CHAPTER-III
REVIEW OF EMPirical STUDIES

The chapter deals with some empirical studies relating to different aspects of competitiveness of the manufacturing products in trade. Some important studies have been reviewed below:

*Panchmukhi (1973)* made an attempt to examine the factors contributing to the relatively poor export performance of India compared to that of some other developing ECAFE countries by using revealed compared advantage (RCA) indices during the period 1962-67. The study found that India stood in a distinctly poor category in respect of export performance. The magnitude of the trade gap was quite high as compared to that of the other countries of the region. India’s trade relations with ECAFE countries indicated trade deficits of large magnitudes. The study found that countries with moderate or low degrees of controls on trade activity had achieved high growth rates of GDP. Countries with low degree of physical control on trade (quantitative restrictions) had also realized low growth of exports. He reported that India’s export structure seemed to correspond reasonably well with the import demand structure of Malaysia, Australia and Japan, whereas the pattern of India’s import requirement corresponded well with the export supplies of Japan and Australia. The study also showed that Japan’s export suppliers had diversified their production structure to suit the import-requirements of the ECAFE countries.

*Verghee (1979)* measured the changes in the international competitiveness of India during the period 1971-78. Different methods were used to measure the competitiveness of a country. These were (1) Relative unit value of exports of manufactures, (2) Relative consumer price index, (3) Relative wholesale price index, (4) Relative GDP deflator, (5) Relative unit costs (or labor costs) and (6) Relative profitability (the export deflator and
the GDP deflator, etc). Competitiveness of India in terms of these variables was analyzed with reference to 11 major competitors of India in world market for manufactures viz. Canada, Belgium, France, West Germany, Italy, Japan, Netherlands, Sweden, Switzerland, UK and USA. A rise in the index value of the various measures reflects a fall in the competitiveness of India and a fall in the index value reflects a rise in competitiveness. The study reported that there had been a progressive improvement in the international competitiveness of India during 1971-78. All the measures registered a significant improvement in the competitiveness of India in 1975. A significant part of the improvement in the competitiveness during 1971-78 was attributable to exchange rate changes of India and that of competitors against the US dollars. It was also observed in the study that the share of India in world exports declined steadily from 0.58 per cent in 1971 to 0.47 in 1974. It was also found that measures of competitiveness had a very high correlation with volume of exports. But the picture was not encouraging while viewing international competitiveness of India from the point of view of share of India in world exports, as share of exports of manufactures from India in the total world exports of manufactures remained virtually stagnant around 0.5 per cent during 1971 to 1977.

*Kelkar (1984)* examined the factors that sustained the remarkable growth of world trade in manufactures in the post-second world war period upto the early seventies. He argued that the multilateral tariff reductions carried out under the GATT system were not the major factor in stimulating growth of world trade in manufactures. Other important processes were at work in the international economy, especially in the international capitalist economy comprising advanced industrialized countries as well as the developing countries. Growth of international capital markets and capital movements or factor mobility was a major source of growth of world trade in manufactures. Declining transport costs or transactions cost which reduced the costs of transport of good over ‘time’ and ‘space’ were as significant as, (if not more significant) tariff reductions in stimulating world trade, which
finally increased productivity gains in export industries through accumulation and operations of transnational activities.

**Adams, Beheman, Boldin (1989)** examined the productivity competitiveness and export growth in developing countries for 1960-86. This analysis was based on the C-D production function and Feder two-way model. The study revealed larger output elasticity with respect to capital for the middle-income group than for the other low and industrial countries and the opposite pattern for the output elasticity with respect to labor. Thus computations support the Feder notion of differential productivity in the export and non-export sectors and of the spillover from the export sector to the non-export sectors.

**Yeats (1989)** studied trends of shifting patterns of comparative advantages in the exports of manufactures from developing countries by using labor indices during the period 1965-86. The study tested the use of factor proportions indices as a predictor of developing countries exports. The study showed that factor proportions data were a useful predictor of developing countries future exports. Developing countries significantly increased their total exports and share of labor-intensive products, while their shares for other non-fuel products registered persistent decline. This study noted that a relation existed between the level of labor intensity of a product and the export performance of developing countries. Developing countries generally exhibited a superior export performance in the most labor-intensive products.

**Herschede (1991)** examined export competitiveness of ASEAN, China, and the East Asian New Industrialized Countries (NICs) by using shift-share method. His study revealed that China had enjoyed a significant competitive advantage relative to the Asia (reference economy) in Japanese market. Out of ten SITC categories, China gained export competitiveness in seven categories compared with reference economy. ASEAN countries had a
competitive disadvantage in eight out of ten SITC categories and they also had an adverse industry mix and a less favorable industrial structure.

Yeats (1991) studied the comparative advantage of China’s foreign trade by using revealed comparative advantage (RCA) method during the period 1965 to 1987. An analysis of industry level RCA statistics showed that China developed a revealed comparative advantage in a relatively broad base of labour intensive manufactures and in this respect was similar in most of the newly industrialized Asian economies, except for several natural resource based products (particularly chemicals) where China had high RCAs. These results suggested that unless intra-industry trade is accentuated—countries in the regions have largely competitive export profiles. Japan (and to far lesser extent Singapore) appears to be the key to regional integration efforts as its revealed comparative advantage profile—which is heavily weighted in the direction of capital intensive exports is markedly different from China’s and those of other Asian economies. As far as inter-regional trade is concerned, the fact that many of the products in which China has a revealed comparative advantage face major forms of “hard Core” non-tariff barrier (NTBs) in the European Community (EC), Japan and United States which raises the possibility that external protection may constrain further development of some product lines. China’s RCA’s are presently shifting to semi-capital intensive products.

