

# **Transnational Corporations and Export Performance : A Case Study of India.**

**Dissertation submitted to the Jawaharlal Nehru University  
in partial fulfilment of the requirements  
for the award of the Degree of  
MASTER OF PHILOSOPHY**

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**1989**



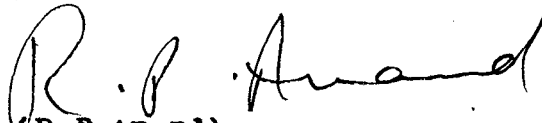
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20th July 1989

CERTIFICATE

This is to certify that the dissertation entitled "Transnational Corporations and Export Infx Performance: A Cse Study of India" in fulfillment of six out of a total requirement of twenty-four credits for the DEGREE OF MASTER OF PHILOSOPHY of Jawaharlal Nehru University is his work according to the best of my knowledge and may be placed before examiners for evaluation.

  
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## ACKNOWLEDGEMENTS

I am indebted to a large circle of people, both family and friends, for helping me and providing support at various stages of this research. To Dr. Manoj Pant my eternal thanks and gratitude. His was the guiding spirit and without his encouragement and help this Thesis would not have materialised. I also owe him an apology for inflicting my presence on him at the oddest hours. To my friends, Smita Gupta and Nikhil Washington my gratitude for formatting and typing this work in the shortest possible time. A note of thanks to Harpreet, Mayank and Tarun whose help was invaluable for the completion of this Thesis. My gratitude to my parents for bearing the vagaries of my moods with patient forbearance. Last but not the least my thanks to Sangeeta and Chunmun - the former my odd-job woman and the latter for keeping herself out of my way and work !

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## CHAPTER I

### TRANSNATIONAL CORPORATIONS AND EXPORT PERFORMANCE : SOME HISTORICAL AND THEORETICAL ISSUES

#### 1.1 INTRODUCTION

It is difficult to think of any branch of Economics or business studies which has generated so much interest , and caused so many books, articles, or reports and papers to be written since 1960, as that of the Transnational Corporation (T.N.Cs). Along with advances in the theory of foreign direct investment and T.N.Cs , the last two decades have seen the emergence of new descriptive materials about the activities of corporations outside there national boundaries in which they have a controlling equity stake. However, the public, academicians and politicians look at transnational companies in a variety of radically different ways. To some, T.N.Cs , with their influence linked to the power of money, consolidate the power and riches of a few to the detriment of majority. Others , in contrast, regard T.N.Cs as the most modern and efficient form of company organization and , therefore, indispensable, beneficial vehicles for economic and social progress.

The present chapter attempts to look at the T.N.Cs in a historical perspective and to theoritize certain aspects of the manifold approaches to the phenomena of evolution and growth of T.N.Cs and Foreign Direct Investment (F.D.I) . Since our main

concern is with the effect of T.N.Cs on export performance, we confine ourselves to a detailed discussion of theories concerning this aspect only. In section 1.2 we look at the phenomena of evolution and growth of Transnational Corporations. In the section 1.3 we tackle the issue of defining 'T.N.Cs' and 'International Investment'. Section 1.3 is devoted to a brief discussion of various theories of F.D.I. and T.N.Cs. Section 1.4 analyses in detail the theories which are relevant for explaining the export performance of T.N.Cs. In the last section we note the scope of the present study.

## 1.2 THE EVOLUTION AND GROWTH OF TRANSNATIONALS.

The T.N.C. is not the only type of international organization, nor is it the first that ever existed. From earliest history, merchants have traded on an international basis. The same is true of bankers. Churches too, spread outside of their home territories. But there is no denying the fact that the early transnationals were European. The first which dates from the beginning of the nineteenth century, was the S.A. Cockerill Steelworks, which was established in Prussia in 1815 and today is Belgian based. Others followed at end of century-Bayer of Germany in 1863; Nestle of Switzerland in 1867; Belgian Solvay in 1881; Michelin (France) in 1893; and Lever Brothers<sup>1</sup> (U.K.) in 1890.

Since then at least 3 periods of rapid growth clearly emerge. The initial stage of expansion fell clearly into the 1880s and 1890s while further remarkable spurts occurred in the inter-war period. However, the main expansion of T.N.Cs came about in

1960s and 1970s. On the whole, a credible case can be made for a chronological development of Transnational Corporations from its origins spreading across to its global ramifications.<sup>2</sup>

1.2.1 1870 - 1914 :THE FIRST TRANSNATIONALS : For the first three quarters of the nineteenth century, direct capital exports mainly comprised expatriate investment or finance raised in the home country by the corporations or individuals to purchase controlling equity interest. The subsequent forty years saw the infancy and adolescence of the type of activity which mainly dominates today, viz. the setting up of foreign branches by enterprises already operating in their home country. By 1914 at least \$14 bn.<sup>3</sup> had been invested in enterprises or branch plants in which either a single or a group of non-resident investors owned a majority or substantial equity interest. This amounts represented about 35 percent<sup>4</sup> of estimated long term international debt at that time.

At the turn of the century, transport cost and high duties often<sup>5</sup> made it difficult for industrialists to export. Europe had accumulated a pool of marketable venture capital, entrepreneurship and management expertise and was already a major capital exporter. Of special significance in this era investment in raw material and agricultural production; This was the heyday of plantations. Europeans had to secure supplies of raw materials which did not exist in their countries- gold, copper, zinc, nickel and petroleum and bauxite later on. So they invested in foreign countries where there were such resources<sup>6</sup> and built the facilities for their extraction. Therefore, we

see that in this <sup>7</sup> period several economies, particularly developing countries, and some sectors, particularly capital-intensive primary products and technology-intensive primary products were dominated by affiliates of T.N.Cs or by foreign entrepreneurs who both financed and organized the supply of technology and management.

All this is not to say that U.S. foreign investment was not important enough or was negligible quantitatively. In fact as the table 1a of Appendix I shows, in 1914 about 18 percent of the estimated stock of accumulated F.D.I came from U.S.A. Even at that time U.S. direct investment was directed more to growth sectors, and a much larger proportion represented the activities of T.N.Cs rather than absentee equity participation. The latter was a result of the fact that U.S. was building a strong comparative advantage in corporate technology-management skills which were often best exploited within the enterprises generating them.

The first phase of T.N.C growth was soon cut short in 1917 following the Russian Revolution when all such enterprises were nationalized and the World War I. The war itself caused several European belligerents to sell some of their pre-war investments and boundary changes further reduced intra-Continental European activity. Moreover, they suffered from the collapse of international capital markets in the late 1920s.

1.2.2 1918-1938 : RISE OF AMERICAN TRANSNATIONALS:- During this period American assets in the world grew relatively faster than those of any other capital exporting country. The reason was



perhaps that U.S.A remained fairly unscathed by the Russian Revolution and World War I. Also, because her foreign investments largely took the form of branch plant activities by T.N.Cs and were directed to sectors supplying products with an above average income- elasticity of demand, her share of World Capital Stock increased from 18.5 % in 1914 to 27.7 % in 1938. Overall the international capital stake rose quite substantially in the inter-war period. By one estimate it increased by over 50 % . Throughout the period the number of new subsidiaries set up by T.N.Cs continued to rise. This included new oil investment in the Mexican Gulf, the Dutch East Indies, and the Middle East; Bauxite in Dutch and British Guyana; nitrate in Chile; plantations in Liberia, Malaya , and Dutch East Indies. The investments by Continental European firms went mainly to other parts of Europe and the U.S.A while U.S. firms were strongly oriented to South America, Canada, and larger European countries. The first four Japanese manufacturing affiliates of largest Japanese T.N.Cs were set up in this period.

1.2.3 1939-1960: THE AMERICAN PHASE:- Until the early 1940s the overwhelming majority of international direct investment originated in Europe, above all Britain. But this was the period in which U.S.A. dominated the international investment scene; of the increase both in the capital stake since 1938 and the number of new manufacturing subsidiaries, U.S.A. accounted for about two-thirds. Between 1950 and 1967 the number of foreign manufacturing subsidiary companies under U.S. control more than

trebled ( From 988 to 3,646). Overall the number of subsidiaries grew continually from the pre-1914 period with obviously slower growth for the duration of the two World Wars. But both post-World War periods register important spurts in the number of subsidiaries as compared to previous years. From a total of 290 foreign manufacturing subsidiary operating in 1939, the figure went up to 1,857 in 1958.

During this period, there was a continuation of the pre-war trend for the T.N.Cs to favour developed countries for new venture activity. In 1914, about 66 % of the capital state was directed to the developing countries; by 1938 this had fallen to 55 % and by 1960 it was nearer 40 %. Mainly, this reflected another major structural change viz. the increased interest shown in market-vis a vis supply-oriented investments, which was designed to overcome trade barriers of one kind or another. In 1960, about 35 % of the U.S. and U.K. accumulated investment was in manufacturing, compared with about 25 % in 1938 and 15 % in 1914. By contrast interest in agricultural and public utility activities declined markedly, while mining investments recorded about average rate of growth. Also, it was not too long before the U.K. and the other leading Continental European nations began to renew their foreign investment partly on account of major technological advances after World War II and partly by favourable international economic and political climate produced by the aftermath of World War II.

1.2.4 1960 AND AFTER : RESURGENCE OF EUROPEAN AND RISE OF JAPANESE TRANSNATIONALS :- The rate of growth of the international capital stake reached it's peak in the late 1960s , decelerated in early and mid 1970s, but picked up again in the last few years of the decade. Most of the forced divestment in natural resources and public utilities occurred in the decade ending in 1975. However, the decline in extractive investments has been largely counteracted by the growth in manufacturing and service industries. The reconstruction of Europe after World War II and the development of large uninationa<sup>13</sup>l companies led to the resurgence of European T.N.Cs during this period. The novelty of this resurgence lies in the increasing share of German and Swiss T.N.Cs. The continuing fall U.K. and U.S. FDI is a striking feature of this period, though U.S. and U.K. still accounted for more than half of total F.D.I. in 1978.

U.S., West Germany and Swedish T.N.Cs. continued to dominate the high-technology area while those of U.K. and Japanese origin are more represented in consumer good sectors.

The 1970s saw a major surge in Japanese investment abroad. Though most of the Japanese FDI is concentrated in LDCs<sup>14</sup> (56.5 %), it's investment has grown rather more rapidly in the industrialised world. Most of her investments upto the mid 1970s were in traditional industries in which she once had a comparative advantage eg. textiles or those in which she has always had a comparative trading disadvantage e.g. primary metals. Another trend of this period has been the shift away from traditional import substituting resource-based FDI to that designed to

promote an integrated structure of production by T.N.Cs. and their affiliates. The fastest growing areas of T.N.C activity in the 1970s have been in export-platform investments in Newly Industrialised Countries (NICs) and intra-firm trade among affiliates and between affiliates and parent companies with a regionally integrated area e.g. E.E.C. and L.A.F.T.A. Moreover, in the later of 1970s several developing countries eg. Hongkong, Singapore, Brazil, Korea and India also began to export capital on some scale. But geographically U.S., E.E.C. and Japan have established a veritable triangular power base which has so far not been seriously challenged by the emergence of T.N.Cs in these N.I.Cs.

The activities of T.N.Cs and their role in the world continue to expand in the 1980s. It is estimated that the largest 600 industrial companies account for between 1/5th and 1/4th of the production of goods in the world's market economies. Their importance as importers and exporters is probably even greater. For eg. between 80 and 90 percents of exports of both U.S. and U.K. is accounted for by T.N.Cs transnational bank accounts for the bulk of international lending .

The shifts in pattern of outward FDI is visible in table 1b of the appendix. The Japanese corporations have emerged as leading exporters of capital over the present decade. They have established a strong competitive advantage in world markets for a range of technologically advanced products. The principal factor has been the capacity of Japanese coporations to innovate in the application of micro-electronic-based information

technologies to manufacturing systems and in the handling of information in the services sector as also in the organization and management of production. Secondly, as observed in the shifts of FDI there has been a major expansion of T.N.Cs based in western Europe. The major home countries in this region continued to be U.K. , Switzerland, Netherlands and F.R.G. The ratio of outward FDI from the latter increased sharply from 3.2 to 12 percent <sup>16</sup> .

Thirdly, the swing in net position of W.Europe is a mirror image of the opposite swing in that of the United States, for the most important destination of former has been U.S.A. Table 2a, b and 3 (appendix I) clearly show the declining importance of T.N.Cs from United States as foreign investors and increase in the role of the United States as a host country. The more rapid growth of the U.S. economy, rising protectionist sentiments, and the relatively lower equity market valuation of corporate assets in the early 1980s, combined with the drop of Dollar after 1985, were important factors that attracted foreign based T.N.Cs to United States.

Fourthly, though the T.N.Cs have reduced their flows of FDI to developing countries, FDI to NICs for export-oriented industries has expanded. At the same time T.N.Cs have made greater use of non-equity participation. Before we set out to theoretize and explain the factors underlying such phenomenal growth of T.N.Cs., we must be clear about the meaning of the term T.N.C. and the often confusing distinction between the terms T.N.C. and M.N.C.

### 1.3 DEFINITIONS

There is a considerable controversy and as yet no international agreement about what sort of enterprises should be categorized as " multinational corporations " or whether indeed the expression "transnational corporations " is to be preferred. There is neither a single nor a simple criteria such as size of enterprise, degree of " transnationality " , ownership and focus of control - all have pitfalls.

1.3.1 TRANSNATIONAL CORPORATIONS OR MULTINATIONAL CORPORATIONS :The group of eminent persons in their report preferred to use the term "Multinational Corporations" and defined them as "Enterprises which own or control production or service facilities outside the country in which they are based". They may be private, co-operatives or state owned. " Transnational Corporations " was a term being used in the literature of that time to cover a sub-set of " Multinationals ", namely whose owners are in more than one country. But such a clear-cut demarcation was short-lived . United Nations preferred to use the term " Transnational Corporation " in the mid 1970s. This was on account of two reasons. Firstly, to meet the objections for Council for Mutual Economic Aid to the use of term Multinational Corporations.

Secondly, M.N.C. was the term being used for enterprises set up under the auspices of the Andean group of countries. To-day most authors prefer to use the term MNC, though there is no dearth of authors using the term T.N.C.

1.3.2 SOME DEFINITIONAL ISSUES:- Size is perceived by some to be an important criterion for distinguishing T.N.Cs from the general run of business enterprise. Still there is no dearth of smaller firms having considerably greater corporate involvement outside their home countries compared to their larger counterparts. One must also differentiate between absolute and relative size. A very wide range of enterprises have become significant because of their relative size in the market. The issue of degree of "Transnationality" poses the question about the minimum number of countries over which the manufacturing activities of a firm have to be spread for a firm to be called a T.N.C. while Brooke and Remmers and Dunning would describe any firm with a stake in more than one country as transnational, other see them in much wider terms. There is a distinct element of arbitrariness in defining the cut-off in terms of number of countries for it has little economic rationale. Moreover, "Transnationality" should not be measured only by where firms operate but also by "Internationalization" of management, stock ownership and control of affiliates.

Identifying "Transnationality" in terms of stock ownership is also a difficult proposition. In the modern corporate world ownership chains have become so complex that major research must be undertaken to unravel 'who owns whom'. Moreover as many spokesmen for the developing world have argued that majority ownership of affiliates abroad is not needed to achieve control. Therefore, such a measure may preclude a number of firms which have small foreign stock ownership from being identified as

T.N.Cs. Also, in recent times T.N.Cs have relied on the increased use of non-equity arrangements such as licensing, franchising and co-production without the need for them to establish a physical presence inside the borders. However, we can suggest an appropriate working definition of transnational which captures the essence of their nature without being too exclusive-- "an enterprise operating in several countries on such a scale that its growth & performance depend on more than one national market and its decisions are made on the basis of global alternatives".<sup>23</sup> The fourth chapter will clarify as to how we have dealt with this issue.

#### 1.4 A REVIEW OF THE THEORIES OF FOREIGN DIRECT INVESTMENT AND TRANSNATIONAL CORPORATIONS :

It was twenty years ago that the late Stephan Hymer wrote his seminal thesis on foreign direct investment and transnational corporations. Since then the literature on the subject has taken different directions, placing T.N.Cs at the crossroads of many disciplines and debates. The present section seeks to briefly review the various theories.

1.4.1 THEORIES IN HYMER-KINDLEBERGER TRADITION :- Behind the proliferation of articles and books in this field, Hymer's theoretical contributions have remained unshaken and have led the way to further elaboration of theory. The core of this theory is a deceptively simple proposition i.e. indigenous firms possess certain innate strengths not possessed by the T.N.C. Firstly, the indigenous firm has a knowledge of the local



consumer's tastes, the local legal and institutional framework of business and local business customs which foreign firms can only acquire at a cost. Secondly, foreign firms incur costs of operating at a distance i.e. costs not only of travel, communication and time lost in communicating information and decisions but also costs of misunderstanding that lead to errors on their part. Therefore T.N.Cs must have some offsetting advantages in order to compete with domestic firms. As per Kindleberger<sup>24</sup> two conditions have to be fulfilled to explain the existence of foreign direct investment : 1) foreign firms must possess countervailing advantages over the local firms to make such investment viable, and 2) Market for the sale of this advantage must be imperfect.

We examine the latter condition first. Kindleberger suggested that market imperfections was the reason for the existence of foreign direct investment. We can distinguish among four classes of such imperfections identified by Kindleberger: (1) market disequilibrium hypothesis e.g. with segmentation of world markets rates of return are not equalized internationally and in a disequilibrium context flows of FDI would take place until markets returned to stability. Such arguments basically apply to factor markets and foreign exchange markets. In the context of capital markets, FDI may be attracted towards areas where average rates of profits are higher;(2) government-imposed distortion like tariffs, non-tariff barriers, fixed exchange rates, wage policies. An increase in trade barriers may be the necessary incentive for firm to establish a subsidiary inside the

protected market; ( 3 ) market structure imperfections which refer to deviations from purely market-determined prices brought about by existence of monopolistic or oligopolistic market characteristics. The two essential characteristics of oligopoly are interdependence of decision-making processes among the firms and barriers to entry. Caves considered product differentiation in the home market as being the critical element giving rise to foreign investment. The successful firm producing a differentiated product controls knowledge about servicing the domestic market that can be used at little or no cost in other national market. This provides the motivation for investing abroad as long as means to protect the product exist; such as patents or copyrights; ( 4 ) market failure and imperfections. Basically, three types of imperfections lead to market failures ( a ) external effects ( b ) public goods and ( c ) economies of scale. Under any of these conditions duality between social efficiency and market performance ceases to exist. Johnson has identified technological and managerial knowledge as two factors which can lead to market failures. Social efficiency would dictate that existing knowledge be made available as a free good.

