UNIVERSITY OF STRATHCLYDE

AN ANALYSIS OF FOREIGN DIRECT INVESTMENT IN TURKISH MANUFACTURING INDUSTRY

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ABSTRACT

This dissertation focuses on the determinants of foreign direct investment in Turkey's manufacturing industry. The empirical analysis of determinants of foreign direct investment in developing countries is much less studied than those of developed countries. Overall, the most revealed features of foreign direct investment technological superiority together with product differentiation were found not to be a paramount factor in Turkish industry. The Turkish industrial policies and resultant market structure turned out to have created the principle conditions for foreign direct investment to thrive. A highly concentrated market, with considerably high sectoral protection rates and relatively fast market growth were found as the most significant factors in determining the level of investment.

The ability of foreign firms to take advantage of Turkish market conditions was found to play a major role. The most important of all their ability to prevail in sectors where high minimum capital was required, where managerial and high technical and production skills were of prime importance.

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CHAPTER ONE

Introduction

1.1: The Purpose of Study

The twentieth century's industrialised countries have experienced two main developments in their economies: First is the immense concentration of capital controlled by relatively few corporations in each industry; Second, these giant firms have come to direct an ever increasing proportion of international trade, production and investment. The question of what determines foreign direct investment (FDI) has dominated much of literature on the world-wide operation of multinational enterprises (MNE). Foreign direct investment by its definition involves more than one country, and attempts to answer this question have involved a study of characteristics of both countries, the source country from which FDI originate and the host country in which the investment is made.

These developments in economic institutions and efforts to understand the causes of FDI associated with MNE have been the focus of passionate debate. This is particularly true in its relation to developing countries. On the one hand it has been portrayed as an engine of growth and an efficient means of resource allocation, capable of eliminating international inequality. While at the same time it has been blamed for retarding economic development in the less developed parts of the globe.

The less developed countries are extremely heterogeneous and in the process of becoming even more so. However, the commonest feature shared by all of them is that they all want rapid industrialisation to break the chain of underdevelopment. With inadequate resources, technology, and capital skills, to achieve that objective, FDI has been sought usually as a package to compensate. The ways in which foreign direct investment is thought to contribute those countries' industrialisation have been closely linked to general industrialisation

strategies, which have been either import substitution or export oriented development strategies, or a combination of both. Accordingly, the determinants of FDI in less developed countries not only to some degree have differed from those of developed countries but also, they may differ among less developed countries depending on the development strategies chosen and level of income, market size, market growth, robustness of local competition , etc. In turn the level of development will be effected depending on the relative share of foreign firms in these countries. Parry (1980) has pointed to the more general interdependence between the determinants and effects of FDI as follows 'the various market imperfections and distortion which explain international direct investment associated with MNE ipso facto condition the efficiency and equity impacts in the host nation'(p. 15).

It is likely that factors, or more appropriately the intensity with which several factors are put to use by MNEs may differ in developing countries, where industrial backwardness, and low level of income are common characteristics. In addition, the interventionist trade regimes of those countries may have substantial effects on the extent and the sectoral composition of FDI in most developing countries.

There are some indications that the determinants of FDI in Turkey are related, on the one hand to import substitution industrial development strategy[1] e.g. the rapid growth of the Turkish economy, high expected rate of return in supplying Turkish markets, and high sectoral protection rates. While On the other hand, a set of advantages possessed by foreign firms that enable them to make the best use of Turkish market conditions are expected to play a major role.

This study concentrates on the determinants[2] of FDI in the Turkish manufacturing industry. The objectives of this work are three fold: (i) to evaluate

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1: See Alpar (1980), pp. 207-8. and Erdilek (1982), pp. 19-20.

the various theories of FDI advanced primarily to explain the determinants of these investments in industrialised countries, (ii) to deduct testable hypotheses from these theories and apply them to the Turkish case to find out to what extent they can explain the FDI in the manufacturing industry of Turkey, (iii) to discriminate between what may be called alternative theories in terms of their explanatory power of the determinants of FDI in the country studied.

In doing this we hope to be able to identify the major causes and their relative importance in determining the level and industrial distribution of FDI in the Turkish manufacturing industry. We hope the results to be derived from this study will have both theoretical and empirical significance in relation to FDI in developing countries.

1.2: Methodology and Data

The fundamental method of research in this study is statistical analysis which ranges from inferences based on casual observation on data collected to formal testing of an econometric model. Following the usual approach, firstly, we compare the performance of foreign and domestic firms and test if the differences are significant. Secondly, an empirical model is derived from theoretical and empirical studies of determinants of FDI, which involves the use of multiple regression techniques.

The work at hand requires detailed data which can only be obtained from special sources or can be generated from surveys. The data used throughout this investigation are from two main sources: (i) Macro and most industry level data are from official sources. (ii) Firm level data concerning foreign subsidiaries in Turkish industry are obtained from a survey conducted by state planning

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[2]: Despite considerable number of studies analysing the impact of FDI on Turkish economy (see Uras (1979), Sahin (1975), Alpar (1980), Karluk (1983), there is no study that has empirically tested the determinants of FDI in the Turkish manufacturing industry.

organisation(SPO) and from various publications of Journal of the Istanbul Chamber of Industry (JICI) on 500 largest industrial establishments in the Turkish manufacturing industry.

1.3: Definitions and Terminology

Before we proceed any further we shall analyse some of the definitions and terminology used throughout this study. Many different definitions of multinational enterprises have been made and so there is no universally accepted definition of MNE. Dunning (1981) defines MNEs as 'firms that engage in foreign direct investment' (p.3). This leaves out international involvement other than through direct investment. Hood and Young (1979) define a multinational as an 'enterprise which 'owns (in whole or in part), controls and manages income-generating assets in more than one country. In so doing it engages in international production, namely production across national boundaries financed by foreign direct investment'(p.3). Caves (1982) looks at MNE 'as an enterprise that controls and manages production establishments-plants-located in at least two countries.

A host nation refers to the country in which the MNE operates, whereas the home nation relates to the country which has been the base for the expansion of MNE. In addition a distinction is necessary between the parent company and its subsidiaries or affiliates. The United Nations Department of Economic and Social Affairs (1973), makes the following distinction between subsidiaries, affiliates, branches and associates: 'A foreign branch is a part of an enterprise that operates abroad. An affiliate is an enterprise under effective control by a parent company and may be either a subsidiary (with majority or sometimes as little as 25 per cent control of the voting stock by parent company) or an associate (in which case as little as 10 per cent control of voting stock may be judged adequate to satisfy the criterion)',(pp.4-5).

A definition of portfolio and direct investment is given in Hood and Young (1979). 'Portfolio investment involves the acquisition of foreign securities by individuals or institutions without any control over the participation in the management of the companies concerned,.. foreign direct investment is distinguished from portfolio investment in that it involves ownership (in part or whole) and management of a foreign operation; in addition with direct investment abroad a package of resources is transferred, whereas with portfolio investment, the resources are transmitted independently of each other'(p. 9).

For the purpose of this study FDI is defined to include any foreign equity capital participation[3] in a firm, regardless of the distribution of either ownership or managerial control between foreign and national partners. Portfolio investment is then only debt capital participation in a firm. An FDI firm is one with any foreign equity participation. A national firm, or an all-Turkish has none.

1.4: The Outline of the Dissertation

In chapter 2, we shall discuss in some detail a considerable number of FDI theories and their assessments. The theories are organised mainly on the basis of historical principles, to see them in relation to changing patterns of international capital movements. It also allows us to observe how the subsequent theories evolved from their predecessors.

Chapter 3, consists of two parts: The first part is about the historical development of FDI in Turkish industry. In this part we also give a brief industrial structure of Turkish manufacturing industry as it was shaped by import substituting development policies. An understanding of industrial strategies pursued provides us with one major component of the determinants of FDI in Turkey. In the second part an attempt is made to measure the multinational domination of Turkish economy in general and manufacturing industry in

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[3]: See Erdilek (1982), p. 1.

particular. By doing this we are able to assess, to a certain extent, the overall influence of FDI on domestic economy in comparison to some major developed countries.

In chapter 4, a first test of theories of FDI is attempted by a comparing the activities of multinational subsidiary with domestic firms. The first comparison involves intra-industry consideration of relative size and performance of foreign firms among the 500 largest industrial establishments for the period of 1980-1989 and across main industry groups. The result of this is important as it sheds some light on the distinguishing characteristics of foreign affiliates among their local counterparts. A further comparison is conducted between foreign and domestic firms (apart from those in the top 500) as related to the level of foreign shares of industry.

In chapter 5, we attempt to deduct hypotheses from alternative theories and a test is carried out by using multiple regression analysis. In the light of the results obtained we assess both the relevance and the discrimination between the alternative hypotheses tested.

Chapter 6, consists of a discussion of the econometric methodology applied in our model and an assessment of the reliability of the results on the basis of the statistical tests proposed.

Chapter 7, Conclusion.

CHAPTER TWO

Theories of Foreign Direct Foreign Investment (Literature Review)

2.1: Introduction

The purpose of this chapter is to survey and evaluate the main attempts so far proposed to explain the phenomenon of theories of direct investment related to the activities of Multinational Enterprises (MNE), which involve a wide variety of branches of economics[1].

The main bodies of theories are presented in a chronological order. This historical approach seems more fruitful for two main reasons[2]. It enables us to asses how theories evolve and how particular concepts are developed by theorists. Secondly it allows us to see the relationship between each theory and its underlining socio-economic conditions prevailing during at that particular period of time. Therefore classical Marxist theories are introduced first as they were the first ones put forward and the early Marxist theories relate to an early phase of foreign investment at the time when colonialism and the securing of raw materials were the primary concern among industrialising countries. Generally speaking, there is no distinct treatment of FDI in early Marxists writings.

The classical capital and trade theories are general equilibrium analyses and were developed on the assumptions of perfectly competitive market conditions. In this sense, they are not relevant to FDI, which is a particular phenomenon of imperfect market conditions lying outside of any general equilibrium framework.

1: The first three groups of theories namely, classical theories of imperialism, neo-classical paradigm and trade theories are included merely, to provide a multi-disciplinary view of FDI.

2: Ietto-Gillies (1992)

Our special concern is with prevalent theories of FDI that were developed mainly after the second world war. They have been presented under eight separate headings.

2.2: Classical Theories of Imperialism

2.2.1: Hobson

Hobson's theory of imperialism set out in his book first published in 1902 had a great influence on later Marxists writers. Hobson gives an analysis of the economic and political implications of the growing imperialist tendency of western countries in the nineteenth century, and particularly of Britain.

According to Hobson imperialism 'is the endeavour of the great controllers of industry to broaden the channel for the flow of their surplus wealth by seeking foreign markets and foreign investments to take of the goods and capital they cannot sell or use at home'(p. 85). Although Hobson relates this to be an outcome of increased concentration of industry that brings about an unequal distribution of income in the western countries, he does not think that it is the industrial progress that demands the opening up of new markets and areas of investment. The economic root of imperialism is the over-saving consisting of rents, monopoly profits and other unearned or excessive elements of income that have no natural relation to effort of production, and therefore don't impel their recipients to corresponding satisfaction of consumption. This over-saving in Hobson's analysis then drives the recipients to foreign investment and imperialist expansion. The line of argument that leads to this conclusion can be simplified as follows: (a) an era of fierce competition, causing a rapid process of monopolisation of industry; (b) this causes accumulation of wealth in a few hands and a large proportion of monopoly profits are saved, so saving increases rapidly; (c) 'The investment of these savings in other industries helped to bring these under the same concentrative forces'(p. 75); (d) this leads to saturation of manufacturing industry:

a great increasing of savings cannot find profitable outlays in the economy, domestic investment opportunities are limited; (e) excess saving generates a demand deficiency in the economy; (d) a real possibility for capital export emerges; (f) this generates pressure for annexation of territory, to open up the way for new investment. Having explained the reason behind the tendency to over-save Hobson asks if the imperialist expansion is an inevitability. He states;

> Let any turn in the tide of politico-economic forces divert from these owners their excess of income and make it flow, either to the workers in higher wages, or to the community in taxes, so that it will be spent instead of being saved, serving in either of these ways to swell the tide of consumption- there will be no need to fight for foreign markets or foreign areas of investment. (p.86)

Hobson further argues that when the economic and human costs of imperialism and the related distortion in the structure of public expenditure is compared with gains from imperialist expansion one is led to conclude that the nation as a whole does not benefit from imperialist expansion.

If it is not necessary and the nation as a whole does not benefit from it why then is it done? His answer is succinctly clear. 'Although the new imperialism has been bad business for the nation, it has been good business for certain classes and certain trades within the nation'(p. 46). Although certain classes and trades benefit, the prime mover and instigator are the financial investor. Therefore he reaches the conclusion that 'by far the most important economic factor in imperialism is the influence relating to investments'(p. 51).

So the 'taproot' of imperialism is under-consumption and this is caused by a mal-distribution of income. The solution lies in substantial social reforms that distribute more income to working classes and shift public expenditure from armaments towards public projects.

2.2.2: Hilferding[3]

Hilferding's major work (1910) Finance Capital is concerned with the internal development of industrialised capitalist countries. He starts with an analysis of the theory of money, then attempts to explain the rise of the joint stock company as a new form of organisation for capitalist firms and the related structural changes and implications for the system as a whole.

Hilferding's basic arguments can briefly be put; (a) competition creates monopoly which exercises control over small firms that they contract with. There is therefore a tendency towards the formation of huge blocks of capital organised in a hierarchical way; (b) Financial, industrial, and commercial capital are fused together as finance capital; (c) Monopolies are not yet able to control the world market, hence they need the protection of tariffs to increase their profits in the protected market and to extend their protected market as far as possible; (d) therefore finance capital favours expansionist policies.

Hilferding points to the ways in which owners of large blocks of capital could use the joint stock form of organisation to gain control of the capital of many small shareholders. The rise of the joint stock company characterised a massive concentration of economic power as well as a concentration of production. For Hilferding the main actors in the growth of monopoly are the banks, whose main functions were to centralise money capital, both by gathering together idle funds, and by performing a variety of other functions, for instance, acting on behalf of their clients in buying and selling of shares, and holding shares themselves. A rapid development of monopoly in banks together with the concentration of control over all major sources of finance has given the banks a dominant role in a highly

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[3]: This section on Hilferding draws heavily on Brewer (1989), pp. 88-108.

concentrated and interconnected capitalist system. He argues that the separation of industrial and financial capital was a characteristic of the competitive capitalism. In the era of monopoly capitalism this disappears.