Diwan and Chakraborty (1993) empirically tested India’s competitiveness in the world economy during the period 1975 to 1989. He based his analysis on the techno-economic paradigms. Study showed that income elasticities of export and import demand for the new technology goods were higher than those for the total exports and imports in India. The share of new technology goods in trade was increasing, India was globalizing. The income elasticity of demand for exports was less than that for imports of the new technology goods and India was not becoming competitive. Even though India had been importing from abroad so much but
India had not been able to use these imports to build its production and export potential.  

**Leu (1994)** examined changing comparative advantage in East Asian economies by using revealed comparative advantage (RCA) method during the period 1966-1986. The study showed that revealed comparative advantage of Japan has systematically shifted to the old NICs and then to other developing economies. Since 1980, Korea, Taiwan, and Singapore have been competing with Japan in the US market while Singapore and Hong Kong have faced with stronger competition from Malaysia and Indonesia respectively.  

**Cooper (1995)** examined the role of technological factors in making developing countries making internationally competitive. The study showed that technological change plays an important part in the manufactured trade performance of some countries. It was also shown that the traditional sectors of developing country industrialization have been less exposed to innovative competitiveness than other. Although productivity growth was low in the period 1980-90 and structures of production did not change much, nevertheless the economy had a very high productivity growth rate over the whole period 1970-90. Due to low productivity growth path, countries need to find other ways to technological improvements.  

**Lee (1995)** examined competing hypothesis regarding Korean industrialization i.e. whether Korea followed neo-classical path of comparative advantage or whether Korea had anticipated comparative advantage by calculating revealed comparative advantage indexes of Korean manufacturing sector for 1965-92. The study revealed that Korea gained dynamic comparative advantage by focusing capital intensive industry within labor-surplus economy. Some products in light industry namely clothing, textile, footwear and travel goods and handbags have maintained high RCA’s since1965, but their competitiveness was on a downward trend. The heavy and medium products, however such as road vehicles, ships and boats,
electrical products, iron and steel products and metal product etc began to gain comparative advantages during 1975 to 1980 and their competitiveness was on an upward trend.

**Breschi (1996)** measured the competitiveness of Switzerland by using Revealed Comparative Index, Revealed Technological Advantage Index during the period 1980-93. It was revealed that Switzerland appears to devote relatively larger amount of resources to technological activities. However the performance at aggregate level in relative terms is not satisfactory. Because from the technological perspective, Switzerland is not specialized in high-tech sectors as it presents a declining share of exports in high-tech products. The study also showed that Switzerland tends to concentrate its technological advantages not in fast-growing and high-tech sectors, but mostly in medium-growing and stable patent classes. Looking at the relationship between trade and technological performance, study finds that there is a positive relation between the two variables. In chemicals and pharmaceuticals sectors, the relative technological advantage of Switzerland rests upon a few dominant firms which continuously accumulate innovative capabilities overtime. On the contrary, the relative weakness of Swiss in electronic sectors may be partly explained by high degrees of turbulence in these fields as compared with other industrialized countries.

**Hossain (1996)** examined the competitiveness of South Asian economies in the global trading system by using shift-share approach during 1974 to 1994. It was revealed that although the countries in South Asia appeared to be competitive to each other in international trade at aggregated level of analysis, but disaggregated level of commodity trade shows that in fact the countries are complementary to each other. This implies that there is a potential of expansion of inter-industry trade in the region. If the distortions in trade were removed and industrial activities are coordinated, the regionl would have a potential for economies of scale in regional integration.
Wilson and Mei (1996) examined export competitiveness of ASEAN economies by using shift-share approach for the period 1986-95. The study revealed that Singapore remained major market in USA and Japan in all produced categories except only for office and data machine. The strongest rival over this period has been Malaysia with significant positive export differentials in key manufacturing commodities. The Philippines and Indonesia have their own strengths.

Chen, Xu, and Duan (1997) examined the competitiveness of China’s export in agriculture food products during the period 1980-96 by using CMS model. The study revealed that China’s increase in agri-food exports during the period 1980-96 was largely due to the growth of world demand and the favorable market distribution effect.

Prasad (1997) made an in-depth analysis of India’s competitiveness in garments exports in the different foreign markets making use of Harmonized system data at the 8 and 3 digit levels. He also examined India’s competitiveness vis-à-vis its competitors, particularly China and Hong Kong and suggested strategies for India in the MFA phase-out period and post-MFA phase-out period, as India has fully utilized its quotas in most of cases except with Finland. Unit values of India’s exports are lower than most of its competitors. Evidence showed that in most of cases higher unit value has been at the cost of quantum of exports and thus there is no need to think of lowering of prices even in these markets. To counter the threat by competitors, particularly in the post-MFA phase-out period, strategic alliances with developed countries are needed. The protective quota should pave the way for these strategic alliances with export obligations to export to these quota markets. Foreign investments by these quota countries in garment industry of India can help inflow of modern technology and also help in retaining the quota markets. There is a need to redirect low growth items from traditional markets to new markets of Middle East and Africa, where high growth awaits them. In the garment industry any lethargic or
complacent attitude in the MFA phase-out period would be detrimental for India, as the competitors like China-Hong Kong and other NICs or Indonesia, Malaysia, Thailand or even Bangladesh and Sri Lanka can take an early lead. Further to forestall competition from developed countries in the post-MFA phase-out period, the strategic ventures should be started immediately which should also make developed countries to consider this as a better alternative than upgrading their technology drastically and competing with India. This would also benefit India which despite its natural comparative advantage in garments may not be able to compete effectively with a high-tech resource rich garments industry of developed countries.