But in that case, there is little motivation for new knowledge to be generated. The natural consequence of this would be to favour its transfer within a single firm thus leading to FDI .

Coming to the first condition for the existence of FDI ; as per the theory, we find that Kindleberger lists a number of

potential firm-specific advantages. However, we postpone a discussion of such advantages to the next section, since it is pertinent to explain the export performance of T.N.Cs.

The essence of Hymer-Kindleberger (H-K) theory is that there are barriers to trade for T.N.Cs possessing firm-specific advantages and barriers which prevent host-country firms from duplicating this advantage, which means that FDI is often the preferred form of exploiting the advantage in the foreign market.<sup>27</sup>

This theory has been criticized on the grounds that the advantages of local firms in most instances can be discounted in advance by an experienced T.N.Cs. Hence, H-K approach is not as easily applicable to established T.N.Cs as it is to firms becoming T.N.Cs. Additionally, T.N.Cs often become locked into outmoded technologies and institutional rigidities which may prevent the creation and absorption of new technologies and provide opportunities for new generation of products and processes outside T.N.Cs.<sup>28</sup>

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#### 1.4.2 ALIBER'S THEORY OF T.N.Cs AS CURRENCY AREA PHENOMENA :-

Aliber's argument is based on the argument that portfolio investors are myopic: They assume that foreign investments of T.N.Cs are all in the same currency area as the parent firm. If F.D.I. happens to be from the preferred currency area, then the currency carries a lower premium, on account of lower risks anticipated by the investors in terms of its depreciation. It follows that if the currency premium on Dollars is lower than the currency premium on Rupees then the market rate of interest

on the debt of U.S. based T.N.C would be lower than on the debt of an indigenous Indian firm, after allowance for expected depreciation. The U.S. based T.N.C can borrow more cheaply than the Indian firm to finance any form of capital expenditure in India. An immediate implication is that the U.S. firm can realize an immediate profit by financing the takeover of firms. It can also obtain cheaper finance (as compared to Indian firms) for green field ventures.

However it seems unlikely that as a long term explanation investor's myopia can bear the weight placed on it. Additionally, the theory fails to account for cross-investment within one industry between currency areas.

1.4.3 PRODUCT CYCLE MODEL:- is chiefly associated with Raymond Vernon.<sup>30</sup> The model rests on four basic assumptions. Firstly products undergo predictable changes in production and marketing. Secondly, restricted information is available on technology. Thirdly, production processes change over time and economies of scale are prevalent. Lastly, tastes differ according to income and products can be standardised at various income levels.

The original model suggested that new products would appear first in the advanced country because demand from (i) discretionary spending on new products arising from high income and (ii) substitution of new capital goods for expensive labour would be most easily transmitted to local entrepreneurs. Consequently, the 'new product stage' where an unstandardized product with a low price-elasticity of demand is produced on an experimental basis, occurs in U.S.A. The second stage is 'maturing

product'. Here the product begins to be standardised and the possibilities of economies of scale lead to expansion in production matched by increasing demand as the product becomes cheaper. The markets begin to appear in other advanced countries. Eventually cost factors begin to dictate that these foreign markets should be serviced by local production and the emergence of indigenous producers adds a defensive motive to the advantages of investment by U.S. producers. So the other advanced countries are first recipients of U.S. direct investments. In the third stage, a 'standardised product' emerges which sells entirely on the basis of price competitiveness. The imperative now is to produce the product at the lowest possible cost. Consequently, the labour-intensive stages of production are hired off and carried out, via F.D.I. in NICs, where labour is the cheapest. There are two major snags in this theory. Firstly, the U.S. is no longer totally dominant in FDI and secondly, the T.N.Cs are now capable of developing, maturing and standardising products almost simultaneously, differentiating the product to meet a variety of needs.

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To counter the first objection, Vernon adapted his model to deal with non-U.S. T.N.Cs. The hypothesis is now concerned to emphasize the Oligopolistic structure in which most T.N.Cs operate and their attempts to forestall entry by new firms.

1.4.4 INTERNALISATION THEORY:- As the starting point, the theory says that foreign involvement can occur on account of firm and country specific factors. The firm-specific factors

include the possession of proprietary intangible assets, such as better technological expertise or entrepreneurial skills or organisational ability compared to domestic firms. Country-specific factors refer not only to the endowment of countries, but also to the gains arising from the geographical positioning of multiplant operations e.g. abundance of skilled labour, easy access to energy sources, cheap sources of capital, protected markets etc.

The transactional model of T.N.Cs holds that international firms arise to internalise transaction costs in arm's length markets. Transactions (enforcement) costs arise principally when <sup>32</sup> (1) strategic or opportunistic behavior is present among agents of exchange ; (2) commodities or services traded are ambiguously defined ; and (3) obligations extend in time. The choice of mode of transacting is a subsequent step in the international expansion of the firm (as per this theory). In its purest form the transactional model of T.N.C holds that mode form is a choice between markets and hierarchy. In pure markets, transactions amongst individuals or groups are carried out at arm's length; but in a hierarchy transactions take place among individuals or groups that are linked via an authority relation.

<sup>33</sup>  
In his classic article on the nature of domestic firms, Coase gave the rule for internalisation : given transaction costs, firms would exist and tend to expand until the cost of organising an extra transaction within firm becomes equal to the cost of carrying out the same transaction by means of an exchange in the open market.

Dunning was perhaps the first to present the internalisation theory in this format but preferred to call it an eclectic theory. This is so because it borrows from Hymer-Kindleberger ownership advantage theory, Williamson's markets vs. hierarchy paradigm, Coase's theory of transaction costs, elements of location theory and Rugman's Internalisation theory. We prefer to refer it as internalisation theory, since it can incorporate all elements of above mentioned theories.

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Though Rugman has claimed that internalisation is a general theory of T.N.Cs, it does not incorporate the fact that T.N.Cs not only react to imperfections, but also create them. Further, the concept of internalisation is a difficult one to measure imperically. The use of internal exports and flows relating to R&D do not always discriminate between this approach and others.

1.4.5 LOCATION THEORY : Any viable explanation of sourcing policy of inputs and market servicing policies must include elements of location theory. The location specific endowment of particular importance to T.N.Cs are (i) raw materials leading to FDI; (ii) cheap labour leading to off-shore production and (iii) protected or fragmented market leading to FDI as preferred means of market servicing. Standard location theory can be shown to be of direct relevance to the strategy of T.N.Cs e.g. location of T.N.Cs in an enlarged market or servicing of the Canadian market by U.S. T.N.Cs . This theory is discussed in more details in the next section .

THE APPROPRIABILITY THEORY :- of T.N.Cs is best represented in

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Magee's work. It is a consolidation of two main streams of thought : on the one hand, the industrial organisation approach to FDI ; on the other hand, the Neoclassical ideas on the private appropriability of the returns from investments in information. The theory states that T.N.Cs are specialists in the production of information. Because sophisticated technologies are less prone to be imitated , T.N.Cs are more successful in appropriating the returns from these technologies than from simple ones. Further more, sophisticated information is transferred more efficiently by internal channels than by market means. This provides a built-in incentive to generate new information within T.N.Cs . But production itself is information-saving, so that, ultimately there is a decline in the production of new information . This generates technology cycle at industry-level; that is young industries are those where information is being created at a fast pace so that firms grow large by internalisation. As the industry matures the amount of information being created is minimum and licensing increases relative to FDI.

1.4.7 THE DIVERSIFICATION THEORY :- is attributed to Lessard, who has argued that there are imperfections in financial markets, and hence advantages for T.N.Cs in internalizing financial transactions. The typical T.N.C is diversified in two ways- First by its product and second it will be financially diversified, earning its returns in a variety of currencies. Rugman has argued that international financial diversification has led to



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superior stock performance by T.N.Cs over purely domestic firms. Thus T.N.Cs are regarded as an alternative vehicle for international financial diversification to individual diversification by the purchase of shareholdings. The argument rests on imperfections in the world capital market which prevent individual from enjoying the benefits of diversification. Such imperfections must (i) impede individuals from satisfactorily diversifying, and (ii) reduce the optimal diversification of intermederies so that diversification through controlling interests is more efficient than a large number of smaller shareholdings. In addition managers may be averse to risk and may therefore prefer a widely diversified company with the hoped-for stability which goes with this state. Diversification through foreign investment widens the scope of their discretion. In addition two other theories deserve mention. According to Knickerbrocker the timing of foreign investments is determined largely by reaction to competitor's investments ; he argues that the optimal strategy for firms in an oligopolistic industry is to match their rivals move for move . This theory implies that the initial investments of foreign investment in a given market will tend to be bunched in time and this bunching will tend to be greater the more oligopolistic the industry. According to Aharoni the timing of foreign investment depends very much on chance stimuli and on the way management processess convert these stimuli into decisions to invest. most theories mentioned above fail to distinguish between short and long-run analysis and prejudge some of the crucial issues, such as decision to internalise. moreover, they are based on certain aspects of T.N.Cs and none of the

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theories discussed can describe in full the evolution, growth, pattern of growth and reasons for the growth of T.N.Cs (though internalisation theory comes very near to it).

#### 1.5 T.N.Cs, EXPORT PERFORMANCE AND THEORY.

In this section we examine what the different theories imply for the export performance of T.N.Cs.

1.5.1 THEORIES IN HYMER-KINDLEBERGER TRADITION :- The essence of this theory is that for transnational investment to prove profitable, their intrinsic disadvantage of operating over long distance must be sufficiently offset by some sort of special advantage over potential local competitors. It is therefore, a necessary condition of direct investment that the investing firm has some monopolistic or oligopolistic advantage not possessed by local competitors. The second stage of theory concerns itself with the identification of sources of advantages. These very sources of advantages can be used to explain the reason why T.N.Cs are expected to have better export performance than their local counterparts in the host country. It can also be argued that the products and processes which are intensive in the use of the various sources of advantages of T.N.Cs are more likely to have greater export potential compared to other products e.g. a product intensive in the use of high-technology is more likely to be exported than a standardised product using mature technology. The various sources of oligopolistic advantages which lead us to expect that the T.N.Cs are likely to be better exporters than the domestic firm are following :-

(i) Management :- The T.N.C may have the advantage of superior management which may take the form of greater efficiency of operation as compared to the similar operation performed by a local firm, or of greater entrepreneurial ability to take risks, or to seek, locate and carry out viable ventures in the uncertain world of business. <sup>40</sup> This advantage may arise specifically with T.N.Cs because of the greater experience of foreign or T.N.C managers, or better training, education or recruitment. It may also arise from the different organisational forms that the very large T.N.Cs have adopted in order to facilitate efficient and rapid decision-making across diverse and widespread units.

(ii) Technology :- The T.N.C may possess superior technology compared to a domestic or a small firm. By 'technology' we mean not the knowledge of relevant sciences, which may be available in some disembodied form more or less equally to all countries but the ability to translate this knowledge into practical, commercial use. Empirically, one finds that the production of technology is highly concentrated within few <sup>41</sup> firms, most of them transnational.

We can identify at least six reasons as to why the new technology is likely to be generated in a T.N.Cs rather than a local firm. First, where the minimum scale of R & D required for successful innovation is very high and there are economies of scale involved only a few very large firm will be able to undertake it successfully. Second, where technological threshold as such is not high, but a very extensive marketing framework is

needed in order to sustain profitably a stream of innovations. Large size and widespread outlets will be a vital advantage. Here also the T.N.Cs are more likely to possess these advantages than a local firm. Third, where continuing R & D needs outside financial support, it is the large firms which are better able to attract private and government finance. Fourth, because of the expense of taking out and defending patents internationally, it is the T.N.Cs, most protected by the patent system. Fifth, where the defence of technological oligopoly necessitates the use of restrictive practices such as cartels, information swaps and market allocations, it is the largest firms which can benefit from such arrangements. Sixth, where the success of a major innovation requires complementary technological advances the preservation of existing technologies calls for control of competing technologies, large size may be an enormous advantage in terms of co-ordination of technological activities and of directly investing in firms or industries concerned.

Thus T.N.Cs are potential vehicle of 'transfer of technology' which can increase the recipient country's capacity to export by making its products internationally more acceptable and competitive ;Though T.N.Cs have the option of using a licensing agreement with a local firm or to produce in the domestic country itself, in most cases they prefer to use the latter option. This is so because at least the high-quality technology market is highly imperfect and therefore T.N.Cs may prefer to internalise such transactions.

(iii) Marketing:- Technological innovation cannot survive

without marketing . The role of marketing is absolutely vital to international investment and constitutes a source of oligopolistic advantage even greater than that of technology. Market research, advertising and promotion and distribution are some of the aspects of marketing where T.N.Cs are likely to have comparative advantages. Market research helps in understanding buyers needs as they evolve in various markets. Advertising and promotion helps in product differentiation which may serve existing needs and create or evoke new needs. It can promote brands of particular firms successfully. Distribution is more likely to serve as a consequential and cumulative benefit of transnational expansion. The host country of F D I acquires at a marginal cost the benefits of marketing associated with T.N.Cs. The use of brand names, wide network of channels of distribution and ability to understand the needs of foreign markets better make the products of the domestic country internationally more acceptable and competitive. Therefore the marketing advantages of T.N.Cs also help in increasing the export potential of the host country.

In conclusion we expect the T.N.Cs to increase the export potential of the host country for at least two reasons and expect them to fare better than the purely domestic firms in the export sector. Also the products exported by T.N.Cs are likely to be more intensive in use of R & D, managerial skills and marketing other things remaining equal.

1.5.2 NEW INTERNATIONAL DIVISION OF LABOUR :- One aspect of

international trade is intermediate product trade. Political economists have examined the growth of intermediate product trade within industries in terms of the "New International Division Of Labour (N I D L ) " <sup>42</sup>. The most obvious manifestation of N I D L is the growth of " export platform " industries in NICs which gives rise to intra-firm trade within TNCs. So far however there is no comprehensive theory of N I D L. <sup>43</sup> Recently Casson has developed a formal model of the division of labour and applied it to elucidate the way economic and social forces have interacted to generate the N I D L and stimulate intermediate product trade .

The division of labour is defined as the reduction of a complex task which every worker must perform to a set of simple tasks in which individual workers can specialize. In analysing how the division of labour is organised over space the most important issue is whether the intermediate products are tradeable. If none of them is tradeable then all the activities must take place at the same location i.e. all of division of labour occurs within the plants. Transport costs and tariff determine the extent to which a product is tradeable. Transport costs depend upon the weight, fragility, bulk, inflammability etc., of the product. Tariffs tend to be much lower for intermediate products than for final products.

Transport cost economies tie the early stages of the production process to the sources of raw materials and attract later stages towards the centers of demand for final products. However, the location of intermediate stages is normally 'footloose'. Its

location is most likely to be about or near inputs which loose weight or bulk and away from both other input locations and the center of final demand. <sup>44</sup>Based on this, Casson builds a formal model of N I D L which involves simultaneous increases in the division of labour, the degree of international specialisation within industries and the scale of individual plants. He then conducts comparative-static exercises to analyse the causes of N I D L. In his model improvement and advances in industrial design lead to increase in the division of labour in industries as also the number of location units spanned by the production unit. This in turn gives rise to N I D L. Empirically the specific examples of such advances in industrial design are the switch from custom production to mass production, the development of production lines. Consequently the design of the product becomes adapted to the needs of division of labour; rather than the other way round. Basing manufacturing design on the division of labour leads the designer naturally to think in terms of a multi-component good. In view of the difficulty of using prices to allocate strictly complementary intermediate products multinational management may be preferred to arm's length for intermediate product trade. Better management, education and improved telecommunications have created an international business elite with a highly professional approach and cheaper telecommunications and convenience of air travel have substantially reduced the cost of international co-ordination relative to domestic co-ordination which has induced greater substitution in favour of greater division of labour.

Technical progress in transport coupled with post-war investments, containers, roll on / roll off system and bulk carrier shipping have reduced the cost of intermediate products. The formation of customs union and free trade areas, negotiation on tariff preference have all reduced barriers to trade. This has again promoted N I D L.

The most obvious manifestation of N I D L is the growth of 'export platform' investment by T.N.Cs in N.I.Cs. Off-shore labour-intensive assembly operations transform imported parts, components and materials into electronic goods, machinery, textiles etc., destined for mature industrialized economies. Semi-conductors, valves, tuners, and other components are manufactured or assembled for a large number of Japanese and American electronic T.N.Cs in Hongkong, Singapore, S.Korea, Taiwan and Mexico. Garments, gloves, leather luggage and baseballs are sewn together in West Indies, South-East Asia and Mexico for American and Japanese T.N.Cs .

1.5.3 VERTICAL INTEGRATION AND INTRA-FIRM TRADE :- We now turn to theoretical explanations of the extent to which intermediate product trade is organised within a firm rather than between firms. The division of labour within an industry follows a specific sequential pattern. Each pair of successive stages is connected by a flow of a single intermediate product which originates at the "upstream" stage and is consigned to the "downstream" stage. When two adjacent stages are brought under common ownership and control they are said to be vertically integrated. Basically, it is an extension of the theory of NIDL



and provides the basis for the involvement of T.N.Cs in export sector of vertically integrated industries.