> An ever-increasing part of the capital of industry does not belong to the industrialists who use it. They are able to dispose over capital only through the banks, which represents the owners. On the other side, the banks have to invest an ever-increasing part of their capital in industry, and in this way they become to a greater and greater extent industrial capitalists. I call bank capital, that is, capital in money form which is actually transformed in this way into industrial capital, finance capital[4]. (p.225)

Therefore financial capital is described as the product of fusion of industrial and finance capital that signifies the unification of capital. "The basis of this unification is the elimination of free competition among individual capitalists by the large monopolistic combines"[5](p.301).

Hilferding argues that with monopolisation of industries the function of tariff has been completely transformed. From being a means of defence against the conquest of domestic market by foreign industries it has become a means for the conquest of foreign markets by domestic industry[6]'(p.310). Why should monopoly need high tariff barriers? Hilferding answers;

> As we have seen, the protective tariff brings the capitalist monopoly an extra profit on its sale in domestic market. The larger the economic territory, the greater the volume of domestic sales...and the larger therefore the cartel's profits. The greater this profit, the higher the export subsidies can be, and the stronger therefore is the cartel's competitive position on the world market[7](p.313).

Hilferding considers capital movements from one geographical area or industrial sector to another as a normal characteristic of capitalist development.

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[4]: Qouted in Breewer (1989), p. 93.
[5]: Ibid., p. 94.
[6]: Ibid., p. 99.
[7]: Ibid., p. 99.

From Hilferding's work four major factors may be considered as the reasons for capital export.

1-Search for a maximum return on capital, this is considered as an entirely natural part of capitalism.

2-To overcome other countries' protective tariff barriers by producing within their home market.

3-The difference in interest and profit rates between different regions. The relatively developed financial system of industrialised countries brings about relatively lower interest rates and greater availability of capital. Therefore the industrialised countries are the main centres that engage in capital exports.

4-Relatively low wages, long working hours and, low rent in underdeveloped countries attract investment from industrialised countries.

There is a close association between the rise of finance capital and capital export in Hilferding's analysis. He explains this association by pointing to institutional changes which have taken place in the capitalist system. Accordingly, the old form of enterprise was not adequate to take advantage of capital exporting. This has only become possible through the establishment of joint stock companies. This form of organisation made it possible for subsidiaries to be formed in other countries without capitalists themselves having to go there. The link between the banks and industrial firms allowed much easier access to investable funds, often through a foreign subsidiary of the bank. In addition, a large firm, because of its size, has the advantage of undertaking a new installation in a remote country.

Finally the economic rationale considered above are reflected in three policy objectives of finance capital: '(1) to establish the largest possible economic territory; (2) to close their territory to foreign competition by a wall of protective tariffs, and consequently (3) to serve it as an area of exploitation for the national

monopolistic combines[8]'(p.326). Hilferding did not rule out the possibility of a forceful solution to the conflicts brought about by these policies between industrial countries and their respective satellites.

2.2.3: Bukharin

Bukharin's Imperialism and World Economy (Bukharin 1975) was written in 1915 and first published in 1918. Bukharin's theory on imperialism drew heavily on the work of Hilferding summarised above. The fundamental difference however is that while Hilferding focused on the process of concentration and centralisation of capital, Bukharin pointed to the emergence of two strong tendencies. First, there was a tendency of internationalisation of capital, the growing interdependence of the world economy. Second, that of the nationalisation of capital, the division of the World economy into various national blocks. According to Bukharin, these two tendencies are bound to create the contradictions which drives the capitalist system towards war and breakdown.

Bukharin argued that social relations of production on an international level were established by international trade. The international division of labour is determined by two main factors. One is the natural conditions in different part of the World that leads to production of different products in different countries. The second factor is the different level of development reached in different areas.

There are various forms of connection between countries that lead to an interdependent world economy: (a) international trade not only in different products, but even products of the same kind between countries; (b) connections between capital in one country with workers in other countries is established by capital movements, 'when for instance the shares of an American enterprise are bought at the Berlin stock exchange, production relations are thereby established between the German capitalist and the American worker'(p. 24); (c) 'a number of

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[8]: Ibid., p. 100.

other forms of economic relations may be observed, like emigration and immigration; migration of labour power; partial transfer of the wages of immigrant labour (' sending money home'); establishment of enterprises abroad, and the movement of surplus value obtained; profits of steamship companies, etc.'(p. 24).

In Bukharin's analysis the process of monopolisation of economy is close to the main lines of argument put by Hilferding. Along side industrial concentration, capitalists look for new markets and higher profits. Capital export appears in Bukharin's work as a result of overproduction of commodities in industrialised countries. The export of capital aids to decrease the overproduction of commodities. Imperialism is therefore needed to for securing of raw materials and of markets for products. Securing markets for products becomes even more vital as a result of increased production and projectionist policies pursued by many countries. The export of capital is further enhanced by the increasing monopoly profits in the national market.

Therefore the struggle for sources of raw materials and market for commodities goes alongside with the struggle for investment in the World market. Bukharin also suggested that the export of capital is more likely to cause contradictions that may result in war and territorial annexation.

2.2.4: Lenin

Lenin's pamphlet, "Imperialism, The highest Stage of Capitalism" was first published in 1917. The theoretical content of Lenin's work derives substantially from Hobson, Hilferding and Bukharin's earlier studies.

Lenin set himself to find out a series of tendencies in the development of capitalism in the period in which he was writing. According to Lenin the latest stage of capitalism can be defined as follows:

(1) the concentration of production and capital has developed to such a high stage that it has created monopolies which play a decisive role in economic life; (2) the merging of bank capital with industrial capital, and the creation, on the basis of this "finance capital", of a financial oligarchy; (3) the export of capital as distinguished from the export of commodities acquires exceptional importance; (4) the formation of international monopolist capitalist associations which share the world among themselves, and; (5) the territorial division of whole world among the biggest capitalist powers is completed.(p. 84)

Lenin explains the development of monopoly in banking and the domination of industrial capital by financial capital and then points to some of the characteristics of new stage. (a) 'Finance capital has created the epoch of monopolies, and monopolies introduce everywhere monopolist principles: the utilisation of "connection" for profitable transactions takes the place of competition on the open market'(p. 63). (b) The monopolisation of production leads to increasing socialisation.

When a big enterprise assumes gigantic proportion, and on the basis of an exact computation of mass data, organises according to plan the supply of primary row materials...; when the row materials are transported in a systematic an organised manner to the most suitable places of production, sometimes situated hundreds or thousands of miles from each other; when a single centre directs all the consecutive stages of processing the material right up to the manufacture of numerous varieties of finished articles; when these products are distributed according to a single plan among tens and hundreds of millions of consumer...then it becomes evident that we have socialisation of production. (pp.119-20)

(c) The socialisation of production goes with private ownership of the means of production and that constitutes the basic contradiction in the system which will ultimately lead to the end of capitalism. (d) Finance capital intensifies the struggle for the sources of raw materials for the export of capital and for the economic territory. (e) A fundamental feature of imperialism is the competition between several great powers to annex territory, not so much directly for themselves but to weaken their rivals and undermine their hegemony.

What explanation is there in Lenin's theory for capital export? The export of capital is clearly linked with the rise of monopoly as in the previous studies, and constitutes the main feature of the highest stage of capitalism. There seem to be two major factors that stimulate capital export. First the need for capital export arises in industrialised countries because capital cannot find a field for profitable investment. This is seen as a result of the following: 'as long as capitalism remains what it is, surplus capital will be utilised not for the purpose of raising the standard of living of the masses in a given country, for this would mean a decline in profits for the capitalists, but for the purpose of increasing profits by exporting capital abroad to the backward countries'(p. 60). The other factors relate to the existing elementary conditions for industrialisation in a number of backward countries that makes export of capital possible.

What effect will the capital export have on both capital exporting and capital importing countries? It is clearly stated: 'The export of capital influences and greatly accelerates the development of capitalism in those countries to which it is exported. While, therefore, the export of capital may tend to a certain extent to arrest development in the capital exporting countries, it can only do so by expanding and deepening the further development of capitalism throughout the world'(p. 62). According to Lenin, capitalism in industrialised countries has acquired a parasitic nature as the rentier capitalists live by "clipping coupons" without any relation to production. The profits from foreign investment make up only a part of total profits that flows back to industrialised countries. Investments in railways, general infrastructures, etc. are likely to stimulate the imports of products from industrialised countries. The export of capital therefore may encourage the export of commodities.

2.2.5: Luxemburg[9]

Luxemburg's main work was "The Accumulation of Capital" published in 1913. In it, Luxemburg develops a theory of capitalism that introduces two distinct arguments. First she thought that Marx did not explain sufficiently the problem of realisation in the analysis of expanded reproduction. The fact that in a capitalist economy where capitalist and workers are the only consumers the part of surplus value planned for investment could not be realised(be sold) due to lack of effective demand. Therefore she argued that capitalism cannot survive without the buyers outside capitalist society. Second in line with Marx's own analysis she argued that capitalism was in reality surrounded by a pre-capitalist mode of production, and that competition leads firms and capitalist states to expand into non-capitalist environment. Capitalism cannot exist by itself she argued but 'needs other economic systems as a medium and soil. Although it strives to become universal and, indeed, on account of this tendency, it must break down-because it is immanently incapable of becoming a universal form of production'(p.469).[10]

There are three major reasons that impel the capitalist system to search for non-capitalist environments. First there is the need to increase effective demand to resolve the realisation problem. Second there is need for raw materials for production. Third, the non-capitalist environment provides a reservoir of cheap labour power to the capitalist system.

The struggle to break up natural economies surrounding the capitalist system aims four main objectives: '(1) To gain immediate possession of important sources of productive forces such as land, game in primeval forests, minerals precious stones, and ores, products of exotic flora such as rubber, etc. (2) to 'liberate' labour power and to coerce it into service. (3) To introduce a commodity

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[9]: This section on Luxemburg draws heavily on Brewer (1990), pp. 58-72, and Ietto-Gillies (1992), pp. 56-9.

[10]: Qouted in Brewer (1990), p.59.

economy. (4) To separate trade and agriculture'(p.369).[11] The struggle takes market forms as well as the use of force, state power and fraud.

A major medium through which the state intervenes apart from ruining producers of natural economy by overtaxtaion, are through international loans, protective tariffs, and armament expenditure. The loans assist the accumulation of capital in several ways: (1) 'converting the money of non-capitalist groups into capital. (2) transforming, money capital into productive capital by means of state enterprise-railroad building and military supplies. (3) diverting accumulated capital from old capitalist countries to young ones'.[12]

The contradiction between capitalist and pre capitalist modes of production make a peaceful transition from the latter to the former impossible. This implies that militarism which helps to bring new societies under control and fight against rivals is, a congenital part of capitalist system. Moreover armament expenditure financed from indirect taxes lover real wages without confronting capital directly with labour. Most importantly an armament industry, by increasing effective demand alleviates the problem of surplus value realisation in capitalist society.

2.2.6: Recent Marxist Approaches

However new Marxist approaches to capital export differ substantially from classic Marxist writers considered above. It should be noted that like classical Marxists most authors in Marxist tradition have dealt with wider socio-economic and political issues and not just economics. Therefore the point of concentration has not generally been the international firm per se, but the underdevelopment and related dependency of less developed countries in a global capitalist network. Thus the issue of foreign direct investment and its impact on this process is analysed in a wider framework at an multidisciplinary level. Since this is not intended to be a

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[11]: Ibid., p.69.

[12]: Qouted in Ietto-Gillies (1992), p.58.

survey of imperialism and underdevelopment, only a summary of new Marxists views related to capital export is considered below.

The most important contributions to theory of imperialism have come from notably Baran (1973), Sweezy (1970), Baran and Sweezy (1966)and Magdoff (1966). Capital export, according to these authors' views has been, since the beginning of capitalist development indirectly from less developed countries to industrialised nations. Initially these took the form of transferring the raw materials to the capitalist centre. In the later stage of capitalist development up to now, the capital export has been in the form of profit, licensing and technical fees from the less developed countries. It is clear that Marxists writers have focused on net capital export instead of gross capital movements.

The essential difference between classical and new Marxist writers concerns the realisation of surplus value. Classical Marxists thought that surplus value invested in less developed countries prevented the capitalist economies from stagnation, While new Marxists assert that net capital export from less developed to developed countries increases the surplus value in developed nations.

How is it then possible for developed countries that they have not been faced with the severe crisis of ultimate breakdown expected by classical Marxists? Baran (1973) explains the importance of new activities undertaken by the governments of these countries in absorbing increasing economic surplus.

> The loans and grants to so-called friendly governments of dependent countries, the outlays on the military establishment needed to 'protect' certain territories or to enforce certain policies abroad, the expenditure on sprawling apparatus designed to organise propaganda, subversion, and espionage both in subject areas as well as in other competing 'uncertain' imperialist countries-all assume prodigious magnitudes. (p. 246)

Baran points to the fact that this expenditure accounts for an average of twenty per cent of gross national product in the United States for a decade after second

world war. According to Baran the effect of these expenditures is better reflected when one consider it as the share of economic surplus, absorbed by these outlays.

Thus the impact of this form of utilisation of the economic surplus on the level of income and employment in an advanced capitalist country transcends by far the income-and employment-generating effect of foreign economic activities themselves....that the means of imperialist policy overshadow almost entirely its original ends has tremendous implications. Providing a vast outlet for the overflowing economic surplus, this spending on the wherewithal of imperialist policy becomes the main form of government's 'exhaustive expenditure', the central core of government intervention on the behalf of 'full employment'. (pp. 246-47)

However Baran does not think that this solution is stable,

although this additional investment causes an increase of income, the resulting widening of demand cannot keep pace with the expansion of capacity. Excess capacity becomes ever more pronounced not merely in the competitive branches of economy but also in the monopolistic and oligopolistic industries. Thus what confronted the economic system before, now appears in a magnified and more acute form. (p. 252)

2.2.7: Conclusion

Marxist writers have analysed the international firm as a part of the modern capitalist system that consists of a complex of private corporate policies, supplemented by induced governmental support, seeking to develop secure sources of raw materials and food, secure market for manufactures, and secure outlets for both portfolio and direct capital investment. The classical Marxists connect colonialism to the economic structure of developed nations. In particular they stress the role of concentration and finance capital that dominates major industries in these countries. Luxemburg concentrates on the relationship between capitalist and pre-capitalist environments and explains this with the under-consumptionist approach developed by Hobson.