Rose (1997) measured competitiveness in East Asia by using shift-share approach during the period 1974-1994. His study revealed that Japan’s exports are consistently more competitive than those of the four tigers; the four tigers export goods faster than Malaysia, Thailand and Indonesia. Asian competitiveness is both high relative to the rest of the world and it is growing. Chinese competitiveness is consistently much higher than expected.

Voon (1998) examined the export competitiveness of China and ASEAN in the US market by using shift-share approach during the period 1989-1993. His study revealed that China performed better than other four ASEAN countries in the US import market. Therefore these countries’ market share especially for Singapore would be further reduced by the entry of China in the US market. Total export of these ASEAN countries had increased substantially over this period because the trade creation effect was larger than the trade diversion effect. Among ASEAN countries, Malaysia performed better than Indonesia, Thailand, and Singapore. China has a structural advantage in more labor-intensive manufactures and ASEAN countries in less labor-intensive manufactures.

Aswichyono and Panestu (2000) analyzed the Indonesia’s pre-crisis export competitiveness and focused on the longer-term issues facing Indonesia in order to maintain export competitiveness, recover and sustain
growth during the period 1989-1998. Different measures were used to measure manufactured export competitiveness. These were factor intensity, revealed comparative advantage, decomposing RCA, trade mapping and constant market share analysis. The study revealed that rapid export growth and its subsequent decline prior to economic crisis of the late 1990s was due to cyclical factors. These cyclical factors were the depreciation of yen vis-à-vis the dollar; a decline in the prices of semiconductor due to a slump in demand and surplus capacity; and a decline in demand. The main structural factors in declining exports were increased competition, trade diversion to regions set up by such arrangements as North American Free Trade Agreement (NAFTA) and the similarity in export structures among the East Asian economies. Trade mapping analysis indicated that the slowdown in exports was also related to exports being destined to markets facing declining demand, rather than due to declining competitiveness. Constant market share (export) analysis indicated that while Indonesia specialized in products whose world demand was declining, the aggregate country effect was still positive, indicating that the mix of export destinations still led to markets where import demand was growing although the importance of exports going to growing markets declined from 54 per cent of the export differential during 1986-89 to only 20 per cent during 1989-96. A number of Indonesian industries increased their RCAs during this period: namely electrical machinery, paper and paper products, industrial chemicals and fabricated metal products and those experiencing declining RCAs, included wood, garment, petroleum refineries, nonferrous metal and tobacco.

Gloub (2000) examined the South Africa’s international cost competitiveness by using real effective exchange rates index during the period 1970 to 1998. Study showed that there has been a sizeable real depreciation in the last years. In absolute terms, South Africa’s wage level appears to be reasonably competitive against developed countries when productivity differences are allowed for. An increasing share of South Africa’s exports go to developing countries, particularly Africa and Asia.
Study found that South African unit labor costs are higher than almost all developing countries, ranging from low-wage countries like India and Indonesia to higher wage countries like Brazil and Korea. These results suggest that there is no room to increase real wages faster than productivity.

**Gurdev and Asokan (2000)** examined the competitiveness of Indian oilseeds by using nominal protection coefficient indices and domestic resource cost ratio (DRCR) during the period 1970-80 and 1999-00. Four major oilseeds-groundnuts, mustard, soybean and sunflower, which account for 90 percent of oilseed production in the country, were taken into study. Study revealed that import of oil at low tariff level has brought down the domestic prices of edible oils and oilseeds. This has adversely affected the economies of oilseed crops. Though net protection coefficient (NPC) was low for three out of four oilseeds studied indicating they were competitive to imports. The returns from the activity at the farm level were low therefore a further fall would make oilseed cultivation not a viable proposition. Further the domestic resource cost ratio (DRCR) indicated that the use of domestic resources was efficient and hence protection can be accorded to the activity.

**Lall (2000)** examined the export performance and competitiveness in the Philippines by using shift-share approach during the period 1980-1998. His study revealed that Philippines’ competitive base is very narrow, dominated by one product group and, within that, one product (semiconductors). Philippines specialize in low-end final assembly and testing. Problems facing the Philippines included the sustainability of the electronics export boom, overwhelming dependence on one activity, disturbing signs of labor-intensive exports, inadequate institutional support. Philippines should strengthen its competitiveness in other activities to diversify the export base; tackle widespread institutional weaknesses in the major support institutions, improve the education and training system, and improve the technological infrastructure system.
Lloyd and MacLarren (2000) examined the competitiveness of East Asian region in manufactures during the period 1980-1998 by using shift share approach. Study revealed that trade was dominant in manufactures in East Asian region. This high growth rate could be decomposed into three parts: country markets that have had a higher than average growth rate of total import, the concentration on goods that have had a higher than average growth rate of world market, and “competitiveness effect”. Competitiveness is affected due to underlying macro and micro-economic policies and aided by a real effective exchange rate and a relatively freer market access to its export destinations. East Asian countries were losing their competitiveness since 1997 due to currencies appreciation against the US Dollar, worsening market access to major markets, increased discrimination in these workers and less FDI to Asia (because of less open and less attractive market than in 1980s.)