Currently the theory of vertical integration is rather fragmented. It is assumed that vertical integration is motivated by profit maximisation that is profits under joint ownership are greater than profits when the units are independently owned. With independent ownership, it is assumed that the activities would be co-ordinated through contractual arrangements negotiated through the external market. When jointly owned they are co-ordinated through managerial control in an internal market. Profit maximisation implies that vertical integration will be undertaken to the margin where private benefits equal private costs. The benefits of vertical integration are the avoidable costs of external market failure. Different theories of vertical integration, however, view the external market in different ways. One group of theories assume that the external market is a Walrasian market, in the sense that one economic agent has undisputed price-making power. Failure arises because the agent sets the wrong price. Typical of this group are disequilibrium theories and theories of monopolistic distortion.

Another group of theories assumes that the external market functions through bargaining, in which agents come into conflicts over who is to set prices. Failure occurs because this conflict cannot be adequately resolved or because the negotiated agreement cannot be enforced. These theories approach vertical integration from the viewpoint of the theory of games. A third set of theories is concerned with the dynamic aspects of verti-

cal integration. The emphasis here is on changes in the division of labour over the industry's life cycle. Vertical integration it is suggested may be appropriate for very new and very old industries. Consider an innovator who wants to introduce an innovation using a new division of labour. In the absence of vertical integration he may encounter problems of quality control, of synchronising the start-ups of the upstream and downstream stages of production without managerial control. It is also possible that a new division of labour may result from cost cutting rationalization of an established product. In such a case we may have vertical integration in an industry producing an old or matured product.

It is quite apparent that the theories discussed in 1.5.2 and 1.5.3 of the present section are quite akin to the theory of internalisation discussed in the section 1.4 . It seems that the vertical integration occurs to internalise the gains emanating from specialisation in division of labour, which leads to labour-market imperfections. As explained earlier most S.E.Asian economies e.g. Taiwan, Singapore, S.Korea, Hongkong are dependent on such investments by T.N.Cs especially for their exports.

1.5.4 GLOBAL PROFIT MAXIMISATION HYPOTHESIS (G.P.M.) :- In recent years research into the operations of T.N.Cs has turned up the interesting hypothesis that such firms pursue the objective of global profit maximisation that is the maximisation of their net global profits. An important feature of this objective is that it has implications for the T.N.Cs global resource

allocation decisions. G.P.M. requires that the parent company takes account of the interdependence of profits among the various units of T.N.Cs , rather than allowing each unit to try and maximise independently. Exports of subsidiaries affect the profits of the parent company and thus give rise to profit inter-dependances. In such a situation, this theory shows that if the subsidiary is partly owned by the host country's shareholders, the amount that a subsidiary may export will depend on among other things the parent company's ownership share in the subsidiary.

1.5.5 OTHER THEORIES :- There are certain other theories dealing with the effect of various policy variables on the export performance of T.N.Cs . Batra and Hadar have contested the commonly held view that devaluation leads to increase in profits in exporting and import-competing industries. They have shown that in a world of fixed exchange rates a T.N.C. will benefit from devaluation only if its foreign operations are profitable. If that is not the case, its profits may either remain unchanged or decline. In a world of flexible exchange rates their analysis has shown that the export of a T.N.C. depends crucially on its expectation about the exchange rate. When the T.N.C. expects the exchange rate to exceed the cost of forward exchange and all marginal costs are rising, then a devaluation increases the home sales and decreases the exports. In the absence of a forward market a T.N.C. reacts to uncertainty about the exchange rate in the same way as it reacts to a devaluation when it is known with certainty.

In another theory Caves has suggested that product-differentiation is an important feature of T.N.C strategy. In situations of product differentiation firms may export part of their output and yet face competition from imports. In turn this suggests that a firm may be an exporter and yet receive tariff protection. The interesting consequence of this is that the tariffs are likely to decrease the firm's exports : the reason is that the tariff may enable an increase in the price and/or quantity sold in the local market and induce a shift of sale from exports to the local market. ( This is because tariffs may permit an increase in the prices charged on domestic sales ).

In summary the above sections have looked at the T.N.Cs in a historical perspective. The initial phase of expansion of European T.N.Cs was interrupted by World War I which induced boundary changes and reduction in intra-continental activity. U.S. T.N.Cs relatively unscathed by World War I started increasing their global activities. The decade of seventies saw the resurgence of European T.N.Cs mainly because reconstruction after World War II had lead to the development of large uninationals. The decade also saw a major surge of Japanese foriegn direct investment mainly in consumer goods industry. Over the years the share of foreign direct investment going to the developing countries has shown a declining tendency. There are a number of theories exploring the raison d'etre of T.N.Cs and F.D.I. Each theory is confined to explaining a certain aspect of the behaviour and rationale of the existence of T.N.Cs. However as yet there is no general theory of T.N.Cs incorporating or predicting

all the aspects. As a matter of fact, the rise of T.N.Cs is the result of several factors and no single theory can encompass it.

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Baumann clearly recognised the need for an eclectic approach and Dunning unambiguously embraced the same position. The theories which are pertinent for T.N.Cs and their export-performance are multi-faceted, though each concentrates on some specific aspect of T.N.Cs. Some theories explain why T.N.Cs are likely to have higher export-propensity compared to the local firms. The other group of theories try to analyse the reasons behind the development of 'export platform' investments by T.N.Cs. The third group of theories try to explain the influence of various factors and policies on the export performance of T.N.Cs.

#### 1.6 SCOPE OF STUDY.

The present study is concerned with not only the effect of T.N.Cs on export-performance in India but also with the factors which are pertinent for explaining the export performance of T.N.Cs themselves. It will be our contention that the studies on the 'T.N.Cs and export-performance' in India have not taken into account the influence of various policy variables on the export performance of T.N.Cs. In addition, most studies on India have some serious methodological difficulties. It will be our endeavour to overcome such difficulties and place the concerned issues in a better perspective. We also take note of the fact that exports are but one aspect of T.N.Cs effect on the B.O.P. of a country and that any B.O.P. policy should only be based on an overview of the entire sector. Since the present study sheds light only on the export aspect of B.O.P., we refrain from

making any B.O.P. policy conclusions from our study We confine ourselves to suggesting only specific policies designed to improve the export-performance of T.N.Cs, if possible.

The next chapter is devoted to take a brief review of the concerned issues. We also take a look at the case-studies done by various authors to analyse the export-performance of T.N.Cs in India and point out gaps in their analysis.

## CHAPTER II

### SOME EMPIRICAL EVIDENCES

#### 2.1 BRIEF REVIEW OF THE ISSUES.

Much of the economic analysis of developing countries involves the search for a crucial factor that distinguishes them from richer countries. Spurred by the industrial revolution, economists in the eighteenth and the nineteenth century assigned a key role to foreign trade in explaining both the growth of the national income and its distribution. One can recall Adam Smith's discussion of the importance of an expanding market and David Ricardo's formalisation of the theory of comparative advantage and his analysis of the impact of the Corn laws on the landlord's income. The essence of this early work still influences economists looking at developing countries, especially since the sixties when the definition of the problem of development tended to shift to the income distribution.

2.1.1 Export - Performance and Development :- Academic economists tend to argue that a developing nation should export these items in which it has a comparative advantage. However, many spokesmen for developing countries have argued that emphasis should be given to exporting manufactures. This view partially reflects the vision that a modern country needs industry and that the small domestic market of most developing countries would impose high costs unless industrial products

were exported. In addition a minimum of foreign exchange is necessary if a developing country is going to achieve rapid growth. The problem of bottlenecks and shortages that has beset such countries reflects to a large extent, the scarcity of foreign exchange , since many of the required goods are tradeables. The focus on exports is explained further by the assessment of the benefits that might result from greater success in expanding them. An improvement in export performance can put great pressure for change in the more undesirable features of the regime governing the allocation of resources in industry. Thus , greater exports can lead to the liberalisation of imports. This would not only produce greater competition in the domestic industry but would be of some direct effect on the quality of domestic products, as exporting firms learn to cope with overseas competition.

2.1.2 T.N.CS & Export Behaviour :- In the post war period, international trade and capital flows have grown more rapidly than world output and, as a result, the degree of interdependence in the world economy has increased markedly. T.N.Cs , including transnational banks, have played a prominent role in the internationalisation of production and in the growing trade and financial interdependence of the world economy. They are one of the principal means through which financial resources are transferred internationally.

In addition, available information indicates that of the large



and growing share of international trade conducted by T.N.Cs , a

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good proportion consists of intra-firm trade.

The special characteristics of T.N.Cs give them a potentially unique role in the international redeployment of industry and in the associated process of structural adjustment at the global level as also export promotion. As 'global scanners' they are in a better position than purely domestic firms to recognise the need to shift industrial production to sites offering lowest cost internationally, and to take advantage of the resulting opportunities through investment in foreign production. Such a shift frequently coincides with the wishes of a developing country to promote exports of manufactured goods as a means of accelerating their industrial growth. Beginning in the 1960s, a growing proportion of investments made by T.N.Cs in developing countries has gone to the manufacturing sector. In some other cases, where domestic policies have encouraged the exports of manufactures and the host country's economy has certain characteristics favouring such exports, foreign direct investment has made an important contribution to the promotion of non-traditional exports.

As regards international trade, the basic issue posed by the participation of T.N.Cs in the manufacturing sector of developing countries is whether the ownership factor has made any difference to export or import behaviour of the economy. In other words, had the foreign firms been owned by nationals, would they have tended to earn more foreign exchange ? An answer to this question will depend largely on the export and import-

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propensities of foreign-owned firms relative to domestically owned firms.

Arguing in the Hymer-Kindleberger tradition one can say that T.N.Cs are likely to be major developers and owners of new as yet undeveloped, technologies for future use in manufacturing exports from LDC. This is so because the development of new ideas and techniques, even if they are means of using unskilled labour more intensively, is highly skill-intensive and T.N.Cs are likely to have the financial and technical capacity to conduct such R & D. Thus, foreign collaboration can be an important channel for transfer of technology to the LDCs. Considering the export-generating dimension in general, it can be argued that technology transfer widens the export horizon of the recipient countries and improves their capacity to export. In addition, the export potential of manufactured products is correlated with marketing characteristics. Under the foreign collaboration arrangement for technology transfer, a developing country acquires at a marginal cost the externalities of access to market information, well established distribution channels and networks. Export marketing advantages of T.N.Cs explain the fact that despite frequent restrictions placed on their exporting activities by their head offices, their subsidiaries and affiliates frequently export greater shares of their output than local firms and account for a disproportionate share of Latin-American manufactured exports.

All this is not to say that T.N.Cs are a source of unmitigated

boon for less developed countries (LDCs) in the export sector. Vaistos has pointed out that the technology-market is characterised by a large number of weak buyers and the dominance of few sellers, meaning thereby that the transfer is unlikely to be at arm's length trade and that price will be determined in a bargaining framework. Given the lack of knowledge about knowledge, that is, technology, extra-market activities and unevenness in strength, bilateral monopolistic bargains are unlikely to generate an outcome unfavourable to the weakest bargainers: in the case of technology transfer, the poor developing countries.

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Firstly, overall global interest of the T.N.Cs that make cross-country investments and transfer technology and other resources requires orienting the structure of production and sales to the respective local markets and preventing competition between members within the international transnational structure in the world commodity market. The fact that contractual restrictions on exports are usually made in collaboration with agreements on technology transfer lends support to the argument. Besides, technology-transfer takes place by and large in response to import-substitution stimuli and the protectionism which such a strategy entails, limits the scope for export development. This is so because there may be inefficiencies of operating under a protective umbrella in terms of higher unit cost of production. This makes the product non-competitive and limits the capacity of the technology recipient to exports.

Secondly, the very mechanism of producing within the vertically

integrated structure of T.N.Cs implied in cross-country investments and technology transfers to take advantage of relative factor price situation may tend to depress the export development of the host country. Moreover these flows give rise to the possibility of price manipulation. The prices firms assigned to the goods they trade internally have a direct bearing on the benefits that accrue to host countries from the presence of T.N.Cs. If transfer price manipulation results in lower reported levels of sales and profits, the consequences of such pricing policies for tax revenues and the balance of payment of host countries would be adverse.<sup>57</sup>

Thirdly, it has often been noted that there is a consistent relationship between the export performance of T.N.Cs and the host country's industrial structure. Unless a T.N.C. has<sup>58</sup> invested in the host country to develop an export platform by exploiting the locational advantages, they tend not to exploit. This is a perfectly rational behaviour on their part though, for if a T.N.C makes an investment in the host country in response to an import-substitution stimuli, exploiting the domestic market must be its primary aim. Only if the going gets tough in the domestic market will an import-substituting DFI lead to exports. Therefore, we often find that a highly protected market structure for a particular product group in the host country (or T.N.C with oligopolistic advantages in the host country's market) leads to poor export performance by T.N.Cs in that particular product group.

There may exist several other potential sources of difficulty

for the LDCs in manufacturing for exports. Specifically, the weak administrative capacity and political power of the typical government in LDCs renders difficult the process of effective bargain monitoring and control with respect to foreign agreements and T.N.Cs. Moreover, the absence of international conventions or rules which might protect LDCs against discriminatory treatment, ( the GATT agreement having formally authorised such treatment in the case of textiles and failed to adopt such procedures to prevent similar events ) might further constrict the export performance of LDCs, the role of T.N.Cs notwithstanding.

2.1.3 Present Study:- In view of the facts stated in the part (b) of section 1.1, the contribution that foreign investors make to the export of manufactured products from LDCs have been a subject of much debate in recent years. We feel that it would be an interesting exercise to delve deeper into the debate with special referencene to India. We have especially chosen India's case because in the Third World, no market economy with a subsatntial industrial sector has constricted T.N.C entry anywhere near the extent of India. This tight exercise of control is not restricted merely to T.N.C. entry, it is part of a system of almost total protection against imports, of restrictions on licensing and of widespread controls. India's overall industrial policy as N.I.C. is different from the one Japan adopted when it was at a comparable stage of development. India is attempting industrialisation with the lowest possible reliance on technology from the industrialised world. The result

is an export performance markedly poorer than other N.I.Cs though India excels as the largest N.I.C.'s exporter of turnkey projects and as one of the leading exporters of industrial technology specifically designed for the Third World. We discuss the policy variables in more detail in the next chapter. Notwithstanding, the overall export performance of the Indian economy, there is a pervasive impression in India, supported by some empirical studies, that T.N.Cs have fared worse in this sector. Before we take up the empirical studies done on India, we take note of some studies done with reference to other countries.

## 2.2 EMPIRICAL EVIDENCE

The issue at hand is clearly an empirical one, and conclusions may vary from country to country. Natke and Newfarmer in their study for Brazil found that foreign-owned companies did not generally have higher export-propensity than domestically owned firms, even after controlling for other variables that might affect that ratio. However a study by Bradford showed that one of the most dynamic Brazilian exports of manufactures, automobile components, had strong participation of transnational corporations. He found that, although there were a number of Brazilian manufacturers in the industry, only T.N.C. have been able to penetrate the markets of member countries of the OECD, and that most of such trade was conducted on intra-firm basis.

In another study Lipsey & Kravis analysed the main trends in the share of exports in sales of U.S. majority-owned foreign affiliates in the manufacturing sector. One of the main findings

was that in the period 1966-1967 there was an increase in the share of exports of these affiliates in most parts of the world, particularly in the more industrialised developing countries of Asia. This increase in Asia was less than its counterpart in Latin America. Difference in the export behaviour of U S firms in Asia and Latin America could be due partly to the greater emphasis on export promotion in the developing strategies of countries in the former region.

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Jenkins found that the share of foreign firms in Mexican manufactured exports was over one-third in 1974. This share was highest in products requiring relatively advanced technological capabilities, notably electric machinery and transport equipment. On the other hand, the share was very low in low technology sectors such as textiles, wood, furniture and tobacco. For the

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Republic of Korea Sung Hwan Jo found that the share of foreign firms in manufactured exports was comparable to that of Mexico. He also showed a striking concentration of exports by T.N.Cs in technologically advanced sectors, with the exception of the transport sector which is predominantly national in Republic of Korea.

As far as studies on comparison of the relative export performance of domestic and foreign firms are concerned, one

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such study has been done by Reidel. He conducted research upon 443 Taiwanese export-oriented firms in six industries of which 30% had foreign participation. For each industry he used discriminant analysis to identify the characteristics of firms in which there was foreign ownership. He came to the conclusion

. that only in the admittedly special case of electronics the export propensity of foreign firms was significantly higher than those of local firms. But the most systematic published attempt to analyse the relative performance of foreign and domestic firms comes from Cohen. Analysing data for three countries--<sup>65</sup> Singapore, S.Korea, Taiwan in 8 industries he comes to the conclusion that the local firms not only buy more from other local firms compared to foreign firms, but also have slightly higher propensity to export.

Another group of studies is concerned with appraising the overall impact of T.N.Cs on the exports of manufactures from developing countries. The most prominent among these studies is the one conducted by Lall.<sup>66</sup> He concludes that foreign firms have not only played an important role in the export of high-technology products, but that the growing importance of these products in total manufactured exports is causing the role of T.N.Cs to increase. These industries are characterised by rapidly changing technologies which are developed within the T.N.Cs and are in the nature of intangible assets for which markets are imperfect. This explains why foreign firms are very prominent in the export of electric and electronic exports from developing countries. If foreign-owned firms have marketing advantages that are not available to the domestic firms and if, in addition, the protected industry is characterised by economics of scale, the parent firm may decide to relocate a significant share of its global production capacity to the protected host country and export from there to other markets.



In conclusion we can say that T.N.Cs have played an important role in the expansion of exports of manufactures from developing countries. However on the basis of available empirical studies their contribution should not be overestimated. In some countries, rapid export-oriented industrialisation has been achieved essentially by domestic firms. Moreover, F.D.I for the purpose of producing manufactures for world markets has been concentrated in a few countries at middle and upper income levels which had already undergone substantial industrialisation, had a skilled and disciplined low-wage labour force and where the policy environment favoured the growth of exports generally. In the absence of these conditions, it is doubtful that the participation of T.N.Cs could initiate a sustained expansion in the exports of manufactures. In lower-income countries the T.N.Cs have shown little inclination to invest in the manufacturing industry. It is possible that the incentives of locating the production of manufacture of exports in these countries have not been strong enough to compensate for disincentives. Among the former are low wage costs and in some cases, proximity to markets. The adverse factors could include the low level of skills of the work force and the absence of adequate infrastructure. Moreover their performance is also related to various policies in the home country. It can be argued that a lower import-barrier in home markets would allow them to reap a larger share of rents and quasi-rents, this is especially for large companies which are engaged in intra-firm trade.