On the whole, Marxist writers believe that imperialism is an inevitable result of capitalist development, which has a tendency towards concentration and geographical agglomeration.

MNE activity abroad is linked to the development of capitalism within which various monopolistic pressures lead to the search for new investment outlets. The under-consumption and declining rate of profit are the two main lines of arguments put forward to explain the search for investment outlets by classical Marxists. In analysis of most modern Marxists however MNE invests in host countries to accumulate more capital there and transfer it back to the investing country.

2.3: Neo-Classical Capital Theory

The conventional theory of international capital movements explained international capital movements in a neo-classical framework. The models developed to explain foreign investment were based on the neo-classical assumptions of a perfect competitive market, perfect knowledge and certainty. Moreover it was assumed that countries were not equally endowed with the same proportion of capital and labour and unlike the labour the capital and products were mobile between countries. It should also be noted that neo-classical writers did not distinguish between portfolio and direct investment.

In Bertil Ohlin's (1933) analysis international capital movements take place due to exogenous factors such as reparations or gifts. Ragnar Nurkse (1933) takes Ohlin's analysis a step further as he explains capital movements by interest rate differentials between countries. Interest rates are determined by demand and supply and a differential in interest rates can arise as a result of changes in either supply or demand conditions.

A change in the supply of loanable funds in one or both nations will, other things remaining the same, affect interest rates and hence the differentials between two countries. Demand for loanable funds may increase as a result of technical changes in production methods that lower production costs, or changes in

consumers tastes that induce production increases and the amount of capital needed to raise production to desired levels in various industries. A change in supply or demand for capital leads to interest rate differentials which cause international capital movements.

Carl Iversen (1935) explains international capital movements as a result of interest rate differentials between countries. One of the factors that affect the level of interest rates is the risk involved. According to Iversen, foreign investment entails higher risk than domestic investment. Therefore for international capital movements to occur the difference in interest rates between countries should be high enough to cover the cost and extra risk of capital transfer.

Under the static comparative analysis of neo-classical economists capital will move from countries where the interest rate is low to countries where it is high. Capital continues to move until interest rates are everywhere equal and the marginal product of capital in the countries is the same.

A number of economists, notably Bandera and White (1968), Stevens (1969a), and Severn (1972) have applied the neo-classical accelerator model of capital formation to international investment. FDI is specified as either the plant and equipment expenditure of subsidiaries or the financial flow of funds associated with direct investment. Both these specifications have been found to be highly correlated with some measure of "sales" associated with foreign subsidiaries in those empirical studies using the capital:output adjustment form of neo-classical investment theory.

There are a number of studies, which applied the portfolio model to the analysis of international capital flows. Prachowny (1972) and Stevens (1969b), using the Markowitz-Tobin portfolio model, have tried to test whether the multinational firm chose investments so as to maximise a utility function positively related to expected return and negatively related to risk. According to this model, in equilibrium the optimal ratio of capital in two locations (Ki/Kj) will be

determined by the expected returns of two assets (ei, ej) their variances or risks (vi, vj) and the riskless rate of interest, r* in following way; Ki/Kj= (ei-r*)vj/(ej-r*)vi The results of their testing were mixed. Stevens, for example, found aggregate investment to Latin America significantly (negatively) related to the variance of past profits as the theory implies; however, when regressions were disaggregated by country, the result was inconclusive.

Attempts have also been made to asses the impact of factors, such as differential rates of inflation, exchange rates and that of tariffs. Horst (1972a) found that 'tariffs imposed by the foreign country encourage U.S. firms to substitute subsidiary production for exporting'(p.43). Scaperlanda and Mauer (1969), in an attempt to find out the determinants of US direct investmetn in EEC, concluded that 'regardless of the time period examined that only the size of market hypothesis can be supported statistically. Negative findings were discovered for all variants of growth and tariff discrimination hypotheses were rejected as not statistically significant regardless of the model and time period studied'(pp. 566-7). Balassa (1966), in a study analysing US direct investment in the EEC suggested that the role played by tariff discrimination in inducing American firms to locate in the common market was not evident between 1957-58 and 1963-64. The substantial increase in American investment was suggested to be due to the enlargement of national markets through integration in the EEC.

Again there has been concern about the effect of changes in foreign exchange rates on private capital flows. Rhomberg (1966), attempted to investigate, how the private capital movements in any one country responded to changes, or expected changes, in foreign exchange rates and in the country's prices and costs, given the other factors which influence the incentive to invest in that country. He concluded 'in comparison with effect of exchange rate policy on the balance of payments as a whole, its impact on private capital movements is, in the long run, likely to be small'(P.21). Batra and Hadar (1979) have analysed

the impact of changes in exchange rates on MNE's attitude towards production at home and abroad and export to foreign markets. They suggested that, given fixed exchange rates, a devaluation of the home currency will increase export on the part of the firm, but the production in the two countries can go either way because this depends on the behaviour of marginal cost. Krugman (1989) has pointed to two possible effects of exchange rate instability on firm decisions to invest in another country; firstly, the firm may delay its investment decision 'even if it regards appreciation and depreciation as equally likely'(p.68). This cautious attitude arises from the fact that the costs incurred due to home currency appreciation after the investment is made are thought to be bigger than the costs of not having invested prior to home currency depreciation. The result is a delayed response on behalf of the firm to more fundamental factors, such as locational ones. The second possible effect may be that it may cause firms to install excess capacity in various locations so as to take advantage of lower location costs brought about by large exchange rates movements. In the short run this enables firms to respond more quickly to exchange rate movements, while in the long run, there is a delayed long-run response to changes concerning adding or scrapping existing capacity.

2.3.1: Conclusion

The chief problem in the neo-classical approach is the unrealistic assumptions of perfect competition. The notion of perfect competition implies that prices everywhere change to bring supply and demand into equilibrium. Instances of disequilibrium conditions in factor markets and exchange markets causes the FDI flows until the equilibrium is attained. According to this framework FDI has a transitory character, it ceases once the equilibrium is reached[13]. The neo-classical theory of international capital movement has been the subject of severe criticism

[13]: See Calvet (1981), pp. 44-5.

by many economists as being inadequate and unrealistic to the facts of FDI. Hymer (1976), asserted that international operation of firms occurs in some industries throughout the world rather than in all industries in same countries. The rationale of this he argued, was that foreign direct investment was a phenomenon particular to firms and industries in contrast to portfolio capital movements which depend on the general conditions in a country such as the interest rate. Kindleberger (1969), argued that 'in a neo-classical world, where all markets operate efficiently, and where there are no external economies of production or marketing and where information is costless and there are no barriers to trade or competition, international trade is the only possible form of international involvement'(p.14). Dunning (1973), pointed out many shortcomings of this approach which can be briefly put as follows; first, with regard to portfolio theories, Dunning argues that they can only partly explain the international capital formation of firms or that part of it financed by direct foreign investment. This is mainly because, unlike movements in portfolio capital, which are essentially financial transactions between independent lenders and borrowers, direct investment involves no change in ownership. It does, however, involve the transfer of resources other than money capital, i.e. technology, management, organisational, and marketing skills, and it is expected return on these rather than on the capital per se, which lead enterprises to go international. Secondly, Dunning argues that despite the emphasis being put on the profitability of foreign subsidiaries, to explain either foreign capital formation or movement in international capital flows, these theories fail to answer the question of how this profitability is brought about? According to Parry (1980)'The capital theory is not particularly valuable as a theory of direct international investment, other than to confirm that capital theory tends to hold across national boundaries. An explanation of subsidiary plant and equipment expenditure or of the direct-investment funds associated with the expenditure does not have much to say about

why a foreign subsidiary exists or why it expands to serve a particular market'(p.21).

2.4: International Trade Theory and FDI

Adam Smith's (1776) theory of absolute advantage stated that the existence of beneficial trade opportunities depended upon unregulated free trade which would enable each trading country to specialise in goods in production of which they were the most efficient, because of natural and acquired advantages. It was left to David Ricardo (1817) to substitute the concept of comparative advantage for that of absolute one. According to Ricardo, a country's comparative advantage was based on the differences in its relative labour productivity which itself was an outcome of international differences in technology that country developed. But the question as to what determined the technological inequality among the countries was not addressed, instead the comparative cost differences were assumed to be a fact of life.

The factor-endowment theorem developed by Heckscher and Ohlin, and its later refinement by Samuelson which is known as the H-O-S model, for short, states that a country exports the good which uses intensively the factor of production with which it is relatively well endowed, and imports the good using intensively the factor with which it is relatively poorly endowed. In other words, a capital-rich country exports the capital-intensive and imports the labour-intensive good. One of the important implications of this model is that of factor price equalisation as it is assumed that free trade is at least a partial substitute for free factor movement, there will be a tendency for trade to contribute towards the equalisation of factor prices internationally. It is worth noting that there is no room for foreign direct investment even in this neo-classical version of trade model as it explicitly assumes domestically mobile factors of production and immobility of capital and labour

internationally. It also assumes that production functions are the same everywhere As pointed out by Baldwin (1970), all the variety of classical and neo-classical theories of trade makes it impossible for trade in factor inputs, mainly because the conditions required for such trade are assumed not to exist.

Recognition of simplicity of international trade theory has led a number of economists to re-modify and bring it in touch with reality. Consequently two assumptions of the H-O-S model were relaxed by Mundell (1957) in order to explain foreign investment: (i) factors are mobile between countries and (ii) there are barriers to trade. According to Parry (1980), with relaxation of free trade assumption, the theory may be able to explain a great deal of FDI. This can come about in two main ways; 'first, where a foreign market is being served by exports and there is an imposition of or increase in artificial trade barriers, or an increase in transport costs, a defensive direct investment response may result... Second, the imposition of an artificial trade barrier may stimulate a direct investment response even though no previous commitment to that market existed. In this case, direct investment is a more positive response to profit opportunities in protected markets'(p.23).

On the other hand Posner (1961) tried to demonstrate role of dynamic technological advantages in explaining trade between countries. According to Posner innovation in one country will effect its comparative advantages and thereby generate trade, which will take place during the time lag while the other countries attempted to imitate the innovation in question. Consequently, trade generated by this process will gradually be eliminated, as the technology becomes standardised internationally. At this stage, pattern of output and trade will be determined by the static Heckscher-Ohlin conditions of relative factor endowments.

Despite the emphasis put on the innovation by the so-called technological gap theory, it is not clear as to what determines this innovation itself. Here the work of

Vernon (1966), which will be dealt with later, provides an explanation to the question.

The Implications of MNE for international trade theory have received considerable attention by the economists working within this field of economic analysis. The result has been to extend the traditional trade theory to incorporate the MNE. Although a different emphasis has been put on different factors thus conferring dissimilar implications about the level and the pattern of trade and investment, the common feature embracing most of them is that of an eclectic nature. Here three factors that suggested to be crucial in order to explain international trade with MNE, are (i) Ownership-specific assets: R&D, advertising intensity, management etc. and thus, there are differentiated products, economies of scale and monopolistic competition. (ii) Locational factors: differences in relative factor endowments and impediments to trade, i.e. transportation costs, tariff. (iii) Internalisation: firm with ability to internalise across national boundaries when it is suitable to do so. It should be noted that internalisation is not explicitly considered in all the studies mentioned below.

A number of studies can be included in this group : Gray (1984) has suggested a generalised theory which combines the neo-technological and neo-factor theories of trade and incorporates into its centre the role of trade barriers. Helpman (1984), Markusen (1984), Horstmann and Markusen (1987), and Ethier (1986) have tried to set MNE into a general equilibrium theory of international trade. According to Helpman (1984) a profit maximising firm will choose cost-minimising location for production; thus, given the ownership-specific advantages, the MNE emerges as a result of differences in relative factor endowments[14]. Ethier (1986), while drawing on the same factors as mentioned above, focuses on the role of internalisation in his general equilibrium theory. Ethier argues that the presence of MNE is positively related to the size of the technological dispersion

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[14]: Helpman (1984), pp.451-452.

which is based on resources devoted to R&D, and also that similarity in relative factor endowments makes direct investment more likely, and provides a basis for intra-industry trade and causes wages to be more nearly equal internationally[15]. Finally, Krugman (1980) has emphasised firstly, the role of the economies of scale on countries comparative advantages and related trade patterns. It is argued that in the presence of increasing returns, countries will tend to export the goods for which they have large domestic markets[16]. The implication is that industries initially expand to meet home market demand and export once the home market is grown to the extent that it enables the industry to achieve economies of scale and competitive unit costs. As the products were produced for the tastes and income levels of the domestic market export is likely to be made to those countries where preferences and standard of living are similar to those of home.

2.4.1: Conclusion

It is worth noting that with the notable exception of Vernon's product cycle model, all of these extended and re-modified new theories of trade were developed to explain international trade rather than FDI. However, quite independently, as will be discussed below, theorists of FDI have been developing models including very similar variables such as technology, product differentiation and economies of scale which were suggested to explain the presence of MNE. Most of the theoretical work done under the rubric of theories of FDI, however, has fallen outside the general equilibrium framework of international trade and investment theory, and this is discussed in the next section.

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[15]: Either (1986), p.831.

[16]: Krugman (1980), p.958.

2.5: Theories of Foreign Direct Investment

2.5.1: Structural Market Imperfection

The theories that have been presented under the heading of structural market imperfection share the common notion that FDI is associated with imperfections in goods and factor markets throughout the world. The market imperfection approach starts with postulates that a foreign firm investing in another country possesses some advantages that enable it to operate more profitably than local competing firms. These advantages are specific to the firms and are not available to others on the open market. The most important advantages are suggested to be related to: technology and marketing skills, excess managerial capacity, financial and monetary factors including access to cheap capital and raw materials. The theories included in this group are presented under six specific headings. (i) Market Imperfection, Hymer-Kindleberger. (ii) Horizontal and Vertical Integration, Caves. (iii) Product Life Cycle, Vernon. (iv) Oligopolistic Reaction, Knickerboker. (v) Transnational Monopoly Capitalism, Cowling and Sugden. (vi) Currency Areas, Aliber.