Mahmood (2000) examined the export specialization & competitiveness of the Malaysian manufacturing during the period 1980 to 1996. This study provides an in depth investigation of shifting export specialization of the Malaysian manufacturing sector at three- digit standard international trade classification product category. The study uses the revealed comparative advantage approach to examine export specialization trends in manufacturing sector. It argues that the degree of competition among ASEAN countries will intensify with the implementation of ASEAN free trade area (AFTA) and emergence of other low cost producers in the region. The extent to which Malaysian can sustain or enhance its share in world’s manufacturing trade, however, depends on the capacity of its manufacturing sector to adjust to changing composition of world trade and compete on the basis of both price as well as non-price factors. The RCA patterns during 1994-98 show that categories such as office equipment, electrical & electronic goods, and telecommunication product (SITC 75, 76 & 77) have succeeded in maintaining their comparative advantage in the 1990s. While the changes in the export specialization patterns have been less
drastic, the ranking of various product categories, such as headgear/ non-text clothing (SITC 848), furniture & stuff furnishing (SITC 821) electric circuit equipment has varied during this period. The changing pattern of Malaysian manufacturing export specialization also highlights the ability of Malaysian manufacturing to move into relatively technological and high-skill labour intensive areas.

Muhammad (2000) examined the export competitiveness of Pakistan by using constant market share analysis during the period 1973-1995. The study revealed that commodity composition of traditional goods did not have any significant effect on direction of the export growth at least during the first 15 years and after that it followed a mixed pattern. The market distribution effect, in case of both traditional and non-traditional exports, was somewhat neutral throughout period. Pakistan’s traditional goods exports seemed to be performing better compared with non-traditional exports. However, in general, both types of exports had failed to show any significant competitiveness power in the world market. Pakistan could not take full benefit of its share in the world trade of textile exports whenever there was high demand for these products in the world market. The CMS analysis of Pakistan’s exports suggested that there was an improvement in the competitive position of both its traditional and non-traditional exports during the late seventies and eighties probably due to a boom in the world market. However, this incentive seems to have lost in the later period (1988-1995).

Carlin, Glyn and Reenen (2001) measured the export market performance of OECD countries by using relative unit labor costs and export market shares during the period 1970-1992. Study found that there were important influences on export market shares other than relative costs and “technology” factors having an effect on export performance. Export market shares are being affected by exchange depreciation for those countries which are most closely associated with the European exchange rate mechanism.
This study showed that sensitivity to labor cost is lower in high tech industries. Industry elasticities have increased, especially in industries subject to increasing product market competition.

Edward and Schoer (2001) measured the competitiveness of South African trade by real effective exchange rate (REER), unit labour cost, shift-share analysis, Revealed comparative advantage (RCA) during 1989-99. Study showed that competitiveness as measured by the REER, unit labour cost, export diversification and export orientation increased during the 1990s. However, the structure of trade has remained relatively capital and technology intensive compared to other middle income countries, export growth has been found to be mediocre compared to other dynamic emerging economies and employment in manufacturing has continued to decline. Some analysis at the aggregate level has been done, and the expected negative sign between REER and export flows is found. The study also showed that South Africa has a comparative advantage in natural intensive products. Paradoxically, South Africa is also shown to have a high share of exports falling within the human capital and technology intensive sectors relative to other middle income countries. While the share of unskilled labour intensive products in total exports has risen, the share is still low. The study suggested that South Africa has failed to make effective use of the comparative advantage that an abundant supply of labour provides. There is limited regional variation in the structure of exports, which may suggest that South Africa is not exploiting potential comparative advantages.

Haddad (2001) examined the export competitiveness of the Middle East and North Africa (MENA) during the period 1985-1997. In terms of export diversification index it was found that with the exception of Turkey, Tunisia, and Jordan, half of the exports of MENA countries were concentrated in a few commodities, viz. agricultural or raw materials and minerals. The major export item was crude petroleum and petroleum products. In terms of geographic diversification index, MENA countries’
Export markets were not diverse as more than 50 per cent region’s exports go to industrial countries, mainly in Europe. A geographic diversification index shows that Egypt, Turkey, Tunisia, and Jordan had the most diversified export markets in 1997. Kuwait, Qatar, Saudi Arabia and Libya had the least. In terms of revealed comparative advantage index, the highest RCAs for most countries of the region were in raw material and minerals fuels. In terms of intra-industry trade index (IIT) it was found that some MENA countries have lower IIT ratings in trade with the world as a whole, as opposed to trade with other countries in the region. This means that these MENA countries trade more with each other in similar goods than they do with the world at large, and thus have similar levels of industry specialization.

Yean (2001) examined the competitiveness of Malaysia by using shift share approach during the period 1980-1998. Study showed that Malaysia has relatively low comparative advantage for textiles. For high-technology products, Malaysia has relatively high comparative advantage. Resource-based products such as wood and wood products may be able to increase their market share in China.