## 2.3 EVIDENCE FROM THE INDIAN CASE

2.3.1 We now shift focus to empirical evidence from India. One of the oft-quoted works on this subject is that of Nayyar<sup>67</sup>. Deepak<sup>68</sup> Nayyar, using industry-level data published by R.B.I. and some guesswork, puts the contribution of transnational corporations in India's exports at approximately 5% of manufactured exports from India. He notes that "Hongkong, Taiwan, South Korea and Singapore accounted for nearly half the total manufactured exports from LDCs. Among the remaining LDCs which were leading exporters of manufactured goods, Brazil and Mexico were the only ones where transnational firms played a significant role. In other countries such as India and Pakistan foreign firms were not as important as exporters or, as in Argentina and Columbia, the value of manufactured exports was not very large". Thus, Nayyar stops short of castigating transnational corporations for poor export performance, as has been the want of most academicians writing on the Indian case. We feel that the quantification of the contribution of transnational corporation will not be an useful exercise in the context of the present study. This is so for two reasons. Firstly, we have little reason to expect that the contribution of transnational corporation to India's exports would have changed significantly, since 1978. In view of the facts that the stock of FDI to India has not shown any major upsurge or a shift in favour of export-oriented industries. Secondly, T.N.Cs are allowed a small role in Indian industry and most firms in India, regardless of ownership, are not export-oriented. In view of the heavily regulated entry of

T.N.Cs in India and a very inward looking economic policy, the crucial issue at stake is whether or not foreign firms export more than the local firms.

2.3.2 Here we take note of some major works which have addressed the issue stated above. The standard procedure in most of these works has been to compare the export propensities of T.N.Cs and domestic firms. An I.I.F.T. study has compared the export propensities of 28 T.N.Cs in India with 18 local firms spread over 6 industries. This study found significantly lower export propensities for transnational corporations compared to domestic firms, and has concluded that the former have performed badly in the export sector. We feel that given the nature of empirical evidence in this study the conclusion, is somewhat unwarranted. Firstly, a valid comparison of T.N.Cs and local firms should only include firms which are similar in size, or technology and are regulated by similar official regulations. The IIFT study has failed to put such restrictions on its sample. Secondly, simple comparisons of export propensities of T.N.Cs and local firms may be misleading if they do not take policy factors into account. Such an exercise will fail to show how much T.N.Cs may contribute under different policy regimes. Thus high rates of local taxes, difficult labour conditions, requirement of high local equity participation, restrictions on profit remission or an expansion may, all serve, to reduce the appropriability of the benefits that the T.N.C has to offer. Under these circumstances, foreign firms may turn out to have lower export propensities than others, even in sectors offering strong comparative

advantages.

While there can be no doubt that the structure of the national economy cannot simply be left to be determined by the views of T.N.Cs, Sanjaya Lall has shown that the contribution of restrictive policies pursued towards imports, inward foreign investment and licensing is partially responsible for India's poor export performance and for the low average growth in per-capita income.

By its policies India has obtained a greater technological autonomy as compared to other NICs. But this independence has been paid for with slower growth. According to Lall, the technological prowess of Indian T.N.Cs investing abroad could be economically beneficial for the home economy and could create export drive, if conditions of India's economy were not so restricted and distorted. We should be careful to note that we are not suggesting the appropriateness of the South-East Asian model of export-led industrialisation for the Indian economy. In larger countries, since non-traded goods are typically more labour than in either import-substituting or export manufacturing industries, policies designed to increase employment through shifts in output mix should on the face of it, place greatest emphasis on increasing the weight of the non-traded goods sector : construction, food production, services, building materials, etc..etc. Demand can be shifted towards the desired pattern of output through the increased use of appropriately directed state expenditures and through redistributing private income in the direction of those with marginal preferences for the goods from the favoured sectors. If the degree of political change required

to produce these first-best employment-creating and income redistributing policies is out of question, then labour-intensive manufacture for exports is still preferable to further import-substituting industrialisation. The point is that to forestall the adverse effect of T.N.Cs on the economy and / or to encourage their positive impact appropriate policies must be chosen by the Government. In the absence of such policies we may not only have poor export performance on the part of T.N.Cs but also unequal distribution of gains from trade as between LDCs and the industrialised world. Thirdly, Lall's study also has a serious methodological problem. A simple comparison of export propensities of local and foreign firms confuses the influence of 'foreignness' with that of other factors which may be associated with a foreign presence. In other words the difference in the export propensity of foreign and local firms does not establish the causality of this difference. Hence it is wrong to attribute the difference in export-propensities of foreign and local firms only to the difference in the nature of ownership. It is quite possible that foreign firms have higher export propensities compared to local firms, not on account of their foreignness per se, but because they are active in high-technology areas, produce on a larger scale or have higher entrepreneurial ability.

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2.3.3 A Study By Sanjaya Lall And Sharif Mohammed is a notable exception to the simple comparison approach. They have econometrically examined the export performance of T.N.Cs in India.

Their work seems to be influenced by a similar exercise conducted by Newfarmer & Marsh (1981) for Brazil. Drawing on a sample of over 500 local and foreign firms, Newfarmer & Marsh use foreign ownership as part of a set of independent variables to explain firm-level export propensities in a multiple regression analysis. Sanjaya Lall & Sharif Mohammed have employed a similar methodology. They have taken industrial-level variables, inserted control variables for influences on export propensities not directly related to the foreign-local distinction. Clearly a valid comparison of T.N.Cs and local firms should only include firms which are similar in size, technology and official regulations. In the Indian context, this essentially involves comparing foreign affiliates with large private sector firms. Published industry-level data by R.B.I. solicitates just such a sample. From this data, Lall & Mohammed have used data on 24 manufacturing industries which contain slightly over 1,100 enterprises. The basic hypothesis they seek to test is whether foreign ownership at the industry-level has had a positive effect on export propensities.

Specifically export propensity (measured as exports deflated by total industry sales) is regressed on four independent variables namely (i) foreign shares- as measured by the share of dividends paid abroad in total dividends paid; (ii) incentive-- the total value of export incentives of various types paid to each industry by the Government in 1975, expressed as a percentage of the value of exports by each industry ; (iii) highly paid employees-- proportion of total wages & salaries accruing to

highly paid employees ( those paid above Rs. 3000/- )- this is used as a measure of managerial intensity or skills at industry-level and (iv) capital-output ratio (K/O)- measured by total fixed assets deflated by sales. They find positive signs for incentives ( almost reaching acceptable level of significance ). This suggests that the incentive system probably has a distinct positive ( though rather a small one ) effect on export propensities. Highly paid employees and capital-output ratios have significant ,negative effects. The proportion of total wages and salaries accruing to highly paid employees is used as a measure of the level of technical sophistication for that product. Current theories of comparative advantage argue that developing countries like India face a relative handicap in exporting in industries which require high levels of skill and technology. Therefore, theoretically one expects a negative sign for this variable. As per the Heckscher-Ohlin (H-O) theorem an economy should export a good in which it has comparative advantage. Developing countries like India tend to export technically matured products thus specialising in inter-industry rather than intra-industry trade. It has been shown that H-O theorem holds good for the former kind of trade. Hence India, which has a comparative advantage in labour-intensive products will tend to have lower export propensity, the higher is the capital-intensity of goods manufactured. Once again a negative sign is expected for the K / O (which is a proxy variable for factor-intensity). Management-intensity serves to direct industries away from foreign market contrary to what one would

expect in a more developed, less regulated, more market-oriented economy. The pattern of exports of the large corporate sector is weighted against capital-intensive activities. This may be on account of the fact that Indian policies have tended to prevent the realisation of scale economies and have retarded technological upgrading. Foreign presence has a positive effect on export propensities, however the level of significance is not high.

This work suggests that the negative results of the previous studies, based on simple comparison of local and foreign firms are subject to severe qualifications and greater foreign presence may in fact be conducive to better export performance in India.

As noted earlier, the study being analysed in this sub-section seems to be based on a sound methodology. The only flaw seems to be the use of an extremely simple model which does not capture all the factors that may affect inter-industry variations in export propensities. There are at least two important factors which such a model fails to capture. Firstly, as noted earlier the structure of domestic market can influence the export performance of the T.N.Cs. Secondly, the nature of the domestic market will also affect the export performance of T.N.Cs., e.g. size, degree of concentration, degree of protection.

2.3.4 Another important study on the subject under consideration has been conducted by Subrahmanian & Pillai. They have made a



comparative analysis of the export performance of foreign collaborations and their indigenous counterparts in similar products. The basic method of analysis used in the study is a comparative-static framework. Analysing the growth trends in India's manufactured exports, they have chosen two broad groups, namely, engineering goods and chemicals. Within these two industries certain products are selected on the basis of their relative shares in the export basket of the particular industry group. The authors then proceed to identify the major producer-exporter units in these commodities which could be regarded as similar to each other in terms of item of production, size and age. The units are then grouped into four clusters of foreign association measured in terms of foreign ownership-mix and the nature of foreign collaboration. The selected units are then classified into 4 clusters of foreign association ordered in a descending scale of foreign control that is, clusters (1) High (2) Medium (3) Low and (4) No formal association/control.

A composite index combining the criteria of (i) proportion of output exported and (ii) rate of growth of the share of exports in total production is used to determine the degree of export performance of different clusters of foreign association. The composite export performance index used in the study is of the following type :

$$E P = n - 1 \sqrt{\frac{\sum_{t=1}^n \frac{E_t}{E_1}}{\sum_{t=1}^n P_t}}$$

where

$$E_t = \text{export in the year } 1,2,3,4$$

$$E_1 = \text{export in the base year}$$

$$P_t = \text{share in the production exported in the year } t: \text{ it is a weighted share.}$$

In the engineering goods industry the authors note that domestic firms with relatively low degree of foreign association have performed relatively better in export performance as compared to firms with high degree of foreign association. The low export performance of firms with foreign control is ascribed to the strategy of technology suppliers to allocate the world market amongst the units within the transnational structure rather than allowing their units to cut across in each other's domains.

The picture in the pharmaceutical industry is found to be much the same. Here, Indian-owned enterprises with foreign technical collaboration have done marginally better than joint-ventures and foreign subsidiaries. The export performance index of indigenous enterprises with indigenous technology was found to be relatively poor, but foreign subsidiaries have not fared any better. The authors here are of the view that given the technology and marketing factor's role in the export of pharmaceutical products, association with foreign enterprises did help the Indian enterprises in expanding the exports ; but the controlled nature of the foreign collaboration as in foreign subsidiaries and foreign majority held enterprises seems to limit export development.

The pattern of trade behaviour of foreign-controlled enterprises ( cluster 1 ) in dyestuffs and intermediates is found to be relatively inward oriented, rather than export generating. The completely indigenous enterprises ( cluster 4 ) do perform better than the foreign-controlled group. Overall, the case of Indian dyestuff industry suggests that the behaviour of foreign collaborators would be motivated to maximise surplus flows from the Indian domestic market rather than from increasing India's share in the world market. Based on this empirical evidence, the authors draw the conclusion that the policy approach based on the relaxation of controls and regulations to allow a ' free play ' for foreign collaboration on grounds of its export expansion effect is irrational. They argue that the encouragement of T.N.Cs on the basis of their export generating dimension may lead the Indian economy to a position of perpetual dependence.

In their view the question of controlling foreign collaboration boils down to the formulation of a technology policy that regulates for the minimum import of foreign technology and encourages the maximum use of local technology.

This study is based on a sample of major producer-exporter units in commodities which can be regarded as similar to each other in terms of production, size, age. Unlike some of the studies quoted earlier, the work of Subrahmanian and Pillai does not seem to have any sampling deficiency. A valid comparison of T.N.Cs

and local firms should only include firms which are similar in size, technology and exposure to official regulations. However, as with the studies quoted earlier, this work also does not take policy factors into account and so does not show how much T.N.Cs may contribute under different policy regimes. Moreover, the reasons given by the authors for poor export-performance of T.N.Cs are at best conjectures and therefore do not warrant strong policy conclusions. As noted earlier in an economic regime of high rates of local taxes, requirements of high local equity participation stringent price controls, restriction on profit remission or on T.N.C. expansion and given the presence of several more attractive production bases in other developing countries, foreign firms may turn out to have poorer export performance than others. <sup>76</sup> However, this does not warrant the conclusion that per se. T.N.Cs have limiting consequences for exports. The export performance of T.N.Cs is shaped also by the nature of the host country's economic policy and environment apart from their nationality.

We conclude by noting that most of the existing empirical evidence in the Indian case has tended to show that T.N.Cs are poorer exporters compared to the local firms. Based on this, policy conclusions have been drawn to suggest that there is little to be gained in terms of exports by permitting T.N.Cs in India. On the contrary, it is argued that such investments by T.N.Cs may stifle local enterprise. Our view differs from this contention. Specifically, we propose that (i) the existing empirical evidence is too sketchy to warrant such conclusions and (ii) if at all T.N.Cs have performed poorly compared to the

local firms it is not solely on account of the difference in the source of ownership ( i.e. local or foreign ) but among other things also on account of the Indian Economic Policies. Given the nature of our contention it is obvious that an econometric method of analysis has to be used to investigate the issues at stake.

#### 2.4 SUMMARY

In summary in the present chapter we have analysed some of the issues at stake in analysing the export performance of T.N.Cs. The theoretical case for whether the T.N.Cs are better export performers than the local firms or not is ambiguous. The existing empirical evidence on the subject suggests that T.N.Cs across the world are playing major roles in the export development of manufactures especially from NICs . The evidence on whether foreign firms tend to have lower or higher export propensity compared to the local firms is mixed, suggesting that the export-performance of T.N.Cs also depends on the country-specific factors such as cost of labour, economic policies, tariffs etc.. The evidence from India suggests that the local firms are better exporters compared to the foreign firms. However, we have contended that the existing empirical evidence on this issue in India is sketchy because of methodological errors and because they tend to ignore the policy factors in India. Therefore, in the next chapter we intend to turn our attention to the economic policies governing Foreign Direct Investment in India and their implications for export performance of T.N.Cs .

## CHAPTER III

### INDIAN INDUSTRIAL POLICY FRAMEWORK AND ITS IMPLICATIONS FOR EXPORT PERFORMANCE

#### 3.1 INTRODUCTION

In the third world, no market economy with a substantial industrial sector has restricted the entry of T.N.Cs anywhere near the extent of India. The regulatory framework has been so tight that in eight years 1978-78 the stock of FDI increased by only \$850m. As compared to a net inflow of private foreign investment of \$2,200m. in Brazil in 1979 alone. This exercise of tight control is not merely restricted to T.N.C. entry, it is a part of a system of almost total protection against imports, of restriction on licensing and of widespread price controls. We feel that most academicians, while analysing the role of T.N.Cs in the export sector have not paid adequate attention to the policies governing the FDI in India. Given the restrictions which are placed on T.N.Cs equity shares and expansion, and given the presence of several more attractive production bases in other developing countries, it is quite plausible that the export performance of T.N.Cs will be lower than those of local firms. In view of these facts it is imperative that we briefly discuss the various policies governing T.N.Cs in India with special emphasis on their consequence for the export performance of T.N.Cs .

Changes in the structure of a country's exports result from changes in the structure of domestic production. A study of the industrial pattern is the beginning of understanding the

pattern of development of exports. The next section is devoted to a brief discussion of the industrialisation strategy. Section 3.3 analyses the Indian approach to FDI. In section 3.4 we discuss in detail certain specific aspects of the policy towards T.N.Cs in the Indian export sector. In the last section we conclude and summarize the discussion.

### 3.2 INDUSTRIALISATION STRATEGY

#### 3.2.1 THE ROLE OF INDUSTRIALISATION STRATEGY :-

Industrialisation strategies and policies reflect the objectives and measures adopted by a country to enhance the structure, enlarge the size and promote the growth of its manufacturing sector and to secure adjustments of the sector as a consequence of domestic and external economic conditions. Amongst other things the industrial objectives may also reflect the country's perceptions of the degree to which its manufacturing sector or economy at large should be regionally and / or internationally integrated. Furthermore, to the extent that T.N.Cs and their behaviour are a function of the production and market characteristics (which itself depends on the specific industrialisation strategy adopted by the country concerned) the nature of the contribution that these corporations can make to industrialisation of the developing countries is likely to be widely varied. An analysis of this nature must of course recognise that T.N.Cs are market-oriented. Their goal is not primarily to fulfil developmental objectives of countries but to earn profits.

3.2.2 IMPORT-SUBSTITUTION LED STRATEGY :- The first phase of the Indian strategy had a distinct bias towards import-substituting industrialisation. In this phase the local production of non-durable and durable consumer goods intermediate process industry goods and differentiated capital goods were protected against foreign competition by the erection of high import tariffs. That the import-substitution development strategy did help in changing the industrial structure of Indian economy cannot be denied. The trend of industrial production showed the highest growth rate in basic industry followed in turn by the capital goods and the consumer goods industry. However, such a strategy generated trade flows of import-creating type, with the disadvantages showing up in the stress and strain on B.O.P. Consequently, the inward-oriented strategy itself came under direct attack in analytical discussions. Clearly, under such a strategy, T.N.Cs like the other firms in India tended to have very poor export performance. Foreign collaboration was encouraged only for the import of capital, technology and other resources from the developed economies.