2.5.1.1: FDI and Market Imperfections

Hymer's thesis (1960, published 1976) is widely known to be the first serious work of analysis of the MNE. Hymer's first contribution was to show that the Capital theory (interest rate differential) could not explain FDI, as, unlike portfolio investment, FDI involved control. The second fundamental contribution was to relate FDI to the market imperfections. According to Hymer, there are at least three major factors which affect a national firm decision whether to become multinational. These factors are (i) the possession of some kind of (oligopolistic, ownership or monopolistic) advantages, (ii) the removal of conflict, (iii) and, the replacement of market imperfections. However, it has been argued that Hymer, although familiar with transaction costs analysis, emphasised structural market

imperfections rather than exchange costs of transactions taking place in intermediate product markets. (Dunning and Rugman, 1985). It should be noted that Hymer was mainly concerned with initial acts of FDI undertaken by the national firm, rather than the growth of MNE. As a result , he firstly addresses himself to the question of why a foreign-owned firm is able to compete with indigenous firms in the host economy, given the inherent disadvantages of operating in an alien market. There are two kinds of obstacle, firstly, the indigenous firm has a knowledge of consumer tastes, the legal and institutional framework of business, customs which the foreign firm can only acquire at a cost. Secondly, the foreign firm has to incur increased expenses in terms of communications and misunderstanding of operating at a distance, and foreign exchange risk has to be considered. For MNE investment to prove profitable, therefore, the foreign-owned firm entering from abroad must have some advantages not shared by its local competitors. The emphasis here is on the advantages which are specific to individual firms. These advantages may take the form of (i) the ability to obtain factors of production at a lower cost than the other firms; (ii) a firm may have a more efficient production function; (iii) a firm may have better distribution facilities or differentiated products. Hymer also points out that the advantages a firm may possess relative to a firm of its own country may be quite different from the advantages it possess relative to firms of other countries, e.g. American firms will have easier access to US capital market and a skilled labour force. For these firm-specific advantages to be exploitable in foreign countries they must be readily transferable within the firm and across distance. The possession of these advantages may cause firms to have extensive international operation of one kind or another. But the possession of certain advantages does not necessarily mean that the firm will have its own enterprise in a foreign country since the firm can often license, rent , or otherwise sell its advantages, or export the commodity embodying the advantage itself. The investment decision by such a

firm will be determined by the degree of imperfection in the market concerned. If the market is imperfect; if there are only a few buyers and sellers of the advantage it is more likely that the firm will engage in foreign production. Conversely, if there are many buyers of the advantage and entry is not difficult (more like a perfect market) the firm will be able to appropriate the full rent from its advantage by other forms of arm's-length transactions.

The second factor crucial to international operation of the firm is seen to be the removal of conflict between firms in different countries. Hymer argued that firms in different countries are often connected to each other through markets. They compete by selling in the same markets or, one of the firm may sell to the other. In such circumstances it may be more profitable to have one firm controlling all the enterprises rather than having separate firms in each country. In another words, it is profitable to substitute centralised decision making for decentralised decision making. For this to happen two conditions are to be satisfied. First of all, there should be competition, potential or actual, between the firms of different countries. And secondly, entry into the market is difficult and there are only few firms. If entry is not difficult, there is not much point in trying to control the market. Whatever increase in profits might be achieved will soon be lost because of the entry of new firms. When there are more than a few firms co-operation becomes more difficult.

The third important factor mentioned but not fully elaborated in Hymer's original work is that of internalisation. Hymer discusses the role of internalisation when he explains why firms may prefer to use its own advantage by itself rather than license it to someone else. Hymer (1976) points out:

> the firm is a practical institutional device which substitutes for the market. The firm internalises or supersedes the market. A fruitful approach to our problem is to ask why the market is an inferior method of exploiting the advantage; that is we look for imperfections in the market...Impurities in the market are not the only kind of imperfections which are relevant here. In a world of uncertainty there may

be conflict of evaluation which makes co-operation difficult ...Aside from causing a conflict of evaluation, uncertainty makes it difficult for buyers and sellers to achieve a satisfactory contract. If a contract provides rigid provisions, changing conditions will hurt one party and benefit the other...A reluctance to license may also arise from the inherent danger of losing the advantage. The licensee may discover a process which substitutes for the advantage. (pp.48-51)

The question of which specific kind of advantages were likely to be more important than the others was left to later scholars, as will be explained below. It will not be much exaggeration to suggest, as Pitelis (1991) does that three main traditions (market imperfection and its variants, internalisation, and eclectic approaches) subsequently developed by the mainstream economists all build upon Hymer's original insights[17]. The extension and further elaboration of those points by later scholars is presented below.

Kindleberger (1969) having linked FDI to the imperfection of the markets as he puts it 'for FDI to thrive there must be some imperfection in markets for goods or factors including among the latter technology, or some interference in competition by government or by firms which separates markets'(p.13) lists a number of potential advantages which include:

a. departures from perfect competition in goods markets, including product differentiation, special marketing skills, retail price maintenance, administered pricing, and so forth; b. departures from perfect competition in factor markets, including the existence of patented or unavailable technology, of discrimination in access to capital, of differences in skills of managers organised into firms rather than hired in competitive markets; c. internal and external economies of scale, the latter being taken advantage of by vertical integration; d. government limitations on output or entry.(p.14)

Despite a comprehensive list of these advantages and the emphasis being put on them in determining FDI, the question, as to which of these advantages is the

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[17]: It should be noted that Hymer's (1970, 1971) later works which stresses the contradiction and tension caused by functional and geographical division of labour brought about by international production, have not recieved much attention by main stream economists.

most significant in practice, is not clear yet. To answer this question several views have been put forward.

Lall and Streeten (1977) have suggested that the more decisive advantages which in fact determine why some industries and firms go transnational while others (despite being oligopolistic, or having access to cheap capital or skilled management) do not, are marketing and technology. And they went on arguing that superiority in marketing seems to be an even more fundamental precondition for transnational expansion than is superiority in technology. Hirsh (1976) lays emphasis on the advantages conferred by knowledge obtained from investment in product or process research and development, as well as investments in advertising and other promotional outlays, which enable the firm to create distinct and differentiated products, while Johnson (1970) has suggested that the most important advantages have the characteristic of a public good within the firm, i.e. they can be exploited by a subsidiary of the parent firm without any additional cost to the parent or to the subsidiaries already exploiting it. In an important work relating to US investment in Canada, Horst (1972b) has investigated why some firms in a given industry invested abroad while others did not. The result was a close relationship between firm size and the propensity to invest abroad. According to Horst, factors such as R&D and advertising were either industry specific or could be captured in the size of the firm.

2.5.1.2: Horizontal and Vertical Integration of Firm and FDI

Drawing on the same line of market imperfection, Caves's (1971) analysis concentrates on the industry characteristics of investment and on some structural features of the markets in which MNEs operate. Caves's central theme is the parallelism between FDI and horizontal and vertical integration of firms in a geographically segregated market. Thus, through horizontal investment abroad MNE extends its operation by producing the same lines of goods as they produce

in the home market. Vertical expansion of MNE operations take place to produce abroad a raw material or other input to their production process at home. Foreign investment that does not fall into these two categories is considered to be conglomerate.

For Caves there are mainly two conditions to be satisfied for horizontal foreign production to take place ; (i) a firm must possess some unique assets in the form of knowledge of a public-goods character that can be transferred to other markets at little or no cost. These special characteristics of the asset must offset the inherent disadvantages of operating abroad , which are not incurred by host country's firms. (ii) the rent obtainable from its knowledge in a foreign market must be tied to the actual process of production that is the firm must find production abroad more profitable than other alternative means of exploiting this unique asset abroad.

With these two requirements product differentiation becomes a necessary characteristic of industries in which direct investment takes place. Differentiation of products leads to different profit rates according to varying success in differentiation. According to Caves the link to the basis for direct investment is this: 'the successful firm producing a differentiated product controls knowledge about serving the market that can be transferred to other national markets for this product at little or no cost'(p.6). This proposition holds whether the differentiation takes the form of patents or brand names, or is a result of an advertising campaign.

Caves's analysis leads to the prediction that horizontal FDI would occur in industries where products are substantially differentiated, and research and development expenditure are considerably important as the great proportion of R&D expenditure is on new products and product development.

The alternative of licensing an independent producer is not a satisfactory solution. This is because the information cannot be transferred independently of entrepreneurial manpower, or uncertainty about the value of the knowledge in the

foreign market will preclude agreement on the term of licensing agreement that will capture the fully expected value of the surplus available to licenser[18]. In addition to this there is the relatively high fixed cost of information associated with undertaking FDI. Therefore while large firms shy away from licensing agreements it is the relatively small firms that prefer licensing to FDI.

On the other hand, the motives for vertical FDI are; (i) Firstly, the avoidance of oligopolistic uncertainty. Where there are only a few buyers and sellers of raw materials, uncertainty over long-term supply and prices can be eliminated through common ownership of two vertically related stages, (ii) The second motive for vertical integration is the erection of barriers to the entry of new rivals'. If there are a low number of firms in the processing industry, they may try to raise substantial entry barriers by extending their control to the input sources, as a result they may increase their joint profits. Industries in which vertical direct investment takes place tend to have high seller concentration which motivate firms to eliminate uncertainty and raise barriers to entry.

The overall result of Caves's analysis suggests that FDI are a phenomenon of certain specific industries and tend to broadly equalise the rate of return on equity capital in a given industry in all countries where production actually takes place, but not between industries in a given country.

2.5.1.3: The Product Life Cycle and FDI

Another kind of theory which belongs here is Vernon's (1966) product cycle theory (PCT). However, PCT is distinguished from the other approaches mainly because of two reasons: (i) It treats trade and investment as part of the same

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[18]: Caves argues that, only in some certain cases the alternative of licencing can be as profitable as FDI; where, the rent yielding advantage of the parent firm lies in one-shot innovation of technique or product, such as a new method for making plate glass or the secret ingredient of a successful soft drink (p. 7).

process of exploiting foreign markets, and (ii) It explains this relationship in a dynamic context. In the PCT, the introduction and establishment of a new product in the market follows three stages. Analysis of the first stage is concerned with what determines the initial location of production. The second stage of analysis focuses on whether emerging foreign markets are serviced by export or by local production. As the price competitiveness becomes more important the third stage of the theory emphasis the comparative advantage home and host countries.

The PCT provides a useful framework for explaining the early post-World War II expansion of US manufacturing investment in other advanced countries or some of Japanese investment even now. Although, the sequential development process assumed may still have same applicability for firms which are expanding abroad for the first time and for MNE activity associated with final product type. The theory's explanatory power has waned with changes in the international environment (Vernon, 1979). It may be less applicable now for an established MNE: the model of planning products for one market before selling these abroad does not adequately describe the complex activity of market segmentation in different countries which underlies such MNE practice. Many MNEs have expanded their product development horizons beyond their home markets and are innovating products in response to opportunities or threats in many of the markets to which they are exposed. Nonetheless, it may still explain a great deal about the nature of FDI in less developing countries.

Later writings by Vernon (1971, 1974) have led to modifications of his initial theory of product cycle. The emphasis has been put on the oligopolistic behaviour of MNEs, and oligopolistic market structure made possible by barriers to entry. The three stages of the cycle are thus viewed respectively as those of innovation-based oligopoly, mature oligopoly, and senescent oligopoly.

In the first phase of the cycle, innovation-based oligopoly, innovations continue to be developed in line with domestic market conditions as before except

that on the supply side not only are labour-saving innovations as have occurred in the US. But land and labour saving (Western European) and material-saving (Japanese) ones have taken place.

In the second, mature oligopoly stage however, the assumption is that product and locational strategies are based upon the actions and reactions of other MNEs. Economies of scale in production, marketing and research constitute an effective entry barrier, behind which rival firms plot and counter-plot. Each player nullifies aggressive strategies initiated by the others, by matching them move for move. A leader commencing the production activities in a new market is immediately followed by his rivals. The ultimate sanction against a rival is the instigation of a price war; because tariffs tend to immunise firms from price competition through imports, firms set up production in their rivals' major markets to strengthen their bargaining positions. The ultimate aim is to stabilise market shares throughout the World. Stability is achieved when each of the rival firms produces in each of the world's major markets.

The final stage is senescent oligopoly, in which economies of scale cease to be an effective deterrent to entry, and after attempting to erect other barriers, e.g. by differentiating their product through advertising, the producers reconcile themselves to competitive pressures. Production locations are then more closely determined by cost differentials than by adjacency to markets or oligopolistic reactions.

2.5.1.4: Oligopolistic Reactions and FDI

Closely related to Vernon's subsequent works of oligopolistic behaviour on MNEs, is the theory of FDI suggested by Knickerbocker (1973), who has argued that the oligopolistic structure of certain industrial markets provides a source of competitive advantage and motivation for firms to follow-the leader behaviour in such industries. According to this theory, oligopolists follow each other into new

foreign markets as a defensive strategy: once one firm invests in a particular region, the others follow suit in order to negate any advantage that the former might gain, even if this confers no immediate advantage on the follower. Having tested his theory on the data for 187 large US-based MNEs, he shows that the concentration ratio as an index of oligopolistic performance and the bunching of investment are positively correlated. Another positive correlation is also found between bunching and profitability.

The important implication of Knickerbocker's thesis is that foreign subsidiaries of firms tend to be established in clusters, that is once one MNE sets up a subsidiary in a foreign country then its rivals respond by opening up their own affiliates in that market, and that this clustering tends to be greater in the more oligopolistic industries.

2.5.1.5: Transnational Monopoly Capitalism and FDI

One of the latest theoretical contributions that focuses on the oligopolistic market structure in which MNEs operate comes from Cowling and Sugden (1987), and Sugden (1991). The main themes of their analyses may be summarised as follows: (i) firms in general, and MNEs in particular are defined on the basis of control rather than legal ownership of assets; (ii) the theory of the international firm is based on the strategic decisions of firms operating in an oligopolistic environment; (iii) domination over labour constitutes an important element of international firms' strategies towards their rivals and market power; (iv) the emphasis is put on distributional considerations of MNEs activities.

Cowling and Sugden's (1987) analysis centres on the coexistence of rivalry and collusion between firms in an oligopolistic environment. The existence of rivalry between firms means that they must secure a position whereby they can defend against rivals, for example, not letting others gain profits at their expense, and attack by improving their profits to the detriment of rivals'. From these two

motivations,(rivalry and collusion), two sets of reasons are given to explain the existence of MNE. The first reason is that MNE is created because a firm may need to defend itself against rivals, fearing the latter will undermine its market position. Secondly, the initial move by a firm to produce in several countries may be an attack on its rivals. By doing so a firm attempts to gain at its rivals' expense. These gains arise from the advantages related to cost and demand factors in various markets which undermine rivals' market positions. Thus, the co-existence of rivalry and collusion means that firms seek to maintain and improve their market dominance, and the same factors cause both defensive and attacking moves. But firms engage in foreign production not only as a means of increasing their market dominance but also to strengthen their bargaining power over wages and work conditions by their greater ability to shift production between various locations. Sugden (1991) provides many cases in which a firm's attempt to dominate a labour market may cause it to go transnational. The result is that the "divide and rule" hypothesis may provide at least a partial answer to existence of some of multinationals.