ADB (2002) examined the East-Asian developing economies export competitiveness in pre-crisis 1990s by using shift-share approach. Study revealed that export growth of nine selected countries exceeded world growth rates from 1985 to 1995 by: (i) steadily upgrading the technology intensity of their comparative advantage structure over time; (ii) increasing competitive shares in global export markets; and (iii) specializing in rapidly growing export markets, both in terms of products and market destinations. Little evidence was found that these countries lost export competitiveness during the 1996 when export growth slumped leading up to the crisis. Only Thailand appeared to lose export competitiveness in 1996, and even in this case, the loss seems to be quite mild.
Dijk (2002) measured the economic performance of South Africa manufacturing sector in a comparative international perspective during the period 1970 to 1999. He had used purchasing power parities (PPPs); unit value ratios (UVRs), which are used to compute labor and total factor productivity levels for the total manufacturing and 13 manufacturing branches, relative to the USA. This study pointed out that there exists a considerable labor and total productivity gap between the U.S and South Africa, which is continuously widening over time. The overall increase in the gap is not due to a slowdown in South Africa labor productivity growth but rather because of an acceleration of U.S labor productivity growth. An international comparison showed that other countries also had experienced deteriorating performance levels. The comparative analysis also showed that South Africa was performing on a level between Indonesia and Brazil, almost equal to Mexico. This study also showed that on average, South Africa was competitive with the USA, albeit there were some industries which showed consistent relative unit labor costs above U.S level. Furthermore, a brief comparison with a study on Mexico indicated that South Africa was relatively uncompetitive with developing countries mainly because of high wage level.

Lord (2002) measured the export competitiveness of Vietnam by using real exchange rate, real cross exchange rates, trade and exchange rate transmission, shadow exchange rate, during the period 1990 to 2001. Study shows that in production costs, Vietnam’s unskilled labour costs are low relative to other ASEAN countries, and hence, utility costs undermine the potential competitiveness of business and create a disincentive to foreign investment. In Vietnam, real exchange rate movements in recent years would generally suggest a modest deterioration in Vietnam’s international competitiveness. A more appropriate indicator of competitiveness is the real cross-rates of Vietnam’s with its major trading partners. This study showed that using this indicator Vietnam’s competitiveness in the last few years has improved in the Chinese market and to a lesser extent, in United States,
while its competitiveness in the markets of ASEAN, Japan and the European Union has worsened. The loss of competitiveness in the European market is the consequence of the appreciation of the dollar relative to the Euro and the close association of the dong (currency) with the US dollar. To the extent that foreign market importers are responsive to relative price difference between Vietnam and competing suppliers to those markets, the demand for exports of Vietnam would be more favorable in the US and Chinese markets than in those of the Japan, the EU and the ASEAN-5. This study confirms expectations about the relatively high income-elasticities of export demand for Vietnam’s exports and, as such, the more favorable demand likely to exist in the US and Chinese markets for exports of Vietnam than that in the Japanese EU and ASEAN-5 markets.

Mitchell (2002) measured the international competitiveness of South Africa during the period 1992 to 1999. CMS model has been used to examine the internal versus external determinants of South Africa’s export performance relative to its market’s growth during this period. The analysis is focused on the major industrialized country markets. Since, South Africa does not enjoy any particular preferences here, and therefore its successes (or failures) in these markets may be clearly associated with comparative advantages, and ability to compete with the world’s low cost manufactures. Despite the relatively poor performance during the latter part of the decade, South Africa did succeed in “beating the market” during the longer period of 1992-99. The findings indicated that South Africa was able to flexibly react “rationally” to changes in relative market exchange rates in its manufactured exports. Applying CMS analysis, he examined the determinants of the loss of market shares which occurred during the last half of the last decade. It was found to be attributed primarily to internal policy or structural causes, rather than external factors associated with negative environment factors.

Nabli (2002) examined the competitiveness of manufactured exports of MENA countries during the period 1970 to 1994. This study showed that
MENA countries were characterized by a significant overvaluation of their currency during the 1970s and 1980s and that this overvaluation had a cost for the region in terms of competitiveness. To determine the overvaluation, they developed an indicator of misalignment based on the estimation of an equilibrium exchange rate on a panel of 53 countries, 10 of which are MENA economies. Although overvaluation decreased in the 1990s, probably due to flexibilization of the exchange rate regime in some MENA countries and to better macroeconomic management in other, misalignment nevertheless remains higher than in other regions. This may be explained by the countries’s delay in adopting more flexible exchange rates and in reforming their economies. In terms of competitiveness, the estimation of an export equation shows that manufactured exports have been significantly affected by the overvaluation. Countries that already had a more diversified economy benefited most from the decreased overvaluation in the 1990s. These countries also saw a continuous rise in diversification of their manufactured exports during the 1990s, resulting from the significant decline in exchange rate misalignment.