3.2.3 EXPORT-LED GROWTH STRATEGY :- The rationalisation of the over-valued exchange-rate by devaluation in 1966, followed by the intensive efforts at export-promotion mark the shift towards outward-oriented strategy though the shift is not a very pronounced one. Various export promotion schemes such as export-subsidisation policies of fiscal nature ; import replenishment scheme were announced. Specifically, the exporters



are given cash subsidies, the extent of which is determined in each case on merit. The import duties paid on the imported inputs for the production of exports are refunded under the Duty-Drawback Scheme. Import-entitlement licences are given to exporters of a commodity to import the raw materials etc. required in the manufacture of exports, up to a specified percentage of the export earnings. This is called the Import Replenishment Licence Scheme. However the restrictions on foreign capital inflows, indigenous content conditions continued unabatedly. The period after The First Oil Shock of 1974 has witnessed some half-hearted liberalisation towards T.N.Cs. On the one hand the Government has shown some favour towards export-oriented foreign collaboration, on the other hand it has constrained them by severely diluting the foreign equity participation in such firms under the Foreign Exchange Regulation Act (F.E.R.A.). We believe that the various export promotion policies have barely offset the costs incurred by T.N.Cs for having to use "low-quality and high cost" inputs and have not added substantially to making their products internationally more competitive. On the other hand various restrictive clauses on the operations of T.N.Cs, may have concealed the true extent to which they could have contributed to the Indian exports.

### 3.3 THE APPROACH TO FOREIGN DIRECT INVESTMENT

3.3.1 THE APPROACH DEFINED :- There are two distinct but related sets of ideas behind the Indian approach to FDI. The first set of ideas relates to attracting foreign involvement in India. The

second is to ensure an appropriate selection of T.N.C involvement in keeping with the developmental priorities. The first set of ideas was clearly demarcated in the Industrial Policy Resolution of 1948. It stated that "...it should be recognised that the participation of foreign capital and enterprise, particularly as regards industrial techniques and knowledge, will be of value to the rapid industrialisation of the country....". The first five-year plan gave a broad direction to the flow of foreign capital. It emphasised the latter set of ideas and stated that ".....in view of the fact that investment of foreign capital necessitates the utilisation of indigenous resources, and also that the best use of foreign capital is as a catalytic agent, for drawing forth large resources of domestic investments, it is desirable that such investments should be channeled into fields of high priority".<sup>80</sup>

As regards the type of Government interventions increasing the attractiveness of the country to FDI, the Indian Government has been very active. It has invested extensively in energy, transport and communications. Also the Indian Government has consistently offered foreign enterprise a number of incentives. They include depreciation allowances ; tax holidays and tax exemptions ; priority access to credit, foreign exchange, import and equipment; and subsidies. In addition the Government has set up export-processing zones at Kandla and Santa Cruz with the express objective of attracting foreign investments and foreign technical collaboration.

In pursuance with the latter set of ideas the Government of

India has been regulating the entry of T.N.Cs into the Indian economy. In 1969 the Government of India issued three illustrative lists. The first list comprised of industries where both financial and technological collaboration would be permitted, The second list included industries where only foreign technological collaboration would be permitted and the third list consisted of industries where no foreign collaboration-technical or financial- was considered necessary. Since 1969, the terms on which foreign technical collaboration could be permitted have been made more specific. Besides, the policy has been intergrated into the overall regulatory framework pertaining to foreign participation in India's economicdevelopment. The long-term goal of promoting technological self-reliance has remained the same within the new framework. But the emphasis has shifted from the question of indigenous availability to that of the necessity for continued inflow of technology in sophisticated and high priority areas. The new policy is designed to channel imports of technology into specific areas where (i) sophisticated technology is required, (ii) critical production gaps exist, or (iii) there is a potential for increasing exports.

The brief review of the approach to foreign investment shows that right from the very begining the objective has been to develop self-reliance in technology ; hence emphasis has constantly been laid on adapting foreign technology, to the extent possible, to suit India's requirement and also to develop indigenous technology.

### 3.3.2 APPROACH TO FDI AND ITS IMPLICATIONS FOR EXPORTS BY T.N.Cs :-

The approach to FDI in India has got special implications for the export performance of T.N.Cs . A casual perusal of India's industrial policy shows that ' exports have been accorded the status of a priority sector ' in the Indian plans. It follows then that the FDI inflow be especially encouraged to the export sector. The next section will show how the T.N.Cs setting up primarily export-oriented units are accorded preferential treatment. This preferential treatment of T.N.Cs primarily involved in exports has taken three forms : (i) setting up of Export Processing Zone (E.P.Z) for attracting investment, especially foreign capital and technology in order to boost manufactured exports. A number of incentives and facilities are available in the zone : capital goods and equipment are permitted to be imported free of duty from the preferred zone. Imports of raw materials, components and spares by zone enterprises are allowed free of custom duties and other duties. The facilities in the zone include transport and communication, water and power, and other infrastructure. Moreover, streamlined procedures and an autonomous administrative agency have been provided to assist the entrepreneurs, thus ensuring a smooth working of the zone ; (ii) exemptions from Foreign Exchange Regulation Act and Industrial Development and Regulation Acts, thus unencumbering the T.N.Cs primarily involved in exporting their products from carrying out dilution of foreign equity participation and from the restrictions on the expansion of their activities ; (iii) allowing imports of technologies to

exports and other high priority sector based on the presumption that technology transfer widens the export horizon of the recipient countries and improves their capacity to export. In the present study we have not concentrated on export processing zones, but Subramanian and Pillai's study provides a good framework to analyse the export performance of T.N.Cs. Subrahmanian and Pillai have made no attempt to study the relative export performance of T.N.Cs and domestic firms in E.P.Z. However, they find that upto December 1977 only Rs.664 lakh worth of exports were made as against the projected figure of Rs.72 crores. We do not have the data to judge the relative contribution of T.N.Cs and domestic firms. But the fact that by December 1977, 23 units with foreign collaboration as against 5 domestic units were set up in the zone, shows that the T.N.Cs are more responsive to "liberalisation stimuli" in the export sector (though this proposition remains to be tested with more extensive data).

The effect of F.E.R.A. and I.D.R. on the export performance of T.N.Cs will be explored in more detail in the next section. In the rest of this section we concentrate on the effect of technology transfer on the export performance of the T.N.Cs.<sup>82</sup> India initiated control on technology transfers just after independence. The declared policy was to promote indigenous technological research and development appropriate to the factor endowments prevailing in the country and keeping down the costs<sup>83</sup> of the necessary technological imports. The Indian authorities prefer outright purchase of technologies. Only when that is not

feasible, the Indian party may consider royalty payment. The percentage of royalty depends on the nature of technology but should not ordinarily exceed 5%. The royalty payment is also subject to a 40% tax. Wherever appropriate, payments of fixed amount of royalty per unit of production is preferred. Royalty payments are also limited to a period of five years during which the Indian party is supposed to have undertaken R&D or similar measures to fully absorb the technology. In addition, the Indian party should be free to sub-license the transferred technology to another Indian party, should it become necessary.

The entire gamut of foreign technology policy in India misses the essential point that technology does not come cheap. It is not and cannot be made fully available to all possible users. As long as its creation is risky and expensive, and its utilisation a source of income, buyers must accept that innovators must necessarily appropriate substantial benefits if they are to innovate at all. It is for this reason that leading innovators in the developed world are reluctant to sell the most recent and profitable technologies to unrelated firms. They may be persuaded to do so if the royalty rates are high and the transfer is hemmed in by provisions to protect the licensors main market and long-term profit strategy. The Indian combination of low net royalties and requirement to permit sub-licensing had the effect of inducing second or third grade technology to be sold in some instances. Tight control on capital goods imports and rigorous indigenisation requirements reduced the scope for paying for the technology in terms of

products imported from the licensor.

The highly protected nature of the Indian market enabled producers to survive with obsolete or second-grade technologies in the areas of production allotted to them. But combined with the disincentives to exporting inherent in trade regimes,<sup>84</sup> this meant that opportunities for exploiting the industry's emerging comparative advantage in international markets were not exploited.

Moreover the rather static view of technology transfer inherent in the short life permitted to licenses meant that licenses were unable to keep up with changes in technology. This is so because the mastery of a certain level of know-how may not imply the capability to further develop that know-how in line with developments abroad.<sup>85</sup> Also, it is doubtful whether a five year period was even sufficient to absorb a given complex technology fully. The interplay between domestic technological effort and technology import is, of course, the crucial and little-understood issue behind these policies governing technology import. The presumption on the part of Indian policy-makers has been that technology import and local technological efforts are substitutes.<sup>86</sup> However, Blumenthal has shown that this relationship is a continuously varying one. At certain stages the two are substitutes, and intervention is required to bring private efforts in line with social needs. At others, they are complimentary.

Therefore, on the whole it seems that technology imports have not in anyway significantly contributed towards making Indian

exports internationally more competitive. We investigate this issue further in our empirical work.

### 3.4 SALIENT FEATURES OF THE POLICIES GOVERNING AND REGULATING FOREIGN INVESTMENT

#### 3.4.1 RATIONALE OF THE REGULATORY POLICIES IN INDIA :-

The single major aim of specific policies and regulations governing foreign investments in India has been to aim for a surplus of benefits over costs and to minimise disadvantages from T.N.C operations.<sup>87</sup> However, at times the Government has also acted to reduce the country's dependence on T.N.Cs by duplicating and replacing their activities through establishment and enlargement public of sector undertakings. The policy with regard to the oil industry provides a good illustration of this. This conformed to the Government's overall policy of promoting internally-oriented industrial development. While the approach to foreign-investment was spelt out in 1948, there was no specific law to regulate foreign investment in India until Foreign Exchange Regulation Act (F.E.R.A.) of 1973 was passed. We now shift the focus to specific aspects of the regulatory framework of these policies and their influence on the export performance of T.N.Cs.<sup>88</sup>

#### 3.4.2 FOREIGN EXCHANGE REGULATION ACT :-

F E R A was promulgated in 1973 and came into force on January 1, 1974. The legislation aimed at regulating foreign exchange transactions with a further view to conserving the foreign resources and proper utilisation thereof in the interest of the country's



economic development. According to the section 29 of this act, all non-banking foreign branches and subsidiaries with foreign equity exceeding 40 percent had to obtain permission from R.B.I. to carry on their business. They also had to obtain permission to establish new undertakings, to purchase shares in existing companies, or to acquire wholly or partly any other company. Guidelines for administering this section of F E R A were announced in December 1973 and later amended in 1976.<sup>89</sup> The original guidelines were used mostly for disposing of cases where companies were permitted to carry on at existing levels of foreign shareholding. Most of the other cases were not settled according to the rules of 1973, but according to the amended rules of 1976. Consequently, it seems appropriate to concentrate on the F E R A guidelines issued in 1976.

These guidelines provided for three levels of foreign equity : 75 percent, 51 percent and 40 percent and upto 74 percent, on condition that they were engaged in (i) core industries ; (ii) predominantly export oriented production ; (iii) activities requiring sophisticated technology or specialised skills ; or (iv) tea plantation activities.

If the turnover from any or all of these activities combined exceeded 75 percent of the total turnover of the company, it was entitled to retain upto 74 percent foreign equity. The same level applied to companies exporting more than 40 percent of their own production or the equivalent of at least 60 percent of their total turnover. Companies exporting all of their production were allowed 100 percent foreign equity.

If the turnover from the aforementioned activities exceeded only 60 percent of total turnover, the company was permitted to retain upto 51 percent of foreign equity provided it exported an equivalent of at least 10 percent of its turnover. the same level applied to companies where exports exceeded 40 percent of their turnover.<sup>90</sup>

F E R A guidelines also suggested that the foreign share capital should be by way of cash without being linked to tied imports of machinery and equipment or to payments for know-how, trade marks, brand names, etc...

In sum, there are two notable points on F E R A rules which need special mention. Firstly, these rules expressed the Government's endeavours to force T.N.Cs to use their superior access to global distribution and marketing systems, with a further view to improving the country's B.O.P. position. Secondly, it appears that the strategy was based on the assumption that a reduction in foreign equity participation would automatically bring about a reduction in remittances abroad.

In the present study we are concerned more with the former point rather than the latter. But we think that it is advisable to mention some important facts about the latter point. Martinussen<sup>91</sup> has cited some empirical evidence on this issue. He showed that the share of dividends paid abroad peaked in 1978-79 and started decreasing afterwards, but not to the level prevailing before the enactment of F E R A. It seems that while carrying out the

dilution of foreign equity, they decided to repatriate substantially larger profits in the form of dividends. As far as effect of FERA on expenditure in foreign currency is concerned, it is pointed out by Martinussen that the import of raw materials and components account for the bulk of foreign exchange utilised by foreign controlled companies. In view of this, it is obvious that the F E R A strategy of equity dilution cannot be the only, nor even the main instrument for achieving a substantial reduction in the total utilisation of foreign exchange by T.N.Cs in India. But the equity dilution process directly affected the magnitude of technical payments remitted abroad. F E R A brought about an increase in the relative share of foreign minority-owned companies and, consequently an increase in the relative share of technical payments.<sup>92</sup> In sum it appears that the F E R A strategy of equity dilution has not brought any reduction in remittances abroad. On the contrary such a strategy may have increased the remittances abroad.

We can now discuss the issue of the impact of various exemptions granted from F E R A on export performance of the T.N.Cs . As is clear from the above discussion, these exemptions are granted either to primarily to export-oriented firms or to those firms which make substantial contribution to import-substitution in the core sector of the economy. However, it is unlikely that a substantial number of T.N.Cs would have gained from exemptions from F E R A , in view of the required condition of extremely high export-orientation for such T.N.Cs . Very few T.N.Cs would have increased exports as compared to net sales in order to

obtain preferential treatment under F E R A . Most Indian firms, whether domestic or foreign, are oriented towards the internal market. This was an entirely rational behaviour by the firms, for the estimates by Bhagwati and Srinivasan indicates that the 'Purchasing Power Parity-Effective Exchange Rate' for imports was consistently higher than that for exports throughout the fifties and sixties. In other words, the number of rupees earned by producing import-substitutes would exceed that which could be earned by producing for export market because the domestic price of import-substitutes would exceed comparable imports by the extent of tariffs and quotas on imports.

Since early sixties this differential has narrowed down slightly on account of export subsidies instituted with the beginning of the third five year plan. However , such subsidies have been , in effect, an attempt at attacking the symptoms rather than the root cause of the export problem. The root cause of the export problem is the indiscriminate import-substitution policy which the country has pursued. Symptomatic of the problem are domestic demand pressures, lack of imported inputs, high costs of production, and the poor quality of the products exported -all of which have constrained India's exports. Most of the export subsidy schemes such as grants, import-entitlement and its later variant, the import-replenishment scheme, were attempts at offsetting these problems.

Therefore, broadly speaking, the bait of exemptions from F E R A would not have induced more T.N.Cs to export more, though it does not rule out preferential treatment for T.N.Cs which

were already primarily export-oriented. Our stand is that the export behaviour of T.N.Cs is explained by the dynamics of profitability considerations and the export competitiveness of its products in the international market.

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On the contrary, Katrak's theoretical and empirical work suggests that F E R A requirement may lead to a reduction in the amounts exported by the subsidiaries. Specifically, on the basis of a very plausible assumption that a subsidiary's production and exports are influenced by the parent company and that the latter takes account of the subsidiary's exports on its ( parent company's ) net global profits, an increase in the subsidiary's exports will have two opposing effects on the parent company's net global profits : the exports will (i) increase the profits of the subsidiary and thereby increase the parent's income from these profits, but (ii) decrease the exports of the parent company and so decrease the profits from parent country operations. These opposing effects will induce the parent company to regulate the exports of the subsidiary so as to maximise its own global profits. Katrak shows that the optimal level of exports, will ceteris paribus depend on the parent company's share in the subsidiary that is, the foreign equity participation. Thus the F E R A requirement may have lead to a reduction in the amounts exported by the subsidiaries of such T.N.Cs which were not primarily export-oriented (that is more than 40 percent of their own production).

In conclusion we see that the authorities hoped that F E R A requirement would enable the conservation of foreign exchange.

The rationale underlying this expectation is that the share of profits accruing to foreign nationals will reduce the outflow of foreign exchange. We have seen that this hope has not materialised, at least in the short-run and that it may not materialise even in the long-run. We have also argued that the implicit assumption that the reduction in parent's companies' ownership will have no effect on subsidiaries' exports is also incorrect. On the whole the hope of conservation of foreign exchange under the F E R A requirement may turn out to be somewhat illusory.

**3.4.3 TAXATION OF FOREIGN INVESTMENT :-** The incomes in the hands of foreign collabotators which are taxed are profits, dividends and royalty. In India, the maximum rate of income tax on a widely held company is 57.5 percent and the maximum rate of tax on a closely held company is 63 percent. A joint venture is also liable to tax on its chargeable profits in excess of statutory deduction of 15 percent of the capital of the company or Rs. 2 lakhs whichever is greater. A tax holiday for five years is given to new industrial undertakings under which income upto 7.5 percent of the capital employed is deducted from taxable profits. Income by way of royalties is charged to tax at 40 percent on a gross basis except that so much of the income which represents a lump sum consideration for the transfer outside India or the drawing of information outside India in respect of any data, documentation, drawing or specification relatind to any patent, invention, model design or trade mark is chargeable to tax at the rate of 20 percent of the gross

amount of such lump sum consideration. Payment received by a foreign investor for the sale of technical know-how, secret processing, would not be taxable if it is a capital receipt.

3.4.4 INDUSTRIES (Development & Regulation) ACT (I D R) OF 1951: Under the provisions of I D R act, it is obligatory for all manufacturing companies to obtain written permission from the government for (i) establishing a new industrial undertaking ; (ii) taking up the manufacturing of a new article ; (iii) substantially expanding the capacity of an industrial undertaking ; and (iv) changing the location of an existing manufacturing unit.

Companies coming under the purview of the I D R act are required to obtain several approvals from the government, which more often than not is a long drawn and tedious process. The process includes a letter of intent which must later be converted into an industrial license, when the company has secured other approvals. After having obtained a letter of intent, the company may need the consent of the Foreign Investment Board (F I B) regarding the terms of foreign collaboration. F I B determines permissible foreign equity levels in accordance with the stipulations contained in the F E R A guidelines. After having obtained F I B approval, the company may have to get a capital goods and foreign exchange permission, depending on the amount of imports and remittances in foreign currency envisaged in the proposal. If the company comes under the purview of the M.R.T.P Act, it must also secure clearance for the proposed project from the Department of Company Affairs.