Suppose, for instance, firm A decides to erect production facilities to manufacture a particular good. Ceteris paribus, it will employ those workers accepting the lowest wages...If all potential workers act collectively, employers will simply have to settle for the best they can negotiate with, for example, the trade union. However, if workers do not act collectively, employers can play off one group against another...For instance, having asked workers in country X their price, A can tell workers in Y concede, firm A can return to workers in X and seek still more gains. On some occasions A will produce in just one country because workers in that country always accept the lowest wages. But this will not always be so, in which case transnational arise.(p.179)

According to Cowling and Sugden, the presence and activities of transnational firms increase monopolisation throughout World economy. This is mainly because : (i) international markets are not made more competitive by international trade as it is also controlled by MNEs; (ii) capital has acquired more power in its relation with labour as a result of increasing international production.

2.5.1.6: Currency Areas and FDI

A major theoretical contribution to the understanding of FDI is Aliber's (1970, 1971, 1983) theory of MNE, as a currency-area phenomenon, which can be incorporated in to market structural imperfection in the sense that it is oriented toward a search for an advantage of MNE over its domestic rivals. But, according to Aliber this advantage is specific to all firms based in a particular currency area, that is, it is not firm-specific, but rather country or region-specific advantage. Aliber assumes a world with different currency areas in which, a MNE is able to borrow funds more cheaply than potential competitors in host nations. Aliber's argument is that, when there is a risk of change in the exchange rate, the firms of a strong-currency area are at an advantage and are stimulated to invest in the weak-currency area. Thus FDI reflects the fact that the firm in the source-country capitalises the same income stream of expected earnings (that of the host country firm) at a higher rate than does the host country firm. When a change in exchange rate is expected, capitalisation rates on equities, as well as on debt issues, are lower (that is, interest and profit rates are higher) in the weak-currency area. If the capital market was perfect there would be no stimulus for FDI to occur, because the exchange risk would offset the lower capitalisation rate applied to the income stream of the weak-currency firm. However, Aliber's argument is based on the assertion that the market for equities is biased, in that it does not attach a currency premium to the foreign income of the source-country firm. The latter may thus issue equities in its market (at a higher capitalisation rate) and buy the host-

country firm, whose income stream is capitalised by the market at a lower rate owing to exchange risk.

Although, it is generally accepted that the Aliber theory predicted well the relatively large FDI by US-based MNEs after the second World War-in particular the American take-over of Europe in the 1950s and 1960s, and the Japanese take-over of south-east Asia in the late 1960s and early 1970s. It has been argued by Ragazzi(1973)[19] that the continued US foreign investment into Europe even when most European currencies were considered 'stronger' than the US dollar is contradictory to Aliber's assertion. Moreover, Dunning (1973), Buckley and Casson (1976), and Ragazzi (1973) have directed various criticisms to Aliber's general theory of FDI. In summary the objections are : (i) It is not clear why the existence of a currency premium should cause the interest and profit differentials to exceed the expected change in the exchange rate[20]. (ii) There is no convincing reason why the market should capitalise the additional income to the source-country firm deriving from the acquisition of the host country firm, without discounting it for the exchange risk, that is why the investors should take no account of the exchange risks involved in the repatriation of profits to the parent firm. (iii) While Aliber's theory may explain to some extent, both the existence and the direction of FDI between currency areas, it is unable to explain anything about capital flows within currency areas: the investment of US firms within the dollar area, for example. Neither can it account for cross-investment between currency areas: the fact that US firms invest in Europe at the same time as European firms invest in the US. Nor does it explain why firms incur substantial costs in setting up factories abroad when they can profit from investor myopia simply by taking over going concerns. (iv) It does not seem to be particularly relevant to direct

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[19]: See Ragazi (1973), p. 493.

[20]: This is possible only if one assumes that curency markets are inefficient (people have imperfect knowledge).

investment in less developed countries with highly imperfect or non-existent capital markets and with heavily regulated foreign exchanges.

2.5.1.7: Conclusions on Market Imperfection Approaches

It has been widely accepted that Hyner's seminal doctoral dissertation constitutes the basis of theories of FDI and MNEs. The following main points that emerge from Hymer's theory and run through the works of subsequent writers can be put as:

(1) MNEs possess some advantages over non-multinational and domestic firms: they are broadly defined as superior knowledge and economies of scale. Superior knowledge consists of all intangible skills possessed by the firm that give it a competitive advantage wherever it engages in value-added creating activities. Technological, managerial, and organisational skills, and marketing skills are the major elements of superior knowledge advantages of the firm. The investing firm possessing these advantages is able to create differentiated products with physical (deriving from R&D) and psychological (deriving from marketing skills) differences that distinguish them from competitive products. In this way, the firm is in a position to control over product prices and sales that enables it to earn an economic rent on its intangible assets.

There are two type of economies of scales from which a foreign firm may derive its competitive advantage over purely domestic firms: the first one is associated with the exploitation of knowledge assets specific to the firm so that successive foreign investment are less costly than the initial one; the second is associated with physical production-scale economies that cannot be matched by local firms.

(2) There are various market imperfections: according to Hymer, in an oligopolistic market structure, imperfections arise from entry barriers that keep new firms out of industry. The most common entry barriers are internal economies

of scale that require large, lumpy investment of capital to be matched by new comers; the control over scarce or low-cost raw material supplies through vertical integration; differentiated products; and knowledge assets, such as patents, trademarks, and brand names. In Hymer analysis these imperfections are considered as the environment in which big firms operate but also at the same time, they are the creation of firms' behaviours.

(3) Removal of competition and control: the desire to remove of competition is a prominent determinant factors of FDI and control in Hymer's theory. The firms attempt to achieve this by adapting a strategy approach rather than (or at the same time) an efficiency approach in terms of their objectives. This is central to the analyses of Hymer, Kindleberger, Cowling and Sugden and Vernon's later writings. According to these theorists, FDI is determined by the firm's aim to enhance its position in the oligopolistic market structure.

The initial market imperfection theory as developed by Hymer and Kindleberger focuses on the issue of why it is the MNE that undertake investment abroad rather than the local national firm. In this way, they overlook the issue of globalism and advantages deriving from multinationality per se.

Another major criticism of market imperfection approach has come from internalisation theorists that it does not take full account of transactional advantages from internalisation of markets by MNEs to explain horizontal FDI.

2.5.2: Transaction Cost (Internalisation) and FDI

The internalisation theory of FDI derives from R. H. Coase's seminal paper published in 1937. Coase (1937) argued that the neo-classical economic theory was wrong in assuming that in market economies, all resources are allocated via price mechanism. According to Coase this was not altogether realistic. He stated: 'Outside the firm, price movements direct production, which is co-ordinated through a series of exchange transaction on the market. Within a firm, these

market transactions are eliminated and in place of the complicated market structure with exchange transactions is substituted the entrepreneur-co-ordinator, who directs production'(p.388). The central theme of Coase's analysis is that the firm exists[21] in order to reduce the costs associated with the operation of price mechanism. The transaction costs of using the price mechanism (the market) can briefly be stated as: 'the cost of discovering what the relevant prices are... The cost of negotiating and concluding a separate contract for each exchange transaction which take place on a market must also be taken into account'(pp.390-91). Moreover, the risk embodied in accepting such contracts and the tax payment involved with market transactions should also be taken into account. From these various costs it follows that the market will be internalised where the transaction costs of an administered exchange are lower than those of market exchange. Thus the firm replaces the market as allocator of resources.

Williomson (1975)[22]reintroduced Coase's insight with further elaboration. According to Williamson, there are three main transaction costs: (i) the cost of informing traders (information costs); (ii) the costs of reducing bargaining as to terms of trade(bargaining costs)and (iii) the costs of enforcing the terms of trade(enforcement costs). Three major factors are thought to influence market transaction costs: The 'First is bounded rationality. This occurs since individuals or management teams are unable to absorb all available information, so some constraints, or boundary conditions need to be imposed in order to facilitate decision making...The Second is opportunism. This is the incentive for individuals to act out of self-interest and the opportunities to cheat[23]'. The third factor is asset-specificity which is defined by Teece (1983) as:

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[21]: There are others, notably Knight (1948), Alchian and Domsetz (1972) and Dobb (1963), who have suggested different reasons for existence of the firms in a capitalist economy.

[22]: Cited in Rugman (1986).

[23]: Rugman (1986), p.110.

A specific asset is one for which it is costly to switch to an alternative use; more precisely, it is an asset which earns a substantial quasi-rent in its present use, either because it has no alternative use or because it is costly to switch it to another use. A specific asset is exemplified by purpose-designed piece of hardware which is difficult to re-jig or adapt to other purposes'(p.60).

As a theory of FDI the internalisation theory has been developed independently and simultaneously by McManus (1972) and Buckley and Casson (1976). Hennart (1991), Teece (1981,1982), and Rugman (1981,1986) are also major contributors to this theory.

The internalisation theory as developed by Buckley and Casson (1976) differs from the previous approach 'in that it emphasises very general forms of imperfect competition stemming from the costs of organising markets, and it concentrates on imperfections in intermediate product markets rather than in final-product markets'(pp.32-3). The internalisation theory is based on three following postulates:

(1) Firms maximise profit in a world of imperfect markets. (2) When markets in intermediate products are imperfect, there is an incentive to bypass them by creating internal markets. This involves bringing under common ownership and control activities which were linked by the market. (3) Internalisation of market across national boundaries generates MNEs. (p.33)

Four main groups of factors relevant to the internalisation decision are the following[24]: (1) Industry-specific factors related to the nature of the product and the structure of the external market. They lead to internalisation of markets for intermediate products and hence to vertical integration. (2) Region-specific factors related to geographical and social characteristics of the regions. (3) Nation-specific factors (4) Firm-specific factors, which reflect the firm's ability to organise and manage efficiently internal markets. The main emphasis is put on the industry-specific factors, within which the strongest case for internalisation concerns the markets for various types of knowledge.

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[24]: Ibid., pp. 33-4.

According to Buckley and Casson, before the Second World War the major factor that contributed to the emergence of the MNE were the growth in demand for primary products, and the difficulties of organising efficient external markets for them. Since the post-war, 'the increased demand for knowledge-based products and the increasing efficiency and scale-economies of knowledge production together with the difficulties of organising a market in knowledge, have constituted the major incentive to the growth of MNEs. In both periods a secondary influence has been the steady reduction in communication costs, and the increasing scope for tax reduction through the transfer pricing'(p.36).

The benefits of internalisation stem from the avoidance of imperfection in these intermediate product markets. There are on the other hand costs to internalisation and therefore for internalisation to be worthwhile the benefits generated must be greater than the costs incurred.

At least five types of market imperfections are considered to generate significant benefits to internalisation. (1) The interdependent activities linked by the market may involve significant time-lags. When future markets are lacking to co-ordinate such activities, there is a strong incentive for firms to internalise the markets for the interdependent activities. (2) In the intermediate product market, efficient exploitation of market power may require discriminatory pricing of a kind which is not feasible in an external market. (3) It is desirable to reach an agreement on a long-term contract binding two parties, or to merge, or for one to firm take over the other where a bilateral concentration of market power creates an indeterminate or unstable bargaining situation. (4) It is desirable to replace the market when there is imperfection resulting from inequality between buyer and seller with respect to knowledge of the nature or value of the product. (5) This type of imperfection arises from government interventions in international markets, e.g. advalorem tariffs, capital movement restrictions, different fiscal policies between nations involving taxation of income and profits. Thus the firm

benefits from minimising the impact of government interventions through transfer pricing.

As stated above, the incentive to internalise is particularly strong in the case of markets for knowledge for several reasons. Firstly, the production of knowledge requires long-term appraisal and short-term synchronisation of R and D that at any stage before the project is completed it may be difficult to arrange the value of the knowledge obtained thus far if the producer were considering to sell it. Second, at least for a limited period of time knowledge provides a monopoly advantage which is best exploited through discriminatory pricing by the firm itself, rather than by alternative means such as licensing. Third, the difficulty associated with valuation of knowledge makes it a useful area for transfer pricing. Finally, when there is buyer uncertainty there appears to be a strong incentive for the seller to assume the buyer's risk by internalising the knowledge and integrating forward into the buyer's industry. Thus, both the market for the production of knowledge and that for the products embodying such knowledge must be internalised.

Against the benefits of internalisation there are various costs of replacing the markets. These are: (i) higher resource costs which arise from the splitting up of an external market into a number of separate internal markets; (ii) of the greater importance is the additional communication costs due to internalisation. This cost is higher, the greater the geographical and social (dissimilarities in language and the social and business environment) distance between the regions linked by the markets; (iii) political cost stemming from political discrimination towards foreign-owned firms which will be higher in the case of unstable political relations between the nations concerned; (iv) the administrative cost of an internal market, which will depend on factors such as management expertise.

The link from internalisation to a theory of MNE is explained thus: 'There is a special reason for believing that internalisation of the knowledge market will generate a high degree of multinationality among firms. Because knowledge is a

public good which is easily transmitted across national boundaries, its exploitation is logically an international operation'[25]

In summary: according to the internalisation theory of MNE, the imperfect markets generate incentives to internalise. The market for knowledge is the most imperfect, so there are great benefits in internalising it. Knowledge is a public good within the firm that can be transmitted to various branches of the firm at little extra cost. Knowledge is also easily transferable across national boundaries, and therefore transmission of knowledge will tend to generate MNEs. Another conclusion of the internalisation theory is that, it is not the possession of a specific asset per se that leads to FDI, but rather that there is a net benefit to internalising an intermediate product market linking activities located in different countries. Without such benefits to be derived from internalisation a firm may exploit its specific asset by alternative means such as export and, or licensing.

The large FDI between developed countries after the Second-World War is explained in relation to the market for knowledge and internalisation. Firms would tend to invest in areas where they can exploit their knowledge by adapting it to the markets where there are the necessary labour skills for the processing of that knowledge and where there are the required sophisticated high income consumer markets for products.