Arghyrou and Bazina (2003) examined the competitiveness of Greece covering the period 1960-1990. Two suitable competitiveness indicators Balassa Trade Index (1974) and Adjusted Grubel-Loyed Index (1990) were used to examine competitiveness. Original disaggregated data sets and Cointegration techniques were applied to identify the specific commodity categories. The study reveals that Greece had lost its competitiveness in 1990s in the products in which it had earlier comparative advantage in 1980s after the accession to EU countries. Greece participation in EU has affected the level and composition of Greek imports and exports. The import-penetration from EU partners observed in the 1980s had continued in the 1990s. Exports had not been positively influenced at any stage by Greece’s participation to the EU and they experienced a negative structural shift in the 1990s. The study reveals that as a result of accession to EU, trade creation and trade diversion in imports from the EU and third
countries were stable and mutually offsetting. There exists no positive EU effect on exports. In the 1990s a negative structural shift in exports to Germany (the most important buyer of Greek exports) and Netherlands has taken place. These findings suggest that the widening of the Greek trade deficit in 1990s was mainly due to the exports stagnation rather than the imports’ side of trade balance.

Assanie, Chadha, Sharma and Woo (2003) measured the comparative advantage of Canada’s exports to India by using RCA index, Gini-Hirschman index, RXA (revealed export advantage) during the period 1985-2000. This study found that Canada’s export growth to India was statistically lower than export growth to many emerging markets and also found that the share of raw materials in Canada’s exports to India was almost twice the share of this product category in Canadian exports to other emerging markets. Among OECD countries, Canadian exports to India were less concentrated than exports to India by other ‘commodity’ exporters such as Australia and New Zealand. Study showed that Canada’s export advantage appears to lie in 32 industries. Many of these industries are traditional areas of Canadian exports to India and 25 industries exhibit a moderate disadvantage for Canadian exports to India relative to (OECD countries). This study showed that Canada’s competitive position declined substantially over the past decade.

Chowdhury (2003) examined the price competitiveness of Australian exports in the face of continuing decline of Australian currency value using annual data for 1970-98. A general to specific error correction model has been used to explain the major factors determining the export performance of Australia. It has been found that the depreciation of the real exchange rate significantly improves Australia’s export competitiveness in the long-run and enhances the export performance of the country. Increased world income and a lower relative price of exports to its major competitors in the world market significantly promote the growth of export sector of the country.
Among others, the most vital factor greatly improving Australian export performance is removal of trade barrier. Australian exports grew as a share of GDP in the 1980s and 1990s. The new flexibility of the economy has been reflected in the capacity of domestic firms to compete with imports, and of exporters to find new market for their products. Openness in trade regime has strengthened Australia’s export effort by improving price competitiveness and enhancing global market share and thus providing new opportunities for economic growth, employment generation and living standards.

**Husain (2003)** examined the export competitiveness of Pakistan by using RCA index and real effective exchange rate during the period 1980-1998. Study found that Pakistan’s fears about deindustrialization resulting from integration and liberalization were unfounded and misplaced. Study also reveals that Pakistan enjoyed competitive advantage in several products which were fast growing in the global markets and had high demand potential. But Pakistan’s export competitiveness could not be left to the whims of market forces alone but managed strategically. Study found that the biggest challenge facing Pakistan was a mindset of both the government officials as well as private businessman from an adversarial to trusting relationship.

**Inklaar and Wu (2003)** measured the competitiveness of the Japanese manufacturing sector relative to the United States over the period 1980-2000. By using industry-specific unit value ratio (UVRs) they showed that labor productivity in Japanese manufacturing lags considerably behind the U.S in terms of both output per person employed and output per hour worked. Japanese manufacturing branches had not kept up with the strong productivity growth surge in the U.S after 1995. This showed that in 1995 the electrical machinery branch was still more productive in Japan than in the U.S. In 2000, the U.S had established a clear lead in this branch. The relative Japanese decline was not only seen in the ICT-productivity
industries, such as computers and electrical machinery but also in such diverse branches as wearing apparel, transport equipment. Japanese manufacturing had also suffered from rising unit labor cost levels. The long-run trend of a strengthening Yen had eroded Japanese cost competitiveness in nearly all branches between 1980 and 2000 (although ULC (Unit Labor Cost) levels had declined from 1995 onwards due to more favorable exchange rate development and moderate wage growth in Japan). Still in 2000 unit labor cost in Japanese manufacturing was still 27 per cent above the U.S level. In comparison, in 1980 Japanese unit labor cost stood at only 82 per cent of the U.S level.

James and Movshuk (2003) examined the basis for a free trade agreement (FTA) between Japan and the Republic of Korea by comparing export patterns of these two countries with that of a non-member-Taiwan by using revealed comparative advantage (RCA) indices. Study revealed that starting from the early 1990s the comparative advantage of both Korea and Taiwan were no longer concentrated in labor-intensive products, but were increasingly clustered in products with a high technology intensity, thus becoming more similar to the Japanese RCA pattern. Further, Study reveals that there was an even more significant correlation between recent patterns of Korean and Taiwanese comparative advantage and previous patterns of Japanese comparative advantage. The correlation coefficient between export RCA indices of Korea and Taiwan was already as high as 0.65 in 1980, and has changed little by the late 1990s. With such a similarity among the export patterns of Japan, Korea, and Taiwan, there appears to be substantial potential for trade diversion for Japan and Korea to form FTA.