It is obvious from here that this kind of industrial approval system is hardly encouraging for the export performance of either T.N.Cs or domestic firms. It results in avoidable delays in project implementations and consequent project cost escalation. This tends to make the Indian industries less competitive in the international market. This argument has special implications for T.N.Cs. Given the presence of less restrictive and more efficient export platforms in other countries T.N.Cs will not come to India with the specific motive of exporting their products to make use of the particular comparative advantage India may possess.

### 3.5 SUMMARY

In this chapter we argued that the type of industrialisation strategy and the industrial policy framework adopted by India was not particularly suitable for the exports of manufacture goods, particularly so for T.N.Cs in India. The import-substitution strategy created trade flows of import-creating type and strain on B O P. The second phase of industrialisation was based on an export-led growth strategy, with special emphasis on subsidisation of exports. However, such policies barely offset the T.N.Cs for having to use 'low-quality high cost' inputs and did not make them more competitive. The approach of F.D.I was defined in the Industrial Policy Resolution in 1948. It aimed at regulating F D I in accordance with the plan priorities. Exports were treated as a priority



sector. Preferential treatment was accorded to T.N.Cs setting up industries primarily for exports. However, the clauses on the restrictions on the import of technologies tended to nullify the gains accruing to T.N.Cs on account of preferential treatment. The specific policies governing and regulating foreign investment have aimed at extracting the optimum surplus of benefits over costs from T.N.Cs. However, such policies have created avoidable restrictive clauses on T.N.Cs and as a by-product harmed the process of export-development by T.N.Cs. The rationale underlined the equity dilution process under F E R A requirement is that the reduced share of profits accruing to foreign nationals will reduce the outflow of foreign exchange. This expectation of authorities has not been realised at least in the short-run. On the contrary, equity dilution process may lead to reduction in the amount exported by the subsidiaries. Various other restrictive and regulatory causes under I.D.R Act and M.R.T.P Act has precluded the entry of T.N.Cs into India with the specific motive of exporting.

## CHAPTER IV

### RESEARCH METHODOLOGY AND DATA BASE

#### 4.1 INTRODUCTION

The present chapter is devoted to a description of the research methodology and data base that has been employed in the present empirical investigation. The existing literature offers several methodologies, and they have been used to analyse the relationship between T.N.Cs and export performance by various authors.

In the next section we critically examine the methodologies used by various authors. Section 4.3 is devoted to a discussion of the methodology employed by the present study in exploring the relationship between T.N.Cs and export performance in India. In section 4.4 we seek to comment on the database employed by us. Section 4.5 summarises the discussion of the present chapter.

#### 4.2 SURVEY OF METHODOLOGIES

4.2.1 CONTRIBUTION OF T.N.Cs TO TOTAL EXPORTS :- <sup>96</sup> Nayyar has computed the contribution of subsidiaries of foreign companies in the total exports of ten countries, including India. One presumes that the main idea behind such an exercise is to make a cross-country comparison of contribution of T.N.Cs to the export bundle of various economies. The scope of the present study rules out any cross-country comparison. Also, given the fact that in the third world, no market economy with a substantial

industrial sector has constricted T.N.C entry anywhere near to the extent of India, such a comparison may prove to be futile. This is so because, other things remaining equal, higher the stock of FDI in an economy the higher will be the contribution of T.N.Cs to exports. The crucial issue at stake is not the contribution of T.N.Cs to total exports, but whether or not T.N.Cs are more export-oriented compared to domestic firms. Therefore, we now shift our focus to studies based on a comparison of export-orientation of domestic and foreign firms.

4.2.2 EXPORT-ORIENTATION OF T.N.Cs VS. DOMESTIC FIRMS :- Studies coming under this category use specific definitions of export-orientation of a firm/industry to make comparative studies of the export-performance of T.N.Cs and domestic firms. Two prominent studies under this category are by Pillai and Subrahmanian and I I F T .

The Subrahmanian and Pillai study makes use of a specifically defined export-performance index. Export-performance was measured by the criteria of (i) proportion of output that is exported and (ii) the rate of growth of share of exports in total production. A composite index combining these two criteria was developed to determine the degree of export performance of different clusters of foreign production.

Alternatively, the I I F T study makes a simple comparison of exports/sales ratios of 28 T.N.Cs and 18 local firms spread over six different industries.

However, a simple comparison of the export-sales ratio or any

such index can often be misleading. This is so because one is prone to attribute any significant differences in 'export-propensities' of firms solely to the "transnationality" and "domesticity" of firms. But there may well be other factors like larger size, superior technology, etc. associated with T.N.C presence, which have direct repercussions for export-propensities. Also, these studies do not take policy factors into account, and so do not show how much T.N.Cs may contribute under different policy regimes. Also, such comparisons do not take account of other factors at the firm or industry level which may account for different propensities of foreign and local firms.

We feel that a correct and comprehensive study of the differences in the export-orientation of the T.N.Cs and domestic firms requires an econometric approach rather than a simple comparison of export propensities.

**4.2.3 AN ECONOMETRIC STUDY :-** Lall and Mohommed have conducted an econometric study relating foreign ownership and export performance in India for the year 1977-78. They have used R B I data which covers 1,720 companies grouped by major activities. For these figures, Lall and Mohammed used data on 24 manufacturing industries, which contain just over 1,100 enterprises, to test for the impact of foreign ownership on export propensities. The basic hypothesis they seek to test is whether foreign ownership at the industry-level has had a positive effect on export-propensities ( exports deflated by industry sales ). They use a simple logarithmic transformation and then use O L S, to arrive

at estimates of the parameters. They seek to econometrically test the impact of four variables on export propensity : (i) foreign shares as measured by the share of dividends paid abroad in total dividends paid ; (ii) the total value of export incentives of various types paid to each industry by the government in 1975 ; (iii) proportion of highly paid employees as a measure of managerial-intensity ; and (iv) total fixed assets deflated by sales as a measure of the physical capital intensity of production.

Though Lall and Mohammed have tested an extremely simple model we feel their methodology is sound.

#### 4.3 METHODOLOGY OF THE PRESENT STUDY

As stated in the third chapter, the Indian industrial system is heavily regulated and very inward looking. The incentive system renders exporting a far less profitable activity than serving the domestic market. As far as T.N.C.s are concerned, the Indian Government has severely limited the sectors which they are allowed to enter and the extent of equity participation they may have. Given the restrictions that are placed on their equity shares and expansion, and also given the presence of several more attractive production bases in other developing countries, it is plausible that T.N.Cs export propensities will be lower than those of domestic firms. On the other hand, given the monopolistic advantages over local firms and their desire to please the host government, they may well show a better export performance. The correct method to test for this would be either to take large samples of individual firms and insert control

variables for influences on export propensities not directly  
related to the foreign-local distinction, as Newfarmer and Marsh  
101  
(for Brazil) have done, or to take industry-level variables with  
similar controls as Lall and Mohammed have done.

We have broadly adopted the methodology of Lall and Mohammed, albeit with some modifications. Firstly, we have used firm-level control variables for influences on export propensities. Secondly, independent variables used in the present study have different meanings and connotations. We have also added some additional independent variables. Specifically, we have regressed the firm-level (and not industry-level) export-propensities on certain independent variables e.g. technology, skills, capital intensity, domestic, profitability, export incentives and an ownership variable. Lall and Mohammed have used the percentage of dividends paid abroad as a measure of foreign ownership. However, we have used a different measure. The ownership variable used is a dummy variable. A value of 1 indicates a foreign-owned firm and 0 a domestically owned firm. A firm was considered foreign-owned (by us) if 20 percent or more of its common stock was controlled by non-Indians. We are aware of the fact that such a cut-off for determining "transnationality" is completely arbitrary. However, we do not have any better measure nor does the existing literature suggest a better measure.

In our empirical analysis we have used a logarithmic transformation of data. Logarithmic transformations are often used time series analysis as a means of removing growth over time of the  
102  
variants of the data. But we have preferred to use this trans-

formation even in a cross-section study because of expected non-linearities in the relationships. We will further elaborate on this in the next chapter.

#### 4.4 DATA BASE

A valid comparison of T.N.Cs and local firms should only include firms which are similar in size, technology and come under similar official regulations. In the Indian context this essentially involves comparing foreign affiliates with large private sector firms. Keeping this in mind we took a sample of 122 domestic and foreign firms from the public limited corporate sector. Each of these companies had a paid up capital of more than Rs. 5 lakhs. Of these 122 firms, 61 firms were—purely domestic and rest were foreign firms. Any firm with more than 20 percent foreign equity holding was defined to be a foreign firm. The information on name of company assets, paid up capital and their industrial classification was obtained from The Directory of Joint Stock Company. <sup>103</sup> The same source also gives a list of foreign firms with details of their paid up capital, assets and foreign equity participation. We have also taken care that each industrial classification ( at 3 digit level as per Company Affairs, Old Series Industrial Classification ) <sup>104</sup> includes equal number of domestic firms. we have collected data mainly on three industries ; (i) motor vehicles ; (ii) basic industrial chemical, fertilizers and power alcohols and (iii) medical and pharmaceutical preparations. <sup>105</sup>

Ideally, we would have liked to have worked with time-series data on these companies, however the non-availability of

time-series data precluded such an option. Therefore, we base our empirical investigation on cross-sectional analysis. Data on all except two of the independent and dependent variables was obtained from Company Annual Reports. However, in some cases the Companies Annual Reports were unavailable for the required year. In such cases, data relates to the next year. Another problem facing us in data collection was that different companies have a different financial year. There is no way we can standardise the data for various companies for a given financial year. The data on plants and machinery is especially prone to this problem. Companies are allowed to make a revaluation of their stock of plants and machinery every year. This implies that the value of the stock of plants and machinery is likely to be sensitive to the point of time that is chosen. However, we have tried to get rid of this problem by keeping the date of taking the value of the stocks of plants and machinery as near to 31st december '84 as possible. In spite of these limitations of the data, we feel that the data serves our need well.

The data on the two industry-level independent variables has been taken from the other sources. These independent variables are the industry-level, capital-labour ratio and the import-output ratio. The data on capital-labour ratio has been taken from the Annual Survey of Industries for factory sector. The data on industrial-level imports was obtained from D.G.C.I.S., while that for output, from the Annual Survey of Industries.



## CHAPTER V

### EMPIRICAL ANALYSIS

#### 5.1 INTRODUCTION

A primary purpose of this empirical analysis is to study whether T.N.Cs have a higher export propensity compared to domestic firms or not. As elaborated in the first chapter of the present study, we have a number of reasons to expect that T.N.Cs would have a higher export propensity. Specifically, the affiliates of T.N.Cs have connections in a network of international production which can be an outlet for intermediate goods. For final goods, established marketing and distribution network of international production which can be an outlet for intermediate goods. For final goods, established marketing and distribution networks of the parent firm may make capturing markets in the developed world an easier task, especially if the parent firm controls the home market. Price competition in the country of the parent firm may increase export propensity by encouraging the establishment of assembly operations in India to take advantage of lower wages for unskilled or semi-skilled labour. Use of superior technology or managerial skills may also enable T.N.Cs to achieve higher exports compared to the domestic firms.

Alternatively, one can argue that the primary motivation for foreign direct investment is to service Indian markets and that production for exports is of secondary importance. Furthermore, the parent company may allocate foreign markets among its

affiliates in order to avoid competition for marketing within the global corporation increases total profits. Also, as argued in the third chapter the industrial policy system in India is not conducive to exports.

## 5.2 THE MODEL

As mentioned earlier most of the regression runs were obtained with logarithmic transformation of data. Only for drugs and pharmaceutical industry a linear model was used. We have conducted a cross-sectional analysis for the year 1983 - 84. Logarithmic transformation of data is often used to reduce the effect of extreme values on the estimate of coefficients. We have also used this transformation because of the expected non-linearities in various relationships. The dependent variable in the model was export propensity. Export propensity was defined as the total exports divided by the Gross Sales Turnover. As indicated by the theoretical discussion in chapter one, a large number of independent variables can be used in this kind of empirical analysis. However, we have used the following set of independent variables - (i) technology ; (ii) managerial skills ; (iii) scale ; (iv) capital-intensity, and ; marketing intensity (v) export incentives (vi) domestic profitability ; (vii) level of foreign equity participation and (viii) foreign ownership variables. Data for all of these variables has been at firm level. Strictly speaking data for export incentives and marketing should have been at the industry level. However, industry-level data on these variables is not available. Firm-level data on these variables may serve as a good proxy

especially if the product is highly differentiated. We have also used two industry-level explanatory variables i.e. (i) import-output ratio (ii) capital-labour ratio. These ratios are computed for three industries (i) Chemicals (ii) Drugs and Pharmaceuticals and (iii) Motor Vehicles.

The dependent variables throughout our empirical investigation is at the firm-level. One problem with a cross-section econometric study is the existence of heteroscedasticity. A number of tests are available to check and correct for heteroscedasticity namely (i) Barlett's Test, (ii) Goldfeld-Quandt test and (iii) Glesjer-Park test. One of the difficulties with the Goldfeld-Quandt test, and other tests for heteroscedasticity is that the test itself does not help one to compare a series of alternative hypothesis about the form that heteroscedasticity may take. Also it does not provide constructive means by which corrective adjustments might be made. While there are some serious problems associated with the Glesjer-Park test, it has the advantage of being easy to use and constructive. We have not conducted the Glesjer-Park test, but we have the precaution of deflating the independent variables by total gross sales turnover. Under certain assumptions, this amounts to using the Glesjer-Park correction for heteroscedasticity for obtaining the efficient parameter estimates with a multiple regression technique.

We now turn to a more detailed discussion of the independent variables and the expected direction of their effect on the independent variable.

5.2.1 DUMMY VARIABLE (DUMMY): As mentioned earlier we have used a dummy-variable for the ownership variable. We have assigned a value of 1 to T.N.Cs and 0 to the purely domestic firms. As mentioned in the introduction we cannot unequivocally state the effect of transnationality on export propensities, and this is the main hypothesis to be explored in our empirical analysis. The expected sign of this variable is unknown. We have already elaborated the reason for this in Section 5.1.

5.2.2 TECHNOLOGY (LTECHO, TECHOS) :- Technology has been defined at the firm level; technology is represented by a simple addition of (i)domestic technical payments; (ii)research and development expenditure; (iii)foreign technical payments (iv)foreign royalty and (v)imports of capital goods - incurred by the firm. The data on all these variables have been taken from the Annual Reports of firms included in our study. Most of the R & D expenditure in India are devoted to minor adaptive works. Also, many firms in India are known not to report the figures in their annual reports. Therefore we have supplemented the data on R & D with other measures of technology. And obvious question arises as to why we have not included the expenditure on domestic capital goods in our representation of firm-level technological sophistication. The answer is very simple. Firstly, the data on the value of use of domestic capital goods is not readily available. Secondly, we feel that the influence of the use of the domestic capital goods may be captured by other variables such as fixed capital and plants and machinery. We expect technology to have a positive influence on export-

propensity. This is so because the higher the level of technology used the better the quality of the product and the more internationally competitive the product will be. On the other hand, given the fact that India has a comparative advantage in technologically matured products and that most of the technology-transfer takes place in response to import-substitution stimuli and not to export opportunities, the effect of this variable is unlikely to be significant. Also, given the restrictions imposed by Indian policies on technology imports and capital goods imports, we expect that the kind of technology being transferred will not have any significant effect on the export propensity.

**5.2.3 MANAGERIAL INTENSITY (LPROSA) :-** It is mandatory for all firms in the factory sector to report the proportion of employees earning more than Rs. 36,000/- in the companys' annual reports. We have used this variable as a measure of firm-level managerial skills. Theoretically, we expect that at the firm-level, managerial skills have a negative impact on the export propensity in India. This is so because the domestic market remains the overwhelming concern of most manufacturing firms. In addition , since exchange regimes render domestic sales more profitable than exports, the better managed firms would tend to maximise profits by directing a larger proportion of their sales to domestic markets. Moreover, current theories of comparative advantage argue that developing countries like India face a relative handicap in exporting products which require high levels of skill and technology.

5.2.4 SCALE (LASSS, ASSS) :- The measure of scale economies are fraught with problems. We have resorted to the use of assets as a proxy for scale economies. Assets were defined as a sum of fixed assets, investments, current assets, loans and advances, cash in hand and deposits of a firm. This scale measure is at the enterprise rather than the "more common" plant or establishment level and so does not measure merely the technical factor contributing to scale economies. However, it has the advantage that it captures such factors as the existence of multiplant or technological economies which make for a large firm size. We hypothesise a positive relationship between scale economies and export propensities. Other things remaining equal greater the economies of scale, lower should be unit costs and consequently, more competitive should be the firms' products in the international market.

5.2.5 CAPITAL-INTENSITY (LK/L, LPMS) :- We have used two kinds of proxies for measuring capital-intensity. Firstly, we have used the value of plants and machinery at the firm level deflated by scales. Strictly speaking we should have used the industry-level value of plants and machinery. However, we have had to use firm level data in the absence of unavailability of industry level data. In order to circumvent this problem we have used data on industry-level capital-labour ratios. The industry-level capital-labour ratio has been defined as total fixed assets divided by the total number of people employed for each industry. Trade theory predicts a negative sign for both of these variables. We need not subscribe to a simple Heckscher-

Ohlin model of comparative advantage to arrive at this prediction. For the kinds of technologically matured products, manufactured at relatively small scales, which developing countries like India tend to export, the usual neo-technology variables play a small role in determining export performance. For these 'Heckscher-Ohlin goods',<sup>110</sup> relative factor costs do emerge as an important influence on trade patterns. There is a further, peculiarly Indian, element which strengthens the cost for a negative effect. The exigencies of the industrial licensing system in India, coupled with a policy of fragmenting industrial capacities in order to avoid monopoly or 'dominance' by large groups has led to a widespread incidence of capital-intensive plants being constructed long ahead of domestic demand.<sup>111</sup> These plants cannot realise their inherent economies of scale, and often suffer from large capacities, and over time develop technological lags compared to competitors in developed countries. All these factors tend to reduce the export potential of these capital-intensive facilities.