2.5.2.1: Conclusion

Despite claims made by some of internalisation theorists such as Rugman (1981, 1986) that internalisation alone constitutes a general theory of MNEs, the others most notably Buckley and Casson (1976), Casson (1984,1986), Kay (1983,1991) Caves (1983) have been rather modest in attaching such generality to this theory. Casson (1986), for example suggests that 'ownership advantage is concerned with sustained profitability and growth of the firm once managerial

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[25]: Ibid., p. 45.

choices have been made, while internalisation theory represents an extension of theory of choice to encompass the choice, within each market, of appropriate contractual arrangement'(p.46). This can range from joint ventures over which the MNE exercise little direct control, or a largely decentralised MNE in which external markets have been replaced by internal markets regulated by transfer prices, to internationally integrated multinationals with centralised control. Cantwell (1991) suggests that, 'where market exchange is characterised by monopolistic or monopsonistic elements, the MNE may exercise control over its contractual partner without resort to 'internalisation"(p.24). This is one of the point further elaborated by Cowling and Sugden (1987) who define the boundaries of the firm not in terms of ownership but in terms of control over production, either directly or through the market, for instance through subcontracting. Defined in this way, control may be exerted by a firm over production which it has subcontracted out but for which it is the monopsonistic buyer. This will involve a market exchange, but production is still co-ordinated from a strategic-decision making centre.

It has been suggested that the internalisation approach suffers from a number of problems. Casson (1982) states that 'Internalisation is in fact a general theory of why firms exist, and without additional assumptions it is almost tautological'(p.24). Buckley (1983) phrases similarly that 'At its most general, the concept of internalisation is tautological; firms internalise imperfect markets until the cost of further internalisation outweighs the benefits'(p.42). Teece(1983) believes that the tautological nature of transaction costs or 'internalisation' reasoning can be avoided by distinguishing between those transactions that can be dealt with at lowest cost by the market and those that can be dealt with by MNE.

Ietto-Gillies (1992) points to some pitfalls in internalisation theory;

the main problem with internalisation approach is that, if the theory explains anything at all, it explains the growth of the firm in general, not why firms decide

to take the multinational route in the course of their growth. Firms could, after all, internalise and grow at home and source foreign markets by exports: why do they choose to internalise by spreading activities in many countries? The purely multinational elements in this internalisation approach is rather weak(transfer pricing advantages, and government regulations of transactions across frontiers)(p. 118)

Another serious drawback in internalisation approach is that the theory overlooks the effects that the firm's expansion has on labour[26].

It has been suggested by Casson (1981, 1986) and Buckley (1988) that the internalisation theory can not be tested at its most general theoretical level but that it requires specific assumptions about transaction costs for particular products and for trade between particular locations with respect to the costs of alternative institutional arrangements. The variables considered to be important are the large volume of trade associated with the high frequency of transactions between the parties, and the complexity of technology exchanged.

Unlike the market imperfection approach, the transaction cost approach does not consider both final product and factor markets to be of main interest. It stresses on the achievement of greater benefits when a vertically integrated MNE internalises a market for an intermediate product, as well as, when a horizontal MNE internalises markets for know-how and non-tradable assets. Thus the benefits attained through the exclusion of rivals in the final product market is not of importance. Therefore, MNEs are seen as an institutional device for economising on market transaction costs across national boundaries. This implies that the multinationals are more efficient organisms and superior to the market in their resource allocations. However, Sugden (1991) argues that 'more specifically, mention of benefits suggests the need to consider who benefits. Exploring this reveals real problems with internalisation. Its concern is efficiency but an understanding of this concept merely gives one approach to whose benefits matter, and moreover an approach which is seriously lacking'(p.169).

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[26]:See Cowling and Sugden (1987), and Sugden (1991), for a serious treatment of capital and labour relations in the context of MNEs.

But even the advocates of this approach have also recognised that welfare losses may result from the activity of 'a MNE which maximises monopoly profits by restricting the output of high-technology goods, or uses vertical integration as a barrier to entry, or...the MNE may render collusive arrangements more readily enforceable, and so provide a more powerful mechanism for exploiting international monopoly power than an international cartel(Casson, 1986, pp.47-48).

2.5.3: The Eclectic Paradigm and FDI

The eclectic paradigm associated with Dunning (1988), is an attempt to synthesise the essential features of competing theories of the firm and other approaches (location theory, theories of trade) to international production. It is acknowledged by Dunning (1988, 1991) that it is not itself another theory of multinational firms, but more a framework for analysing the determinants of international production. It has, therefore, as Cantwell (1991) suggests, to some extent, provided a framework for a comparison between theories by establishing the common ground or the points of contact between them, and clarifying the relationship between different levels of analysis and different questions which have been the main concern of theorists.

According to the eclectic paradigm, the extent to which MNEs engage in foreign production will depend on their comparative ownership advantages vis-a'-vis host countries' firms, and the locational endowments of home and foreign countries. Dunning distinguishes mainly between three types of ownership advantages: (i) those arising from access to raw materials or markets, scale economies and exclusive possession of intangible assets, such as patents, trademarks, management skills. (ii) those arising from the superiority of common governance of complementary assets located in different countries, as compared with other organisational mechanisms, e.g. the market. This latter type of

advantages which Dunning calls "transaction" ownership advantages is thought to result from transactional market failure, mainly for the reasons explained in the previous section (iii) those arising from the multinationality of the enterprise, e.g. a firm operating in many countries is in a better position than a purely national firm to take advantage of different factor endowments and market situations.

In Dunning's paradigm the incentive to internalise derives from the existence of market imperfections, which may be structural, e.g. barriers to competition, or it may be cognitive, e.g. imperfect knowledge on the part of seller or buyer about product or process.

The argument in the eclectic paradigm is that it is the combination of the assets which the firm possesses prior to the act of FDI, and those which it may acquire as a result of FDI, together with the entrepreneurship and judgmental capabilities of the main decision-takers that are necessary to explain, at least the initial act of international production, (Dunning 1988, p.5). But the ability to benefit from the internalisation according to Dunning, is related to the assets that the firm possesses prior to it (Dunning, 1991, p.123). It should not be concluded from the above that the priority has been given to ownership advantages over advantages of internalisation. To be more precise, Dunning (1988) argues that 'without an incentive to internalise the markets there would be much less reason to engage in vertical or horizontal integration, and transactions would take place between independent firms'(p.33). It is due to this kind of priority, which Dunning gives to internalisation over the theories of structural market imperfection, that leads some writers of literature surveys to treat the eclectic paradigm as synonymous with internalisation theory. However, as Cantwell (1991) suggests, it is not appropriate to do this since the eclectic paradigm as a organising framework does not depend a priory on a particular theory of the firm, but is capable of providing expression either to the internalisation approach, in which the firm grows by displacing the markets whose operation is costly and imperfect, or the structural-market-

imperfection approach, in which it is the growth of the firm itself that causes market imperfections and failure.

Dunning (1988) summarises the eclectic paradigm as follows; a firm will choose to produce abroad if and when three conditions are satisfied: (i) the firm possesses net ownership-specific advantages relative to its competitors in serving particular markets; (ii) it is more beneficial to the firm possessing these advantages to use them by internalising product markets for these advantages across national boundaries; (iii) it is in the global interest of the enterprise to utilise these advantages with at least some factor inputs (including natural resources) from outside its home country; otherwise foreign markets would be served entirely by exports and domestic markets by domestic production. The following table taken from Dunning (1988) gives perhaps the simplest and the shortest possible presentation of the eclectic paradigm.

Figure 2.1 Alternative routes of Servicing Markets.

Route of servicing market	Ownership	Advantages Internalisation	Foreign Location
FDI	Yes	Yes	Yes
Trade in goods and services	Yes	Yes	No
Contractual resource transfers	Yes	No	No

Source: Dunning (1988), p. 28.

It is shown in the table that if a firm possesses only ownership-specific advantages it will consider three alternative ways as equally viable. But if the firm can internalise its specific advantages it will prefer FDI and exporting to licensing. Finally, if the firm can beneficially internalise its ownership specific advantages

across national boundaries because of locational advantages of foreign location, then it will probably prefer FDI to both exporting and licensing.

2.5.3.1: Conclusion

In Dunning's paradigm, the structural-market-imperfections model receives a greater role in determination of international production than the internalisation approach in which market imperfections in the final markets are of secondary importance. By combining the elements related to firms, market structures and macro economy, he tries to explain both foreign production and foreign trade within the same analytical framework. There is a dynamic analysis of interacting advantages. Locational advantages of a country may create incentives for a foreign firm to internalise. At the same time, internalisation generates further ownership-advantages. However, as Ietto-Gillies (1992) suggests, Dunning in his dynamic analysis, 'seems to miss the possible effects of ownership-advantages, particularly size and monopoly power, on the macroeconomy and thus locational advantages' (p.123).

The main problem with this approach is its eclectic nature and the extensive number of variables that emerge from the three sets of advantages combined in eclectic paradigm. This may greatly impair its explanatory and predictive power.

2.5.4: Some Concluding Remarks on the Differences Between the Theories of Foreign Direct Investment[27]

What appears from the above discussion is that the role of ownership advantages in the existence and growth of MNEs seems to have been occupying the centre of the disagreement between two supposedly alternative approaches. Internalisation theorists have focused mainly on the costs of market exchange in intermediate product markets and, strictly speaking, have considered firms as more

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[27]: This section draws heavily on Cantwell (1991), pp.44-52.

efficient organisers of non-market transactions. The exclusion of inter-firm competition in the final product market and the main emphasis put on the intermediate markets' transaction costs have led them to assert that, apart from the benefits obtained through market replacement, there need not be ownership advantages for firms to engage in foreign production. What is really implied here is that MNEs, by economising on the costs of market exchange, increase the overall efficiency of resource allocation throughout the world. By contrast, the market-imperfection school have taken the structure of the final product market as their prime concern, and possession of ownership advantages as necessary before the firm ventures outside its national territory. Here the ownership advantages arise mainly from the imperfection in the final product market that is associated with the oligopolistic market structure, and need not always be associated with greater efficiency of MNE as oligopoly may lead to collusion among rivals dominating the industry concerned.

Cantwell (1991) argues that, 'ownership advantages relate to production costs while internalisation relates to transaction costs, though there is a interaction between the two'(p.46). The firm's replacement of intermediate product markets may enhance its ownership advantages but does not substitute for them. The multinationals extend their productive activities by setting up independent establishments and by further extension of their own ventures, together with take-overs or mergers with firms whose ownership advantages are complementary. Once established MNEs may gain additional advantages from the international co-ordination of activity, in part through the enhancement of their technological strengths by way of more geographically and industrially appropriate research programmes. The international co-ordination of research and production is therefore supportive of technological advantages, not a substitute for them, or a sufficient condition for their generation.

The adaptation of internalisation to international firms is an attempt to explain why MNE in general replaces international trade in intermediate products, which were previously taking place between two independent parties. As a result, the internalisation theorists feel no need for referring to ownership advantages. It has been argued that, while internalisation may be a sufficient explanation of the existence of firms taken as whole without reference to final product markets, it cannot sufficiently explain the growth of a particular firm or a particular group of firms vis-a'-vis other firms. To explain why, for example, Japanese MNEs have grown at the expense of UK firms, supposing stronger technological advantages is necessary.

The other debate arising from ownership advantages concerns the distinction between monopolistic and non-monopolistic advantages. It has been argued that the concept of advantages does not necessarily mean monopolistic (in the sense that each participating firm has some monopolistic advantage) as is often supposed in the literature. Casson (1986), for example, points to the relative nature of advantage, and argues that a foreign firm enjoying a non-monopolistic advantage may enjoy an advantage only over indigenous firms, but not over other foreign firms operating in the industry. But that is not to deny the relative strength of the ownership advantages of each firm based on its own previous technological experience which enable the firm to sustain its rate of growth against rivals and its behaviour towards collusive agreements with other members of international oligopoly. So what is usually meant by ownership advantages need not be monopolistic but rather oligopolistic advantages. In such case the firms may obtain monopoly power by colluding with each other ,but it will be exercised jointly rather than individually (Cantwell, 1991, p.57).

The ownership advantages are sometimes interpreted as being anti-competitive in that they act as barriers to entry against other firms, and are thus referred to as monopolistic, while in some other cases, they are interpreted as competitive in that

they sustain a process of competition between rivals. However, this distinction should not be taken as crucial since competition and monopoly may well exist together in an oligopolistic industry.

Finally, there is a major difference between the internalisation and market-imperfection approach in their treatment of market imperfections. For Hymer, market imperfections are not the only starting point and part of the environment in which MNEs operate, but also a creation of MNEs. MNEs strive to increase their market power and their level of control, and in trying to accomplish this aim they generate imperfections which then become endogenous to the real world and to the theory. In contrast, the imperfections are treated exogenously[28] given by the basic internalisation theory[29].

2.5.5: FDI Theories and the Determinants of FDI in the Turkish Manufacturing Industry: Hypotheses

Having considered the literature review of the theories of FDI, it is important at this stage to draw up hypotheses that will form the basis of empirical investigation of the determinants of FDI in the Turkish manufacturing industry[30]. Three sets of hypotheses are identified in order to cover three main bodies of the theories of FDI, namely market imperfection, internalisation and the host country characreristics.

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[28]: Ietto-Gillies (1992) argues that 'However, at the level of very large firms it is not clear to what extent marker imperfections lead to growth of firms or growth of firms leads to market imperfection: market imperfection cannot be taken as an exogenous variable when we are dealing with big corporations'(p.118).

[29]: Buckley (1983) accepts that 'it is a valid criticism of internalisation rubric that market imperfections are taken as exogenous to the (internalising) firm'(p.45).

[30]: See Chapters 4 and 5.

The advantages possessed by MNEs consist mostly in the use of superior technologies or product differentiation instruments relative to those used by domestic firms in the host countries. This suggests that these advantages are not given in an absolute sense, but should be expressed relative to the operations of domestic firms. Therefore in explaining the market share held by foreign controlled firms in the Turkish manufacturing industry, we have constructed relative variables as much as possible to account for this.

The extent to which an advantage can be used with more intensity in a foreign market is closely related to its transferability. Because not all advantages are transferable, and therefore the more pronounced advantages exploited by foreign firms in Turkish manufacturing industries will be those that are transferred with greater ease. A brief examination of the transferability[31] of oligopolistic advantages may provide us with a priory consideration as to their likely effect on foreign shares of Turkish markets.

Technology: The most convincing explanation comes from the product cycle literature. According to this, in the early stages of innovation, there are both county-specific(large market, technological infrastructure) and firm-specific(co-ordination required between scientific, engineering, production and marketing units) for keeping production at home. In later stages as techniques, skills and products become standardised, foreign demand grows and competition arises, it becomes an advantage which is easy and profitable to transfer abroad.

