Prof. Suresh Tendulkar
Professor
Delhi School of Economics
Delhi-110 007

Dr. Ashok V. Desai
Consulting Editor
Business Standard
New Delhi

Dr. Arvind Virmani
Senior Economic Adviser
Deptt. of Economic Affairs
Ministry of Finance
New Delhi

Mr. David Sinate
Chief Manager
Export Import Bank of India
Mumbai

Mr. T.C. Venkat Subramanian
Executive Director
Export Import Bank of India
Mumbai

Mr. Shrawan Nigam
Economic Adviser
Ministry of Commerce & Industry
New Delhi

Prof. K. Sudaram
Professor of Economics
Delhi School of Economics
New Delhi

Prof. Badal Mukherji
Professor
Delhi School of Economics
Delhi

Prof. Amit Shovan Ray
Associate Professor
Jawaharlal Nehru University
New Delhi

Mr. Subir Bisht
Senior Vice President
ICICI
New Delhi

Mr. Surajit Bose
Manager
Reserve Bank of India

New Delhi

Mr. Atul Sobli
Deputy General Manager
Bharat Heavy Electricals Limited
New Delhi

Mr. G.A. Tadas
Deputy General Manager
IDBI
Mumbai

Dr. Isher Judge Ahluwalia
Director & Chief Executive
ICRIER
New Delhi

Prof. K.L. Krishna
Professor
ICRIER
New Delhi

Prof. Basudeb Guha-Khasnobis
Professor
ICRIER
New Delhi

Prof. Renu Kohli

Professor
ICRIER
New Delhi

Ms Arpita Mukherji
Fellow
ICRIER
New Delhi

Mr. Rajeev Ahuja
Fellow
ICRIER
New Delhi

Mr. Sunil Ashra
Fellow
ICRIER
New Delhi

Ms Mrinmayee Ray
Consultant
ICRIER
New Delhi

Ms Subhobrota Ray
Consultant
ICRIER

New Delhi

Mr. Jeffry Jacob
Research Assistant
ICRIER
New Delhi

Ms Smriti
Research Assistant
ICRIER
New Delhi

Ms Sonam
Research Assistant
ICRIER
New Delhi

Ms Dibyendu Mukherjee
Research Assistant
ICRIER
New Delhi

Mr Abhijit Sengupta
Research
ICRIER
New Delhi