Raut (2003) investigated whether Indian industries had significantly higher value-added growth in the early eighties. Did the export performance, competitiveness and the total factor productivity growth rate of Indian industries improve in the eighties as compared to the seventies? He also examined the effects of firm size, competitiveness and productivity on
exports during the period 1975-86. The degree of competitiveness was measured by the learner index (price cost-margin). It was found that the value-added growth rates had significantly improved in all industries with the exception of the textiles industry; the growth rate of value added in the metal products industry, however, remained negative during the eighties. The competitiveness had positive effect on exports only in the lighter industries (food and beverages, and textiles). But the partial liberalization policy of 1980 did not improve the competitiveness of the food and beverages industry, which could have contributed to higher manufacturing exports. Productivity growth, however, did not improve in the eighties nor did it have positive effect on exports of any industry.

Reichel (2003) analyzed Jordan’s international competitiveness since the late 1960s as well as evaluated the success of various forms of German Jordanian business cooperation under a trade theory and policy perspective. He has also tried to study an industry-based analysis of export competitiveness with the help of revealed comparative advantages (RCA) indices. The study reveals that the main problem of the Jordanian trade sector was the massive trade deficit during the period 1990-2001, which was primarily financed by current transfers (development aid; workers remittances). Though exports and imports were generally rather well diversified, Jordan did not show the trade pattern typical for developing economies of this income group. The ratio of exports was 64.8 per cent with respect to less developed trade partners, but only 16.6 per cent with respect to industrialized trade partners. Only a small fraction of total exports (3.8 per cent) was directed to member states of the European Union. Thus there seemed to be a significant lack of export competitiveness in the markets of OECD countries. From a commodity viewpoint, the structural weakness of Jordan’s economy was characterized by a heavy dependence on imported capital goods. By using Thirwall’s concept of balance of payment constrained growth in measuring international competitiveness of Jordan, it was found that Jordan economy was found to be competitive and balance of
payments position of Jordan improved in line with the increased competitiveness with a time lag of several years. In 2002 the fraction of secondary section exports has impressively risen to approximately 68 per cent. This was reflected in an increase of intra-industry trade. The Jordanian figure for 1992/94 was 0.248 up from 0.207 in 1984/86 which was above the Arab average. Thus, export growth reflected the transition from a resource dependent developing country to a semi-industrialized country over the past 30 years. The chemical products were the most dynamic commodities, followed by miscellaneous manufactures, and machinery. A one percent increase in Jordan’s trading partners’ income has increased Jordanian exports in these sectors by approximately 2.9 per cent. The export dynamics of traditional primary sector exports (food, beverages and crude materials) was clearly below average. However dynamic exports were price-sensitive. This points to a significant degree of competition intensity which may result from the existence of a large number of suppliers from other countries in the region. Jordan still has comparative advantage in exporting primary sector commodities, followed by miscellaneous manufactures and chemical exports rank. Both secondary sector industries exhibit strong comparative advantages.

Adams (2004) measured the competitiveness of China in the world economy during the period 1992 to 2002. RCA, exchange rates and unit value ratios were being used to measure the competitiveness of China. This study showed that China has a steadily increasing share of world exports than other East Asian countries. China’s exports of manufactured products continued to increase rapidly at rate of 6.9 per cent per year in line with world market growth, more than in other East Asian countries; high technology exports were increasing at a rate of 15 per cent per year. This study also showed that China’s RCA was above 1, close to 2 during 1980-1995 period. China’s exports grew at a rate many times the global averages growth during 2000-2002. Study also showed that devaluation of the Chinese currency vis. a vis. US dollars was responsible for the extraordinary growth
of Chinese exports. By setting up of foreign firms, Chinese goods have become highly competitive in western markets and account for a growing market share. Therefore FDI has been a critical consideration in improving China’s ability to produce goods for the world market.

Klasra and Fidan (2004) examined the international competitiveness of Turkish exports in comparison to its neighboring countries by using market share and revealed comparative advantage (RCA) during the period 1980-2001. Study showed that the export share of each country to the market of neighboring countries (as a group) remained mixed as some countries lost their share and some gained more share of export. Ukraine and Romania appeared as dominant countries in terms of their export shares and were capturing 77 and 12 percent of the markets of neighboring countries in 2001. Turkey, though, increased its export share in the neighboring, the share increased in small magnitude from 0.76% to 1997 to 1.60% in 2001. With the exception of Ukraine, the exports share of each country to the world market remained generally same during 1997 and 2001. Turkey’s exports share to the world market remained insignificant. Turkey’s also lags behind in technological innovation relative to high technology EU and other developed countries. With the exception of Greece, Azerbaijan and Ukraine, imports share of total animal products from the world market decreased for all countries. As far as revealed comparative advantage (RCA) is concerned, in the market of neighboring countries, more number of countries (i.e. 7) had revealed comparative advantage in the export of Vegetables and Fruits commodity group (05) followed by Cereals and Cereal preparations commodity group (04). In the case of commodity groups (01) and (02), there were respectively, 4 and 3 number of countries who revealed advantage. Study showed that Turkey is not an efficient producer of commodity group (01 and 04).