5.2.6 MARKETING-INTENSITY (LSCS, SCS) :- We have measured the marketing variable by the selling costs incurred by a firm. Selling costs have been defined as a sum of advertising and commission paid to the selling agent. Traditionally, only advertising has been used as a measure or indicator of marketing intensity. But we feel that selling costs are a better indicator<sup>112</sup> of the degree of product differentiation. Ideally we should have also included transport cost to measure selling costs. But the unavailability of such data precluded this option. This is so

because if firms have to incur greater costs on advertising to convince the buyer that its products are different from other similar products they have to also incur greater costs on commissions to selling agents to induce them to sell their products.

The theory assigns a significant and positive sign to this variable. But in Indian condition this need not be so. Given the industrial approval and licencing system (which generates high protection from both foreign and domestic competition for existing producer) and the domestic market orientation of firms, the Indian firms need not incur high expenditure on selling costs to stave off the challenge of other firms. Moreover, India's comparative advantage does not lie in products which have high marketing-intensity.

5.2.7 EXPORT INCENTIVES (EXINS, LEXINS) :- In the present study export incentives have been defined to include duty-drawbacks and export subsidies received by the firms. The expected sign of this variable is also likely to be positive. However, we believe that the significance level of this variable may turn out to be illusory. The reason underlying this belief is that the export incentives have been measured at the firm level. Therefore higher the exports by a firm higher will be the export incentives received by that firm. Had we used the rate of export incentive for each industry, the level of significance of this variable would have indicated whether export incentive merely offset the higher local costs of production, or provide a net subsidy to exporters. However, we have still preferred to



include this variable in our regression because the given the extremely complex nature of the export incentive programme, results for this variable are of interest. 113

5.2.8 DOMESTIC PROFITABILITY (PRODIT) :- We have used a proxy variable to measure domestic profitability. The ratio of domestic sales to total sales was multiplied by profit before tax to get an estimate of profits realised from domestic sales. As noted earlier the industrial policy regime in India has given rise to a market structure which is insulated from both domestic and foreign competition. In such a situation even the inefficient firms may continue to reap profits by selling their products in the domestic market. Therefore, profit maximising firms will sell more in the domestic market. We expect this behaviour for T.N.Cs to be especially pronounced if they come to India to exploit the domestic market. In some we expect a significantly negative sign.

5.2.9 IMPORT-OUTPUT RATIO (LIMPT, IMPT) :- From the literature on trade under protection it is clear that firms in more concentrated markets will have a higher propensity to export if their final goods are price competitive in international markets. 114 To measure this we needed data on degree of concentration on each of the industries under consideration in the present study. However, such data is not easily available. Therefore, we decided to use an alternative measure of the degree of competition in the domestic market. The import-output ratio has been used as a proxy variable for the 'the degree of openness' of an industry to foreign competition. As per theory

we expect a positive sign for this variable. Exposing an industry to foreign competition not only improves its price-competitiveness but also lowers the degree of firm concentration in that particular industry. It is well known that firms operating in industries with high firm concentrations and seeking to increase sales would face decreasing profits. Therefore, these firms attempt to diversify in the domestic market or seek out foreign markets and often pursue both strategies simultaneously. Also, to the extent that imports help in improving the quality of final products, we expect a higher import-output ratio to boost exports.

#### Independent variables and their Expected Signs

Independent Variable	Expected Sign
DUMMY	?
LTECHO, TECHOS	+
LPROSA	-
LASSS, ASSS	+
LK/L, LPMS	-
LSCS, SCS	+
LEXINS, EXINS	+
LIMPT, IMPT	+
MDVIMP	?

See Appendix 4 for an explanation of independent variables.

TABLE 1

OVERALL ( LOG LINEAR )

$$\text{LEXPRO} = c + a \text{ DUMMY} + b \text{ LTECHO} + d \text{ LSCS} + e \text{ LPMS} + f \text{ LASSS} + g \text{ LEXINS} + h \text{ LPROSA}$$

Expected Sign:                                +                +                -                +                +                -

c	a	b	d	e	f	g	h	R <sup>2</sup>	R <sup>-2</sup>	F	n
** -3.52 (-2.09)	*** 3.45 (3.62)	0.14 (1.36)	0.095 (1.14)	* -0.56 (-1.87)	0.805 (0.806)	*** 0.24 (3.44)	** 0.78 (2.40)	0.35	0.30	*** 8.009	118
*** 5.15 (3.69)	*** 3.79 (3.49)	0.03 (0.475)		-0.30 (-1.04)		*** 0.24 (3.44)	* 0.64 (1.92)	0.28	0.25	*** 8.87	118

- \* denotes significant at 10 % with two-tailed t-test.  
 \*\* denotes significant at 5 % with two-tailed t-test.  
 \*\*\* denotes significant at 1 % with two-tailed t-test.

### 5.3 STATISTICAL RESULTS :

5.3.1 OVERALL :- We obtained eight sets of regression runs, each set with a separate function. We have tabulated all the eight sets of regression equations in tables 1 to 8. The first set of equations in Table 1 presents the regression results with all the seven firm-level independent variables, using the entire range of data for 122 firms. Since four firms had missing data in at least one of the independent variable series the number of observations were reduced to 118.

In the first equation of Table 1 all but one variable has the expected sign. But most significantly the DUMMY turns out to be statistically significant. The high value of coefficient 'a' indicates that the export propensity is highly elastic with respect to the foreign ownership variable. This result is in line with Lall & Mohammed's study which have found a positive but statistically insignificant relationship between the foreign ownership of a firm and its export propensity. However, these results contradict the results obtained by Subrahmanian and Pillai and the IIFT study which have found that the T.N.Cs have a lower export propensity compared to domestic firms. This is in line with our contention that both of these studies have failed to conduct rigorous statistical tests for differences in the trading behaviour of T.N.Cs and domestically-owned firms while controlling for other industry-and firm-level variables. Variables other than the nature of a firm's ownership undoubtedly also affect its propensity to export. For example, T.N.Cs might be active in high-technology industries which may

also be highly capital-intensive. Since India has a comparative advantage in labour-intensive products, T.N.Cs may turn out to have a lower export-propensity compared to the domestic firms. Hence, this factor may decrease the export propensity of T.N.Cs for reasons other than the nature of their ownership. However, in the present study we have compared the export behaviour for T.N.Cs and domestic firms in India after controlling for other variables e.g. capital-intensity, technology, selling costs, managerial-intensity etc.... On the other hand Natke and Newfarmer, in their study of Brazil found that foreign-owned firms did not generally have higher exports-to-sales ratios than domestically owned firms, even after controlling for other variables that might affect this ratio. This shows that it is wrong to categorise the T.N.Cs as universally export or domestic market oriented. The export performance of T.N.Cs is likely to vary across industries and countries and will largely depend on exigencies of the policy framework, technology, capital-intensity, selling costs, etc., rather than their 'transnationality'.

LTECHO, LPMS, LSCS, LASSS, LEXINS, all have the expected signs. But only LPMS and LEXINS are statistically significant. This suggests that the export-incentive system in India does go beyond merely compensating the firms for high costs of local production, though it is not clear that it stimulates exports in activities in which India has a natural comparative advantage. As suggested earlier, the level of significance of this variable may be illusory. Therefore, our finding is only suggestive and

much more detailed research is needed into effective incentive structures and the real domestic resource costs of export activity before a strong conclusion can be drawn.

LPMS or capital-intensity has a negative effect on export performance in India. This contrasts with Newfarmer and Marsh's result for Brazil that capital-intensity has a positive effect on export performance. The difference may lie in the fact that Brazil has permitted firms to grow much larger and so has realised scale economies, and has permitted a much greater inflow of technology to keep facilities updated. As noted earlier, Indian policies have tended to prevent the realisation of scale economies and retard technological upgrading. This shows why technology and assets do not have statistically significant effect on export propensity. Indian policies have tended to encourage imports of technology for encouraging exports, and have restricted it for technological upgradation of the import-substituting industries. The irony is that most technology transfers take place only in response to import-substitution stimuli. Also, to the extent that India has a comparative advantage in technologically matured products, the technology variable is unlikely to be significant.

The effect of LSCS is also statistically insignificant. In a protected market the need to differentiate products to stave off competition is hardly required.

LPROSA is the only variable whose coefficient does not have the expected sign. It also turns out to be statistically

significant. Since the domestic market remains the overwhelming concern of most manufacturing firms we would have expected the better managed firms maximised profits by directing a larger proportion of their sales to the domestic market. But it seems that the gains of better management in the domestic market tends to overflow to the international market. We conjecture that this may be because better management tends to make a firm's product more competitive in the international market. This result is again in direct contrast with the negative sign found by Lall and Mohammed for the same variable.

In the second equation of Table 1 we dropped the two least significant variables that is, LASSS and LTECHO. However, this formulation not only reduced the statistical significance of LPMS, but also  $R^2$ . On the other hand, the F-statistic improves very marginally. Thus the first equation in Table 1 is our preferred equation.

In Table 2, we have presented two regression equations, using the two industry-level variables namely LIMPT, LK/L. The regression runs were obtained only for three industries. In Table 2, we used only those independent variables of Table 1 which were consistently significant.

In the first equation of Table 2 we have used a multiplicative dummy variable (MDVIMP) for import-output ratios for the T.N.Cs. This was to check whether the T.N.Cs have different response pattern to the 'degree of openness' of an industry compared to domestic firms. As is evident, from the examination of Table 2, the  $R^2$ ,  $R$  and F-statistics increased in values compared to the

TABLE 2

DRUGS AND PHARMACEUTICALS, CHEMICALS, MOTOR VEHICLES  
 ( USING TWO INDUSTRY-LEVEL VARIABLES)

$$\text{LEXPRO} = c + a \text{ DUMMY} + b \text{ LIMPT} + d \text{ K/L} + e \text{ LPROSA} + f \text{ LEXINS} + g \text{ MDVIMP}$$

Expected Sign    +                 -                 -                 +

c	a	b	d	e	f	g	$R^2$	$-R^2$	F	n
** 32.93 (1.94)	1.03 (0.62)	* -1.085 (-1.67)	** -3.625 (-2.45)	*** 1.24 (4.00)	* 0.16 (1.99)	17.81 (1.19)	0.49	0.45	*** 11.83	80
** 34.79 (2.09)		** -1.23 (-2.05)	*** -3.805 (-2.64)	*** 1.29 (4.28)	** 0.16 (2.03)	*** 25.85 (3.19)	0.49	0.455	*** 14.24	80

\* denotes significant at 10 % with two-tailed t-test.  
 \*\* denotes significant at 5 % with two-tailed t-test.  
 \*\*\* denotes significant at 1 % with two-tailed t-test.



regressions tabulated in Table 1.

The LK/L ratio has the expected sign. This confirms the results obtained in Table 1 using LPMS as a proxy for capital-intensity. However, the level of significance of this variable increases considerably with the industry-level variable. LIMPT turns out to have marginally significant negative sign. The received theory suggests that a higher import-output ratio should go in hand with a higher export-propensity. The negative sign can however be explained with the help of the negative sign for LIMPT. All the three industries which we are investigating are comparatively capital-intensive. On the other hand India has a comparative advantage in ( and tends to export ) labour-intensive goods. This is why even in the face of foreign competition firms prefer to sell in the relatively sheltered domestic market rather than expose themselves to stiff challenge in international markets.

The coefficient of MDVIMP takes a positive sign in the regression equation. Here, ' b ' represents the coefficient of import-output variable for T.N.Cs as well as the domestic firms and  $b + e$  represents the coefficient of the import-output variable for T.N.Cs. Clearly in the first equation of Table 2  $b + e$  turns out to be positive, but not significant. This shows that the T.N.Cs are more sensitive to the ' degree of openness ' of an industry. This suggests that the T.N.Cs have got the capability to circumvent India's comparative disadvantage in exporting capital-intensive products. But they do so only on profit consideration. If foreign competition threatens to erode

their profits by sales in domestic market, they prefer to sell their products abroad.

However, MDVIMP may not be significant in the presence of DUMMY. This is so because the way we have defined MDVIMP and DUMMY there is likely to be a problem of multicollinearity between these two variables. In the second equation we have dropped the DUMMY altogether. As expected the level of significance of MDVIMP goes up sharply. The level of significance of other variables also goes up. The estimates of all coefficient show stability both in terms of sign and value. R<sup>-2</sup> remains the same though F-statistic goes up.

5.3.2 T N Cs ONLY :- In Table 3 we have tabulated the regression equations which seek to explain the export-propensity of T.N.Cs. We have added two new variables here, namely, FEQ and PRODIT are empirical results in Table 3 examines whether the export-propensities of foreign subsidiaries in India are positively associated with the parent company's ownership shares in these subsidiaries. The hypothesis was tested with reference to export-propensities of foreign subsidiaries. If the hypothesis turns out to be true it will be in line with the Global Profit Maximisation Theory. It has been shown that under Global Profit Maximisation the parent company will take account of the effect of the subsidiaries exports on its ( that is, the parents ) net Global Profits : specifically, the parent companies' profit maximisation calculus will require that the amount exported by the subsidiary be higher the higher is the parent's ownership share in the subsidiary.

TABLE 3

OVERALL (T N Cs ONLY)

$$\text{LEXPRO} = c + a \text{ FEQ} + b \text{ LPMS} + d \text{ PROBIT} + e \text{ LEXINS} + f \text{ LPROSA}$$

Expected Sign            +            -            -            +            +

c	a	b	d	e	f	<sup>2</sup> R	<sup>-2</sup> R	F	n
8.145	2.86*	-0.27	-0.51*	0.13*	0.61*	0.29	0.22	4.45**	61
(1.66)	(1.93)	(-0.95)	(-1.92)	(1.93)	(1.71)				
9.49**	2.97**		-0.56**	0.131*	0.63*	0.28	0.22	5.35	61
(2.03)	(2.02)		(-2.12)	(1.96)	(1.80)				

- \* denotes significant at 10 % with two-tailed t-test.
- \*\* denotes significant at 5 % with two-tailed t-test.
- \*\*\* denotes significant at 1 % with two-tailed t-test.

In Table 3 we have used only three independent variables ( which were found to be statistically significant in Table 1 ). The first equation shows that all but one of the independent variables are statistically significant. More notably, FEQ has the expected sign and is statistically significant. This shows that the exports of foreign subsidiaries are unlikely to remain unaffected by the foreign equity dilution process envisaged under F E R A. Our finding seems to be in line with the result<sup>121</sup> obtained by Katrak using the industry-level variables for India for the period 1964-1969. Our result also seems to suggest the the rationale underlying the F E R A strategy, that the share of profits accruing to foreign nationals will increase the foreign exchange savings may not be correct. Dilution of foreign equity participation has not only not been successful in reducing the outflow of foreign exchange but may also adversely affect the inflow of foreign exchange by reducing exports.

PRODIT has the expected and significant effect on the export-propensity. This suggests that profit-maximising firms are likely to sell more in the domestic market, if the domestic profitability is higher. Thus, if T.N.Cs come to India with the specific motive of exploiting the domestic market, PRODIT will have significantly negative effect on export-propensities.

LPMS is the only variable which is insignificant in the first equation in Table 3. We conjecture that this may be because T.N.Cs are likely to have a comparative advantage in comparatively more capital-intensive products. The second equation in Table 3 is obtained by dropping LPMS. The consequent

equation does not show any change in  $R$  but the  $F$ -statistic does improve. The value and signs of the rest of the coefficients have remained remarkably stable, though the significance levels of FEQ and PRODIT have improved.

5.3.3 INDIVIDUAL INDUSTRIES :- In Tables 4 to 6 we present the regression equation using the data for T.N.Cs and domestic firms for each of the industry groups studied. The exercise was conducted to see whether the DUMMY has got significantly different effect on export-propensities across the three industries. It seems that the foreign subsidiaries do not have statistically significant effect on export-propensity in the drugs and pharmaceutical industry. However, they have got a significantly positive effect on export-propensity in the motor vehicle and chemical industry. In addition, the extremely low value of 'a' in Table 4 compared to its values in Table 5 and 6 suggests that foreign ownership has a much smaller impact on export-propensity in the drugs and pharmaceutical industry as compared to the other two industries.

Selling costs turn out to have a statistically significant and positive effect on export-propensities in two of the three industries. As one would expect the effect of this variable on export-propensity is strongest in the motor vehicle industry where the scope for differentiating the product is largest. In Table 4 the rest of the variables have impacts which have already been elaborated in the section 5.3.1.

The motor vehicle industry has however, got rather unexpected





signs for three independent variables namely, LSCS, LPMS, and LEXINS. We suggest that this may be due to the small sample size for this industry which has reduced the degrees of freedom to twelve. It is quite plausible that the sample we have taken is not a true representative of the motor vehicle industry. Yet, we are at a loss to explain the negative signs for LSCS and LEXINS. LPMS may have positive sign because the motor vehicle industry is highly capital-intensive and consequently the exports may also be intensive in the use of capital.

5.3.4 T N C s IN INDIVIDUAL INDUSTRIES :- We ran the last set of equations using data on T.N.Cs for the two industries that is, drugs and pharmaceuticals and chemicals. The results for this exercise have been tabulated in Table 7 and 8. These results are beset with the degrees of freedom problem to the extent that we fail to reach the minimum required degrees of freedom (30). The chemical industry has 12 degrees of freedom whereas the drugs and pharmaceuticals has only 9. Nevertheless, we did obtain regression equations for the T.N.Cs. We thought that it would be instructive to compare the export-performance of the T.N.Cs across the industries. We do not think that any study has been done for India comparing the performance of T.N.Cs across industries. Undoubtedly, our findings are only preliminary.

The effect of foreign equity participation is different for drugs and pharmaceuticals and chemical industry. In the drugs and pharmaceutical industry FEQ has a negative effect on the export-propensity. This may have been on account of the industrial policies peculiar to the drugs and pharmaceutical



TABLE 7

TNCs (DRUGS AND PHARMACEUTICALS)

LINEAR

$$\text{EXPROP} = c + a \text{ FEQ} + b \text{ SCS} + d \text{ PROSA} + e \text{ TECHOS} + f \text{ EXINS}$$

Expected Sign            +            +            +            +            +

c	a	b	d	e	f	2 R	- 2 R	F	n
-0.03	-0.005	-0.04	0.095	2.49	2.86	0.745	0.59	4.70	14
(-0.67)	(-0.081)	(-0.06)	(1.59)	(3.30)	(2.92)				
			* 0.05	*** 2.32	*** 2.86	0.72	0.66	*** 13.90	14
			(1.90)	(3.63)	(3.395)				

- \* denotes significant at 10 % with two-tailed t-test.
- \*\* denotes significant at 5 % with two-tailed t-test.
- \*\*\* denotes significant at 1 % with two-tailed t-test.