While it is highly reasonable to test the role of technology in foreign production among industrialised countries in this way, it is very unlikely that this same measure will yield meaningful results when analysing foreign production in developing countries. What theory suggests as far as developing countries are concerned is not the transfer of R&D activities but rather of standardised

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[31]: The discussion of transferability of advantages heavily draws on Lall (1980), pp. 108-110.

techniques of production innovated much earlier. In other words, the technological superiority of foreign firms is not expected to play a major role in determining the foreign share of Turkish manufacturing industry except that foreign subsidiaries have major access to parent technological backing in case it is needed.

Advertising intensity: The ability to differentiate products seems to be a highly transferable advantage. It does not require the close co-ordination of scientific, engineering, production and management functions that the introduction of new technology does. On the contrary, its successful implementation necessitates that differentiation activity (related packaging, colouring, appearance, performance, advertising) be carried out near the final markets. Given that the selling is the prime objective of any kind of production, we expect that high product differentiation will have a positive effect on foreign share. However, for reasons which will be stated later it may not be as important as in developed countries.

High Capital intensity: High capital intensity is usually considered as a concentration promoting factor because it requires large minimum investment, and, given imperfection in the capital markets, foreign firms have a comparative advantage vis-a-vis local firms in raising sums needed to establish production facilities. Since this is an advantage that multinationals can exercise everywhere, and since in developing countries firms are mostly handicapped by the lack of capital we expect it to be an important factor on the extent of foreign shares.

Scale Economies: The existence of scale economies is regarded as one of the major factors promoting industrial concentration and foreign production. Initially new facilities are set up in home countries' market and benefits of economies of scale are reaped there. One could think of this as the initial-non transferability, which ends when the domestic facilities reach a certain size and foreign market grow large enough to permit the transfer of capital for production abroad. A relation between size and foreign investment should be positive: the entry barriers

due to the size of capital costs for entering or buying into a Turkish industry can be overcome with relatively greater ease by large foreign firms with access to both internally and externally generated funds. We expect to find, therefore, that the foreign firms size should influence the extent of foreign investment in Turkish industry.

Skills: The advantages conferred by skills can be divided in three groups. 1- Non-transferable skills, production labour skills are for institutional and cultural reasons immobile internationally. 2- Partially non-transferable skills are those which are introduced by particular firms or industries. And that they are tied to the developed countries because skills related to new products, processes, organisational techniques, and management practises necessarily take time to become standardised and get diffused from the head office to subsidiaries. 3- Fully transferable skills are standard managerial and technical skills that can easily be deployed abroad by foreign firms by transferring high level manpower or by setting up training programs and integrated managerial structures. Accordingly we expect a higher foreign share in industries where the problems of management and co-ordination require a high order of skill.

2.5.5.1: Hypotheses Related to Internalisation

Although the decision to internalise depends on the several interacting factors, the strongest case for internalisation concerns the market for various types of knowledge, mainly because of the risk and the difficulty of evaluation involved in determining its price through market exchange. Therefore, there is strong incentive to by-pass the market mechanism and bring these activities under common ownership and control.

Can testable hypotheses be drawn from the internalisation approach? The approach suggests that the propensity to internalise is greater the higher the

volume of and frequency of trade between two plants and the more complex and newer the technology the greater the propensity to internalise.

There are, on the other hand, a number of imperfections caused by government intervention. Government intervention in the form of tariffs, taxation dividend remittance and exchange rate policies provide an incentive for internalisation. Since in this way the firm has the opportunity, thorough transfer pricing, to minimise tax payments, etc., (Hood and Young, 1987) we can say that the higher the rate of tariff, the greater the propensity to internalise the market for the product traded.

For any proper test of internalisation the costs of alternative modes of transaction has to be accounted for. What we can do here is deduct some inference as above from the prediction of the theory. We have to make reference to factors (market imperfections; natural and government induced) which may augment the transaction costs associated with market transactions. Accordingly the following hypotheses can be set.

1-The foreign share of the Turkish market should be higher in industries requiring advanced technology,(This is drawn from higher transaction costs associated with complex technology).

2-The foreign share should be higher in industries protected by a relatively higher rate of tariff.

The theory will predict a positive and significant relation between foreign share and both of these variables. However the important variable is technology.

2.5.5.2: Hypotheses Related to Market Imperfection

The oligopolistic advantages that promote foreign production are taken to arise from the barriers to entry of new competition that promote concentrated market structures inside the countries. The factors that provide the foreign investor with a comparative advantage are: superior technology, product differentiation, large

minimum capital requirements, scale economies and superior skill. It is highly likely that at the firm level large size itself cumulatively creates other advantages apart from those conferred by industrial characteristics. Large firm size is more likely to provide under-utilised managerial resources, privileged access to capital markets, special relations with governments, spare internal finance, etc. which may enable them to expand in the same sector or to enter unrelated sectors by take-over. The large firm size is also crucial, among other things, in the determination of the choices facing a firm possessing those advantages. To the extent that those advantages are transferable, the firms size is an important factor when the firm has to make choices between alternative ways of servicing foreign markets. Foreign direct investment requires higher costs of search and investigation than do exporting or licensing. Second, the conjunction of entry barriers and large firm size tells us that multinational firms are apt to operate primarily in an oligopolistic market structure. This means that while multinational firms have an advantage in entering a market guarded with entry barriers, the indigenous firms face some entry barriers. Therefore the main hypothesis of the market imperfection approach is that there is a positive relation between multinational prevalence (measured by their share of local markets) and the height of entry barriers, in an industry.

2.5.5.3: Hypotheses Related to Country Specific Consideration

The internalisation approach provides sufficient explanations for the choice of foreign direct investment over licensing especially in high-technology product markets. On the other hand, conditions in the host country itself will effect the choice between direct investment and licensing. For instance, licensing advanced technology may not be an option in a developing country like Turkey, because the indigenous firms may lack the necessary skills to extract the full benefit from it. The existence of some oligopolistic advantages cannot be sufficient reason for the choice in favour of foreign direct investment over exporting. Since firms

possessing advantages can always produce at home and serve foreign markets via exports. Therefore for foreign direct investment to be a viable option, foreign firms should be able to combine at least some of their advantages with the host country's locational factors. To be more precise, an advantage on the part of foreign firms make sense only when it is used in conjunction with locational factors.

The characteristics of the Turkish market such as market size, market growth, the presence of local competition etc. will have an major effect on foreign direct investment decisions and provides a basis for evaluating which types of advantage may be put to use. Given the firm's advantages, if the market size is big enough, existence of high tariffs may be a sufficient reason for exploiting the possibility of economies of scale in production and marketing. Again, in industries where Turkish indigenous firms are strong, it may be necessary to be close to the market in order to achieve the desired sale. In addition, the government policies, apart from tariffs and other form of protectionism, relating to incentives, acquisition, profit remittances, etc. will have an influence on the foreign firms share of local markets. To capture some of the characteristics of the domestic market and its likely influence on the foreign share of Turkish industry we introduce the following hypotheses:

1- The higher domestic sectoral market growth, the greater the incentive for foreign firms to engage in production, hence we expect a higher foreign share in relatively fast growing sectors.

2- We expect a higher foreign share in industry where local competition is strong

3- The foreign share of the sector is expected to be higher in sectors with higher protection rates.

4- Though not important, a simple logic may suggest that government incentives may provide a further stimulus for foreign direct investment.

CHAPTER THREE

Foreign Investment in Turkey and MNEs' Domination of Turkish Economy

3.1: Introduction

The history of foreign capital inflow into the Ottoman empire goes back to the signing of a trade agreement with Britain in 1838. Despite reluctant attitudes that had emerged because of the devastating impact of capitulations on the domestic economy during this period, foreign capital was sought for the accomplishment of much needed investment after the founding of the new republic. Although the foreign capital inflow into Turkey was adversely influenced by the 1929 World economic crisis, a moderate increase was achieved after the second World war, with the introduction of new legislation on foreign investment.

The Foreign Capital Encouragement Law (nr: 6224), enacted in 1954, was seen as one of the most liberal laws on foreign capital. According to this law: (i) foreign capital would be able to operate in every field available to Turkish private enterprises. (ii) all kind of capitals: capital in-cash and in-kind of foreign origin, for new investment, for investment to be made for renewals and expansions, intellectual property rights, services, and capitalised profits for re-investment purposes could be imported. (iii) foreign capital could enjoy the same benefits as to the rights, immunities and facilities provided for domestic capital invested in the same field. (iv) profits and capital could be transferred abroad at the current official rate of currency of foreign capital origin.

Though implemented with the utmost expectation, the desired amount of capital inflow was not realised. The amount of foreign capital was only $ 228 million at the end of 1979.

In order to attract foreign investment, successive Turkish governments brought in new liberal legislation during the 1980s. Foreign Capital Framework Decree number (8/168) was issued in 1980 with the purpose of inducing foreign

capital towards certain investment fields. Additionally, a new Foreign Capital Framework Decree was issued as a supplement to the decree number 86/10353 of 12.02. 1986. This new decree regulated the principles of foreign capital permits within the scopes of laws numbered 6224 and 1567. No restriction or limit was introduced with this decree with regard to the areas of investment and amounts of foreign capital. However, the council of ministers made a requirement for applications for foreign capital investments and participations exceeding $ 50 million before approval. Furthermore, the transfer of profits, wages, and the whole capital in case of liquidation, was guaranteed.

Consequently, the foreign capital investments in Turkey have increased substantially after 1980, reaching up to $ 5,954 million at the end of 1992.

This chapter consists of two parts. In the first part, we reproduce and update the development of foreign capital in the Turkish economy starting from the late Ottoman Empire up to present time, 1992. The periodisation has been made as to correspond, approximately, to different economic policy implementations.

In the second part a modest attempt has been made to assess the overall effects of foreign direct investment in the Turkish manufacturing industry. By doing this it is intended to give a voice to the statistics produced in the first part, as A. Marshal puts it "Facts by themselves are silent"

3.2: PART ONE: Historical Background

3.2.1: Late Ottoman Empire (1850-1920)

The characteristics of foreign investment in the Ottoman empire between the end of 19 th and beginning of 20 th centuries were in close resemblance to those of investment in the colonial countries. Foreign investment in this period was mainly concentrated in: (a) transport, e.g. railways and sea transportation; (b) infrastructure, e.g. electric and public utility gas; (c) services sector, e.g. bank and insurance activities. There were privileges given to foreign investors in the

extraction of mineral products, but production was not on a considerable scale. During this period, the manufacturing industry appeared less attractive to foreign investors. Avcioglu (1973) estimated that about 4 % of total foreign investment was in the manufacturing industry in 1923. The main factor for the relatively low level of foreign investment in the manufacturing industry, is thought to be because of the trade agreements, or rather concessions, between Ottoman and European countries, especially Great Britain. Alpar (1980), along with some other scholars on the subject cites these agreements as the main reason for such biased sectoral distribution of foreign investment. According to these trade agreements all kinds of commodity exports were to be allowed, with implementation of a tariff regime of 5 % tax on imports and 12 % on export. Moreover, Foreign goods were exempt from any other internal tax or duty when transported from one region to the rest of the empire. Thus the Ottoman empire became a free market for the

Table 3.1 Capital and activities of some of foreign firms, which operated during 1892-1911.

Company name	Activity	Capital
Selanik Bankasi	Banking	250000*
Dersaadet Su Sirketi	Water	20000*
Beyrut Havegazi Osmanli Sirketi	Public utility gas	800*
Selanik Osmanli Tramvay Sirketi	Transport	500*
Doyce(Deuthse) Bank	Banking	15000+
Osmanli Bankasi	Banking	250000#
Tunel Sirketi	Tunel	165#
Kredi Liyone	Credit	250000#
Halic vapurlari Sirketi	Ferry transportation	100#
Eregli Sirketi Osmaniyesi	Mining	27440#
Istanbul Tramvay Sirketi	Transport	27000@

*:(1.000 Frank); +: (1.000 Mark); #: (1.000 T.L); @:(1.000 Swiss F.)

Source: Istanbul Menkul Kiymetler Borsasi, 100.Yildonumu Bulteni, 1960[1].

[1]: Cited in Alpar (1980), p. 160.

export of European goods while the other European countries notably Germany, France and others were pursuing an interventionist trade regime in order to protect their domestic industries from Britain's industrial domination.

It is extremely difficult to give an accurate figure for foreign investments in the Ottoman Empire in these years. According to Brienly (1972), in 1914 the French investments totalled to 3.3 billion franks while Britain's total investment was about 22 million pounds. Table 3.1 may give an idea about some possible features of the investments in the period.

This period is characterised by the politically weak Ottoman Empire in a state of disintegration and the resultant consequences on its economic relations to the stronger states of Europe. Thus, foreign companies found it, mainly, as a lucrative free market for their exports. However, when the export was not possible, they chose those areas where profitability of investment was highest and were concerned with getting their capital back as soon as possible.

3.2.2: Early Years (1920-1950)

Although the new Turkish Republic nationalised the foreign companies operating in activities closely related to public goods, it did not take a stance against foreign investment as such. The foreign investment policy of new regime was to grant even more concessions to foreign investment than other countries, provided it respected the new regime's laws.

Okcun (1971), in his detailed study of joint stock companies established during 1920-1930, shows two general styles of foreign firms' participation in Turkish market: One is by setting up new branches; the other is by participating in the share of Turkish companies. According to this study, foreign firms showed the following characteristics: (1) they were in some cases in direct partnership with government; (2) foreign firms usually had a majority stake in the companies; (3) some foreign capital groups had shares in several companies and/or had

representation on the managerial boards of those companies. This indicates a peculiar type of industrialisation occurring with strong monopolistic characteristics, which was practised by Turkish capitalists who also were , at the same time, in partnership with foreign companies. In this period the number of companies and their capital have increased substantially as compared with the previous period.

Domestic capitalists were eager for the close association with foreign capital, and in many cases, this was further fostered by the concessions and direct participation of the newly created state. It should be noted that this is a pattern of industrialisation quite contrary to the competitive capitalist development experienced in Western Europe in its early development. On the other hand, unlike some views[2] that the new state was against foreign investment in Turkey, the facts seem to have been otherwise. Table 3.2 shows that the paid capital by foreign firms were almost equal to paid capital by domestic firms.

Table 3.2 Foreign and domestic capital in 1929 in Turkey.