Sharma and Dietrich (2004) examined the structural change in the Indian manufacturing based export sector during the period 1980 to 2000 by
using trade indices such as Balassa revealed comparative advantage (RCA) index, and regression analysis. This study showed that India’s export industries are undergoing a process of transformation. During this process, the diminishing comparative advantage in India’s export industries is being observed. But low technology industries showed an increase in comparative advantage as opposed to all other cases which showed a decline in comparative advantage. This study also showed that India’s long neglected service sector industries are showing signs of massive growth (especially in the information technology sector)

Utkulu and Seyman (2004) examined the competitiveness of Turkey with respect to the EU during the period 1980 to 2003 by using revealed comparative advantage (RCA) indices. This study found that Turkey’s international competitiveness was limited to labor intensive and easily imitable to research-oriented products. Competitiveness in difficult imitable products was low. Turkey had a strong comparative advantage in raw-material intensive goods. This study also found that Turkey shares the same export structure with Romania, Poland, and partly with Bulgaria. Among six countries examined, only Bulgaria and the Czech Republic seem to establish competitiveness in capital intensive goods. Besides, Hungary is the only country that has a comparative advantage in exporting easily imitable research oriented goods. The findings suggested that the main common failure of all countries was their weaknesses in the performance of production and competition in research-oriented goods where only Hungary was an exception to some extent. Turkey seemed to catch up with EU in a short time period. The study also showed that from the start of the 1990s, Turkey has improved its trade diversification and it has comparative advantage at about 50 per cent of the “standard” industrial products while has a definite disadvantage in “advantage” technology products (“advantage” with respect to the EU).
Brunner and Cali (2005) examined the competitiveness of manufacturing in South Asia by using unit value index and real competitiveness index during the period 1991-2002. Study found that South Asian countries (except Pakistan) had shown a dynamic export pattern over the period relatively to Indonesia (which had been highly affected by the 1997 crisis) and a similar pattern to that of Thailand which had been more flexible in recovering from the crisis. Study also found that the export quantity growth in India reflected process efficiency gains, unlike Bangladesh which was dominated by a falling wage ratio, which adjusted to the crisis through wage cuts and Indian process efficiency gain had come about through capital accumulation and labor expulsion.

Hashim (2005) examined the competitiveness of Indian textile and garment industries during the period 1989-97 by using total factor productivity (TFA) index. The study found that cotton yarn and garment industries suffered negative productivity growth during the period. This led to an increase in the unit cost at constant prices, as productivity and unit cost are found to be inversely related. The decomposition of productivity growth showed that technological retrogression in the cotton yarn industry is the main reason for its poor performance. It was reported that the garment industry suffered also due to the inefficiency problem present in its three major states-Delhi, Punjab and Maharashtra-which alone contributed to unit cost growth in these states by 5 percent per annum. The decomposition of the factor prices into various sources showed that the materials’ price contributed the most to the unit cost growth. In the garment industry, an increase in unit cost is attributable more to labour than to capital, suggesting scope for improving the factor mix in favour of capital.

Uchida and Cook (2005) examined the pattern of trade and technological specialization and measured the relationship between them in the East Asian developing economies during the period 1978-1997. For this purpose they have used trade specialization indices. The country level
analysis indicated that a difference in the patterns of competitive advantage among the East Asian economies was greater for technology than trade. Cumulative or path-dependent technological change was found to be important in Hong Kong, South Korea and Singapore. These economies have broader degree of technological specialization than the other economies in East Asia. The industry level analysis revealed that only Hong Kong had strong path dependent on technological development in a wide range of industries. Fewer industries in south Korea and Singapore showed tendencies of cumulative or path-dependency with respect to technological specialization. Hong Kong’s specialization continues to be found in low technology industries while South Korea and Singapore appear to be moving to a greater extent towards high rate industries. The study has also provided partial support for the hypothesis that technological specialization determined trade specialization, at least among the leading East Asian economies. The analysis suggested that learning by doing has been significant in developing competitive advantage in trade in all the economies analyzed.

**Nesterenko (2006)** examined the competitiveness of Ukrainian products by using Balassa index of Revealed Comparative Advantage during the period 1992-2000. The study reported that in 2004 beverages were the most competitive while in the previous years iron and steel were occupying the leading position. The study further showed that FDI has negative and very small impact on competitiveness. It was also observed that competitiveness at the macro level is determined by the process of innovation and acquisition of new technology.

Various studies using different measures of competitiveness like shift share approach, revealed comparative analysis (RCA), constant market share (CMS) model and determinants of competitiveness like-relative unit value of exports, relative consumer price index, relative wholesale price index and relative unit labour cost and relative profitability index revealed that
developing countries had shown better export performance in labour-intensive products and China was found to be competitive in labour intensive manufactures than other ASEAN countries during 90s. The manufactured exports of Japan and Korea and Malaysia were found to be moving toward technological intensive goods. The results of various studies regarding the competitiveness of India’s manufactured exports revealed that India stood in a distinctly poor category in respect of export performance during sixties. India experienced progressive improvement in the international competitiveness due to exchange rate changes against US dollars during seventies. Productivity growth of India, did not improve in the eighties nor did it have positive effect on exports of any industry. India experienced an increase in comparative advantage in low technology exports. India’s garment and cotton yarn industries suffered negative productivity during nineties. India’s long neglected service sector industries are showing signs of massive growth (especially in the information technology sector).

Review of empirical studies revealed that most of the studies are related with either one or few aspects of competitiveness of exports at international level/national levels with limited time period. No indepth research has been undertaken in this field. In light of all these shortcomings, our study covers 85 countries, 147 product groups for the time period 1980-2005.