TABLE 8  
TNCs (CHEMICALS)

$$\text{LEXPRO} = c + a \text{ FEQ} + b \text{ LTECHO} + d \text{ LSCS} + e \text{ LPMS} + f \text{ LEXINS} + g \text{ LPROSA}$$

Expected Sign            +                    +                    +                    -                    +                    +

c	a	b	d	e	f	g	$\frac{2}{R}$	$\frac{-2}{R}$	F	n
-15.005	3.11	0.28	0.24	-0.56	0.31		0.39	0.13	1.54	17
(-0.95)	(0.76)	(0.67)	(1.04)	(-0.60)	(1.72)					
1.36	2.16		0.235		0.25	0.93	0.42	0.22	2.37	17
(0.32)	(0.64)		(1.07)		(1.42)	(1.60)				
	1.38		0.22		0.22	0.91	0.42	0.29	3.35	17
	(0.61)		(1.005)		(1.48)	(1.62)				

\* denotes significant at 10 % with two-tailed t-test.  
 \*\* denotes significant at 5 % with two-tailed t-test.  
 \*\*\* denotes significant at 1 % with two-tailed t-test.

industry. Most of the firms with high foreign equity participation may have escaped the F E R A by showing their presence in ' high-technology ' areas. Such firms, generally are import-substituting in nature and tend not to export. On the other hand, firms with lower foreign equity participation may have had to export to escape further dilution of their foreign equity. In the chemical industry we get the expected sign for FEQ. This strengthens our argument that the export performance of foreign firms is likely to be a product of diverse set of factors rather than the nature of their ownership.

One would have expected the T.N.C's exports to be especially intensive in the use of technology. However, only in the case of the drugs and pharmaceutical industry do we find that their exports are intensive in the use of technology. This may be on account of the way we have defined the technology variable. Most of it represents the use of foreign technology. Domestic technical payments and R & D expenditures are negligible in most cases. Even if R & D is conducted it is confined to minor adaptive work. Therefore, LTECHO more or less represents the effect of foreign technology. Using this fact and interpreting the regressions in Table 7 and 8 for LTECHO we may conclude that for the drugs and pharmaceutical industry T.N.Cs are transferring technology in response to export stimuli. But in the chemical industry technology-transfer by T.N.C is taking place not to serve the international market but maybe to meet domestic demand.

LSCS turns out to be significant for the drugs and pharmaceutical industry but not for the chemical industry. This may be because in the Indian pharmaceutical industry there is a lot of scope for product-differentiation, as is evident from the number of firms selling the same formulation. LSCS is a measure of a firm's ability to overcome marketing barriers to entry which may have existed in India and indicates that these barriers are not likely to be formidable when exporting to other countries. Since the drugs and pharmaceutical industry is already spending a lot of money in differentiating a product in the domestic market, this tends to significantly augment their export-propensity. On the other hand, this cannot be said to be true of the chemical industry.

The rest of the variables have the expected signs, but none turns out to be significant for the chemical industry. In fact, we get a poor  $R^2$  for the chemical industry in all the three equations. The F-statistic is also insignificant. This suggests that we need to use some other independent variables in order to explain the export-propensity of T.N.Cs in the chemical industry. But the same set of independent variables perform quite well for the drugs and pharmaceutical industry. This again strengthens our view that the export performance is likely to vary from industry to industry. It is a banal generalisation to suggest that the T.N.Cs universally export more or are domestic market oriented, and that their export-performance is a function of the nature of ownership.

#### 5.4 CONCLUSIONS :

In our empirical analysis we collected data on 122 firms and found that foreign ownership tends to significantly increase the export propensity of firms. We also gave the result that India is exporting products with lower capital-intensity. This is in line with the fact that India has a comparative advantage in labour-intensive products. Assets and technology fail to turn out to be significant for Indian exports. This is so because Indian industrial policy has tended to prevent the realisation of scale economies and regarded technological upgrading of industries by restricting the inflow of technology. T.N.Cs also turn out to be more sensitive to the 'degree of openness' of an industry. Our results show that T.N.Cs if exposed to foreign competition in the domestic market react by selling less in the domestic market and exporting more. This result does not hold good for domestic firms.

T.N.Cs as a group tend to export more with higher foreign equity participation and lower domestic profitability. Our preliminary investigation shows that the F E R A strategy may succeed in reducing the outflow of foreign exchange in the long run by controlling the profits accruing to foreign nationals but that this gain may be offset by the loss of foreign exchange on account of reduction in exports.

The regression equation with all the firms within each industry suggests that different sets of factors have different impacts on the export-propensity for different industries. We noted that only in motor vehicles and drugs and pharmaceuticals the T.N.Cs

have positively significant effect on the export-propensities. A similar exercise for only the T.N.Cs across the two industries also suggests remarkable variations in the factors explaining the export-propensity of T.N.Cs. Most of the studies in the existing literature have tended to ignore this point and have classified T.N.Cs as universally export-oriented or domestic market-oriented. Our findings suggest that one should be careful in making such generalisations, because the export-performance of T.N.Cs is likely to vary significantly from industry to industry and from country to country. The exigencies and vagaries of industrial organisation, structure and policy framework for a particular industry are more likely to explain the export-propensities of T.N.Cs rather than the nature of their ownership.

\*\*\*\*\*

## APPENDIX I

TABLE :- 1 a

## ESTIMATED STOCK OF ACCUMULATED FOREIGN DIRECT INVESTMENT BY COUNTRY OF ORIGIN : 1914 - 78

	1914		1938		1960		1971		1978	
	\$m	%	\$m	%	\$bn	%	\$bn	%	\$b	%
DEVELOPED COUNTRIES	14302	100.0	26350	100.0	66.0	99.0	168.1	97.7	380.3	96.8
-----										
NORTH AMERICA										
-----										
U.S.A	2652	18.5	7300	27.7	32.8	49.2	82.8	48.1	162.7	41.4
CANADA	150	1.0	700	2.7	2.5	3.8	6.5	3.8	13.6	3.5
-----										
WESTERN EUROPE										
-----										
U.K	6500	45.5	10500	39.8	10.8	16.2	23.7	13.8	50.7	12.9
GERMANY	1500	10.5	350	1.3	0.8	1.2	7.3	4.2	28.6	7.3
FRANCE	1750	12.2	2500	9.5	4.1	6.1	7.3	4.2	14.9	3.8
BELGIUM					1.3	1.9	2.4	1.4	5.4	1.4
ITALY					1.1	1.6	3.0	1.7	5.4	1.4
NETHERLANDS					7.0	10.5	13.8	8.0	28.4	7.2
SWEDEN	1250	8.7	3500	13.3	0.4	0.6	2.4	1.4	6.0	1.5
SWITZERLAND					2.0	3.0	9.5	5.5	27.8	7.1

.....CONTD.

ESTIMATED STOCK OF ACCUMULATED FOREIGN DIRECT INVESTMENT BY COUNTRY OF ORIGIN : 1914 - 78

	1914		1938		1960		1971		1978	
	\$m	%	\$m	%	\$m	%	\$m	%	\$m	%
<u>OTHER DEVELOPED COUNTRIES</u>										
RUSSIA	300	2.1	450	1.7	-	-	-	-	-	-
JAPAN	20	0.1	750	2.8	0.5	0.7	4.4	2.6	26.8	6.8
AUSTRALIA										
NEW ZEALAND	180	1.3	300	1.1	1.5	2.2	2.5	1.4	4.8	1.2
SOUTH AFRICA										
OTHERS	neg	neg	neg	neg	1.2	1.8	2.5	1.4	5.2	1.3
<u>DEVELOPING COUNTRIES</u>	neg	neg	neg	neg	0.7	1.7	4.0	2.3	12.5	3.2
<u>TOTAL</u>	1430	100.0	2635	100.0	66.7	100.0	172.0	100.0	392.8	100.0



TABLE 1 b

OUTWARD STOCKS OF FOREIGN DIRECT INVESTMENT BY MAJOR HOME COUNTRY AND REGION - 1980-85

COUNTRIES / REGIONS	1980		1985	
	VALUE	% OF TOTAL	VALUE	% OF TOTAL
DEVELOPED MARKET ECONOMIES	535.7	97.2	693.3	97.2
UNITED STATES	220.3	40.0	250.7	35.1
UNITED KINGDOM	81.4	14.8	104.7	14.7
JAPAN	36.5	6.6	83.6	11.7
FEDERAL REPUBLIC OF GERMANY	43.1	7.8	60.0	8.4
SWITZERLAND	38.5	7.0	45.3	6.4
NETHERLANDS	41.9	7.6	43.8	6.1
CANADA	21.6	3.9	36.5	5.1
FRANCE	20.8	3.8	21.6	3.0
ITALY	7.0	1.3	12.4	1.7
SWEDEN	7.2	1.3	9.0	1.3
(a)				
OTHERS	17.4	3.2	25.6	3.6
DEVELOPING COUNTRIES	15.3	2.8	19.2	2.7
CENTRALLY PLANNED ECONOMIES OF EUROPE	-	-	(b) 1.0	0.1
TOTAL	551.0	100.0	713.5	100.0

SOURCE UNCTC - TRANSNATIONAL CORPORATIONS IN WORLD DEVELOPMENT - TRENDS AND PROSPECTS, NEW YORK - 1988

(a) AUSTRALIA, AUSTRIA, BELGIUM, DENMARK, FINLAND, GREECE, IRELAND, NEW ZEALAND, NORWAY, PORTUGAL, SOUTH AFRICA, SPAIN

(b) 1983, ROUGH ESTIMATES

TABLE : 2 a

## ESTIMATED STOCK OF ACCUMULATED FOREIGN DIRECT INVESTMENT BY RECIPIENT COUNTRY OR AREAS :

	1914		1938		1960		1971		1978	
	\$m	%	\$m	%	\$bn	%	\$bn	%	\$bn	%
<u>DEVELOPED COUNTRIES</u>	5235	37.2	8346	34.3	36.7	67.3	108.4	65.2	251.7	69.6
<u>NORTH AMERICA</u>										
U.S.A	1450	10.3	1800	7.4	7.6	13.9	13.9	8.4	42.4	11.7
CANADA	800	5.7	2296	9.4	12.9	23.7	27.9	16.8	43.2	11.9
<u>EUROPE</u>										
WESTERN EUROPE	1100	7.8	1800	7.4	12.5	22.9	47.4	28.5	136.2	37.7
OF WHICH U.K	(200)	(1.4)	(700)	(2.9)	(5.0)	(9.2)	(13.4)	(8.1)	(32.5)	(9.0)
OTHER EUROPEAN :	1400	9.9	400	1.6	neg	neg	neg	neg	neg	neg
OF WHICH RUSSIA	(1000)	(7.1)	-	-	-	-	-	-	-	-
<u>AUSTRALASIA AND</u>										
SOUTH AFRICA	1450	3.2	1950	8.0	3.6	6.6	16.7	10.0	23.9	6.6
JAPAN	35	0.2	100	0.4	0.1	0.2	2.5	1.5	6.0	1.7



.....CONTD

ESTIMATED STOCK OF ACCUMULATED FOREIGN DIRECT INVESTMENT BY RECIPIENT COUNTRY OR AREAS :

	1914		1938		1960		1971		1978	
	\$m	%	\$m	%	\$bn	%	\$bn	%	\$bn	%
<u>DEVELOPING COUNTRIES</u>	8850	62.3	15969	65.7	17.6	32.3	51.4	30.9	100.4	27.8
LATIN AMERICA	4600	32.7	7481	30.8	8.5	15.6	29.6	17.8	52.5	14.5
AFRICA	900	6.4	1799	7.4	3.0	5.5	8.8	5.3	11.1	3.1
ASIA	2950	20.9	6068	25.0	4.1	7.5	7.8	4.7	25.2	7.0
OF WHICH CHINA	(1100)	(7.8)	(1400)	(5.8)	(neg)	(neg)	(neg)	(neg)	(neg)	(neg)
INDIA AND CEYLON	(450)	(3.2)	(1359)	(5.6)	(1.1)	(2.0)	(1.5)	(0.9)	(2.5)	(0.7)
SOUTHERN EUROPE					0.5	0.9	1.7	1.0	3.4	0.9
MIDDLE EAST	400	2.8	621	2.6	1.5	2.8	3.5	2.1	8.2	2.6
INTERNATIONAL AND UNALLOCATED	neg	neg	n.a	n.a	n.a	n.a	6.5	3.9	9.5	2.6
<u>TOTAL</u>	14085	100.0	24315	100.0	54.5	100.0	166.3	100.0	361.6	100.0

.....CONTD

TABLE 3-2 b

INWARD STOCKS OF FOREIGN DIRECT INVESTMENT BY MAJOR HOST REGIONS 1983 - 85

COUNTRYWISE REGIONS/AREA	1983		1985	
	VALUE	% OF TOTAL	VALUE	% OF TOTAL
DEVELOPED MARKET ECONOMIES	401.0	75.6	478.2	75.0
WESTERN EUROPE	159.6	30.1	184.3	28.9
UNITED STATES	137.1	25.9	184.6	29.0
OTHER	104.3	19.7	109.2	17.1
JAPAN	5.0	0.9	6.1	1.0
DEVELOPING COUNTRIES AND TERRITORIES	138.4	24.4	159.0	25.0
AFRICA	19.6	3.7	22.3	3.5
ASIA	40.0	5.8	49.6	7.8
LATIN AMERICA AND CARIBBEAN	73.2	13.8	80.5	12.6
OTHERS	5.4	1.0	6.6	1.0
TOTAL	539.4	100.0	637.2	100.0

SOURCE UNCTC - TRANSNATIONAL CORPORATIONS IN WORLD DEVELOPMENT, NEW YORK, 1988 .

TABLE : 3

GROWTH OF U.S., BRITISH, CONTINENTAL EUROPEAN AND JAPANESE BASED MULTINATIONAL CORPORATIONS

(PRE 1914 - 1967)

NUMBER OF FOREIGN MANUFACTURING SUBSIDIARY FIRMS ESTABLISHED OR ACQUIRED BY PARENT COMPANIES

PERIOD	CONTINENTAL EUROPE			NO. OF COMPANIES			PER ANNUM
	U.S	U.K	EUROPE	(INCL. U.K)	JAPAN	TOTAL	
PRE - 1914	122	60	167	227	0	349	-
1914 - 1918(WW I)	71	27	51	78	0	149	21
1920 - 1938	614	217	361	578	4	1,196	63
1939 - 1945(WW II)	172	34	44	78	40	290	41
1946 - 1958	1,108	351	377	728	21	1,857	143
1959 - 1967	2,749	1,111	993	2,104	247	5,100	566

## APPENDIX II

### REVISED INDUSTRIAL CLASSIFICATION OF JOINT STOCK COMPANIES

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(List of industries used in the present study)

- 3.22 Motor Vehicles
  
- 3.3 Electrical Machinery, apparatus appliances etc.
  - 3.31 Electric Fans
  - 3.39 Others
  
- 3.4 Machinery (other than transport and electrical including engineering workshops).
  - 3.41 Agricultural implements
  - 3.44 Machine tools
  - 3.49 Others
  
- 3.5 Manufacture of metal products not elsewhere classified
  - 3.59 Others
  
- 3.6 Basic industrial chemicals, fertilisers and power alcohol
  - 3.60 Acids, alkali, salts, etc.. other than chemical fertilisers (including sodium chlorate produced by natural evaporation)
  - 3.61 Turpentine and resin
  - 3.62 Dyes and pigments
  - 3.63 Explosives and fireworks
  - 3.64 Synthetic resins and other plastic raw materials (including synthetic fibres and synthetic rubber)

- 3.65 Chemical fertilisers (including manure mixture)
- 3.69 Basic industrial chemicals, not elsewhere specified.

3.8 Manufacture of chemical products, not elsewhere classified.

3.80 Medical and pharmaceutical preparation

3.81 Manufacture of perfume, cosmetic and other toilet preparation

3.84 Paints, varnishes and allied products

3.89 Other chemical products (including insecticides, fungicides, weedkillers, etc..)

### APPENDIX III

#### GLOSSARY OF VARIABLES :

In this appendix we present a list of abbreviations used in the regression analysis along with their meanings.

L = suffix L denotes logarithmic transformation of the variable .

P M S = total value of plants and machinery deflated by sales turnover.

EXPROP = total value of exports deflated by sales turnover.

S C S = total selling costs deflated by sales turnover.

TECHOS, TECHO = total value of technology imports plus total domestic technical payments deflated by sales turnover.

EXINS = total value of export subsidy plus duty drawbacks received by a firm. This is also deflated by sales turnover.

PROSA = proportion of highly paid employees in the total number of people employed by a firm.

FEQ = propotion of foreign equity participation in the total equity of a firm.

LK/L = total fixed capital of an industry divided by the total number of people employed by the industry.



IMPT = total imports of an industry divided by the total output of that industry.

ASSS = total assets of the firm deflated by its sales turnover.

PRODIT = total domestic profits of a firm deflated by its sales turnover.

DUMMY = takes a value of 1 in case of a T.N.C. . For a purely domestic firm it takes the value of 0.

MDVIMP = takes the value of IMPT in case of a T.N.C. and 0 in case of a purely domestic firm.

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5. L'air Liquide of France went transnational because its products were difficult and expensive to transport . B.O. OxeY. Co. went to markets in Australia and South Africa. Bayer of Germany went to Imperial Russia for the same reason.
6. Some such companies were United Fruit, Rio Tinto, De Beer, Alcoa, International Nickle, Cadbury in Cocoa; Lever in vegetable,oil; Dunlop in rubber.
7. About sixty percent of the foreign capital stake in 1914 was directed to these countries. See appendix-I table 2 (a),(b).
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