Companies		Paid Capital (1.000 T.L.)
Turkish Companies		78.239
Foreign companies		77.913
English	" 50.000	
Swiss	" 22.222	
French	" 5.691	
Grand total		156.152

Source: Bulutoglu (1971), p. 101.

Apart from banking and construction of public buildings, in the 1920s, foreign firms were also operating in manufacturing sectors such as; textiles, food, stone

2: See Okcun (1971), pp. 1-14. for a critical view of them.

and earth-ware industries. Table 3.3 presents the foreign capital inflows and foreign firms transfers during 1926-1933.

Table 3.3 reveals two things: the first is that the total transfer by foreign firms is nearly two times higher than the total investment brought between 1926-1933 and indicates a very high return on capital invested in these years, though a substantial amount of these transfers may have been the compensations resulting from nationalisation of certain foreign companies; the second is that an increase in new investment between 1926-29 follows a sharp decrease afterwards.

Table 3.3 Foreign capital inflows and transfers abroad 1926-1933.

years	Inflows (Million T.L)	Transfers (Million T.L)	Transfer/Inflows %
1926	6.5	12.3	189
1927	5.3	12.3	232
1928	8.0	11.7	146
1929	12.0	9.9	83
1930	1.2	11.8	983
1931	0.8	3.5	437
1932	4.2	4.0	95
1933	1.1	2.4	218
Total	39.1	67.9	174

Source: Columns 1 and 2; Tezel (1982), p. 177.

The 1930-45 period, is rather specific as a result of the World economic crisis and Second World war. Despite the nationalisation of 21 foreign companies mainly active in railways, seaports and public services, there were 32 new ones established during 1934-38. Up to 1954 the total amount of foreign investment permits in Turkey reached a total of $ 2.9 million.

3.2.3: 1950-1980 Period

The period after the 1950s has two major distinctive features as compared with the earlier developments. First, state fostered private sector gained

considerable influence and was to play a major role in the Turkish economy. Second, import-substitution policies would become the main economic development strategy, starting formally with the planning period in 1963 and ending in 1980. Thus, an industrialisation policy based on import substitution, protected by high tariffs was to be carried out by private sectors. However the private sector alone could not bring about the necessary progress due to lack of capital, technology and a low level of savings. To make up for the deficiencies of the Turkish private sector therefore, foreign investment was to be encouraged.

It is not surprising then, the foreign firms established during this period were primarily to serve the domestic market. Behind high tariff walls foreign capital (very often with domestic partnership) set up mainly assembly type factories to produce goods whose import was virtually impossible.

Table 3.4 shows the authorised FDI, realised FDI inflows, transferred FDI earnings from intangible assets and repatriated profits of private foreign investment during 1954-1980. The following can be observed from the table below: (1) there is a great discrepancy between realised and permitted amounts of FDI. The proportions of realised FDI to authorised FDI are: 6.5 % pre-1950, 38.30 % between 1950-1960, 49.0 % in the period of 1961-1967 and 49.6 % during 1968-1972; (2)- there is a high increase of FDI especially after 1954 and a steady increase after a decline in 1960 and 1961. The declines in realised FDI happens to be, to a great extent, associated with the years where the political climate in the country was rather unstable. FDI seems to pick up after each time the military take-over resolves the conflict by suppressing all democratic forces throughout the country. Therefore, it is true to argue that while unstable socio-political situations have been responsible, to some degree, for the lack of FDI in Turkish industry, it is even more true that military intervention once a decade has provided a kind of stability to which foreign firms were attracted; (3) the ratio of transferred profits and earnings from intangible assets to realised FDI shows an

increasing trend over the periods: 36.0 % during 1950-1960, 47.6 between 1961-1967, 68.7 % in the 1968-1972 period and 65.4 % during 1973-1979 period. The overall average is 59.5 %; (4) the high rate of transfers from FDI and the low level of realisation of FDI in Turkey might, partly, be due to the fact that Turkey has been an insecure place to invest in. Therefore once invested, foreign firms seems to have been eager to obtain a higher rate of profit and transfer it as quickly as possible. Higher rates of profit cannot be explained entirely by a relatively high level of technology. It may partly be a reflection of the oligopolistic market structure in which they operate.

Table 3.5 reveals the sectoral breakdown of FDI in Turkish industry. We can summarise the table results as: (1)- in the period between 1950-60, FDI is concentrated mainly in chemical 20.58 %, food 15.2 % ,and metals 8.37 % followed by cement and cement products 8.14 % and textiles 6.16 %. The bulk of FDI is in sectors requiring high minimum levels of capital and relatively high technology sectors. Another characteristic of FDI in this period is that it seems to be directed towards non-durable consumer goods aimed at domestic market; (2)- there is a shift in sectoral orientation of FDI towards sectors producing consumer durable in the second and third periods. FDI favours rubber, electrical machinery and electronics alongside chemicals between 1963-72 period, and there is a high concentration in transportation vehicle industry during the third period. In 1979, 68.5 % of FDI is in transportation vehicle, chemicals, electrical and electronics, metal products and rubber industries.

Is there a relation between sectoral distribution of FDI and import substitution policies? The answer to this question may provide a vital element of the determinants of FDI in Turkish manufacturing industry. Import substitution as measured by the decrease in the amount of import in total supply is achieved by a set of policies prohibiting imports and promoting domestic production. Foreign firms previously serving domestic markets by exports are now encouraged to

serve domestic markets by other means, preferably by domestic production. The fact that those industries where most of the domestic demand were satisfied from imports and domestic production of which entails prohibitive trade measures indicates that Turkey does not have a comparative advantage in them. This may suggest that, foreign firms investing in those industries do not need strong advantages to overcome general disadvantages of operating in the Turkish market, since they face little or no local competition.

As table 3.6 shows the bulk of FDI, around 70 %, was in sectors where substantial import substitution took place during the 1963-1980 period. Here lies the vital link to the causes of FDI in the Turkish manufacturing industry. Investment incentives, higher tariff and an over-valued Turkish currency were major tools of import substitution policy during 1960-1980. The degree of industrial protection and domestic market growth were likely to play a major role in attracting FDI into the domestic economy. The average gross domestic product growth rate was at 6.75 % during 1963-1977 and 1.32 % between 1977-1980. In the absence of international competitive pressure, foreign firms could take advantage of this industrial policy by investing in sectors where high minimum capital is required and where they had a technological advantage over domestic firms without the fear of finding a market for their products.

Table 3.6 represents the import substitution measured as absolute production values in 1968 prices. According to Kokden, and Gokal (1990) the sectors[3] in which Turkey had a comparative advantage were; food and beverages, wood products, petroleum products and non-ferrous metal industry in 1963 and food and beverage, and non-ferrous metal products in 1967. There were nine sectors in which Turkey had a comparative advantage in 1988. They include: manufacture of textiles, leather, food, wood products, glass and pottery china, food products not

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[3]:It is not explained how they calculated the sectoral comparative advantages.

elsewhere classified, processed petroleum products, iron and steel, and fabricated metal products. As will be more apparent below, the bulk of FDI was not in those sectors even after the 1980,s export-oriented economic polices.

Table 3.4 private foreign capital inflows and repatriated profits 1950-1980 in ($1.000).

Years	(1)	(2)	(3)	(4)	(5=3+4)	(6=5/2 %)
Pre-1950	1516	100	na	na	na	na
1950	355	684	na	na	na	na
1951	1758	575	na	na	na	na
1952	794	840	na	na	na	na
1953	1066	724	9	4	13	1.7
1954	10667	2160	177	11	188	8.7
1955	14236	2842	305	35	340	11.9
1956	12339	3848	673	45	718	18.6
1957	1920	1802	1323	150	1473	81.7
1958	2196	3089	2239	257	2496	80.8
1959	8488	3397	949	98	1047	30.8
1960	5497	2759	2756	169	1925	69.7
1950-60	59316	22720	8431	769	8200	36.0
1961	9122	1209	1381	123	1504	124.4
1962	9198	4501	1485	149	1634	36.3
1963	10850	4444	1787	195	1982	44.5
1964	22019	11834	1940	60	2000	16.9
1965	6451	8618	3590	300	3890	45.1
1966	18358	9694	5200	1020	6220	64.1
1967	24525	8969	5900	340	6240	69.5
1961-67	100523	49269	21283	2187	23470	47.6
1968	19217	12020	7760	1530	9290	77.3
1969	38217	11375	6980	1050	8030	70.5
1970	33717	8350	7720	600	8320	99.6
1971	2210	12315	4440	1280	5720	46.4
1972	23580	14032	6670	1870	8540	60.8
1968-72	116941	58092	33570	6330	39900	68.7
1973	1822	67300	8190	1570	9760	14.5
1974	6860	-7700	9160	2280	11440	---
1975	19105	15100	9950	3000	12950	85.7
1976	10325	8900	12210	1790	14000	157.3
1977	na	9200	2550	1720	4270	46.4
1978	na	11700	5720	2780	8500	72.6
1979	na	-6400	2130	1180	3310	---
1973-79	38112	98100	49910	14320	64230	65.4
1950-79	316408	228181	112194	23606	135800	59.5

1: authorised FDI, 2: Realised FDI, 3: Profits, 4: Earnings from intangible asset, na: not available.

Source: Constructed from Erdilek (1982), pp.252-3; Karluk (1983), p.133; SPO, (1987), p.10.

Table 3.5 Sectoral breakdown of FDI between 1950-1979.

Industry	1950-1960 %	1963-72 %	1973-77 %	1979 %
Food, beverage Tobacco	15.12*	7.20	6.22	5.30
Textiles and clothing	6.16	ns	0.90	0.56
Paper	0.22	ns	2.11	1.72
Rubber	1.62	19.80	9.61	7.90
Plastic processing	ns	ns	0.16	0.13
Chemical	20.58	22.80	14.70	16.20
Glass	ns	ns	1.98	1.61
Transportation vehicles	ns	3.50	22.28	24.80
Metal products	8.37	11.50+	4.51	8.38
Machinery	ns	ns	4.59	3.41
Agricultural implements and Machinery	7.00	ns	3.24	2.27
Electrical machinery and electronics	4.42	17.50	12.83	11.22
Cement and Cement products	8.14**	ns	1.59	0.85
Packaging	ns	ns	0.14	ns
Building materials	ns	ns	0.02	0.02
Other	28.37	17.70	0.16	ns
Total manufacturing	100.00	100.00	85.04	84.37
Agriculture Mining & Services			14.96	15.63
Grand total			100.00	100.00

*: Only food; **: Earthware; +: Includes machinery

Sources: Column 1: Selik (1961), pp.31-32; Column 2: Tan(1988), P.90; Column 3: Erdilek (1982), pp.254-6; Column 4: SPO 1980.

Table 3.6 Import substitution in manufacturing industry (1963-1980).

Sectors	in 1968 prices (Million TL)
Iron and steel basic industries	2.254
Fertilisers	2.161
Transportation vehicles	2.101
Food	1.641
Non-electrical machinery	1.603
Petroleum products	1.326
Petro-chemical products	1.238
Rubber	1.169
Textiles	978
Non-ferrous metals	920
Leather and leather products	885
Plastic	581
Electronic	458
Agricultural machinery	445
Electrical machinery	333
Chemical	201
Paper	191
Cement	127
Glass	98
Wood products	57
Manufacture of pottery china and earthware	44
Printing machinery	24
Beverage	6

Source: Kokden and Gokal, (1990), p. 113.

3.2.4: 1980-1992 period

This latest period is characterised by outward-oriented economic policies. The distinguishing features of this policy were: a- to lift all price controls except that of labour; b- to open the domestic market to international competition; c- to promote exports and FDI by various incentive measures; d- to implement a tight monetary policy.

The main objective of industrial policy since 1980 has been to increase the export performance of the Turkish economy. In order to accomplish this, national enterprises have been encouraged with the support of the state. FDI is again

sought firstly, to provide necessary finance for investment in areas where there is a scope for the export of goods and services. Secondly, parallel to the utilisation of foreign capital to finance investments, the need for profiting from foreign capital in following up technological changes through know-how and licence agreements has emerged. Thirdly, foreign firms are expected to achieve better export performances than their local counterparts, because they have marketing channels in place, and know foreign markets better than domestic firms.

Table 3.7 shows the net inflows of FDI and total transfer (repatriated profit transfer from intangible assets) during 1980-1992. Two main features can be detected from FDI in Turkish manufacturing industry in this period. FDI inflows have increased considerably from a cumulative total of 228 million dollars at the and of 1979 to 5.954 million dollars at the end of 1992. The ratio of repatriated profit to realised FDI has fallen from 59.9 % in the previous period to 16.67 % during 1980-1992.

This may partly be attributed to the expected political stability and partly due to the restructuring of the Turkish economy and related competitive pressures. Political stability is an illusion however, when one considers Turkey as a whole, (that is including North-West-Kurdistan, currently under Turkish military occupation). Despite a large scale war[4] costing on average 30-40 lives per day, this increase in FDI inflows reveals another characteristics of foreign investment in Turkey, that it is mainly concentrated in developed areas of Turkey far away form troubled Kurdish region where a few foreign firms engaged in the extraction of minerals and petroleum are still present.

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[4]: The history of Kurdish strugle for an independent country against Turkish, Persian and Arab rulers goes back for centries now. The latest of these started with Kurdistan Workers Party's (1978) demand that Kurds must have equal cultural, social and political rights as Turks. Since officially the Kurds did not exist, such demands were to be suppressed by all means, leading to a full scale guerrilla war commencing in 1984.

During this period, alongside other (fiscal, monetary, employment) policy changes, the most dramatic change in foreign trade policy was related to quotas, tariffs and exchange rates. Import quotas were eliminated between 1981-1984 and tariff rates have been lowered gradually since 1984. According to a study by Togan and Olgun (1989)[5], with subsequent alterations in various taxes on imports the nominal protection rates rose from a weighted average of 64.49 % in 1983 to 69.34 % in 1984 and fell to 59.5 % in 1988 and 48.84 % in 1989. The respective effective protection rates were 48.79, 76.03, 64.98 and 46.39, (percentages).

The elimination of import quotas and the reduction of tariffs after 1983 and a considerable increase in FDI inflows in the Turkish economy seems, at first, contradictory to the expectation that higher tariffs are associated with higher FDI. There are some factors that may explain this apparent contradiction. First, although there is a decrease in the rate of protection, it is still substantially high. Of 49 sectors producing goods related to foreign trade, the number of industries with effective protection rates of 50 % and over were 25 in 1983, 29 in 1984 and 26 in 1988. In terms of nominal protection rates, the number of industries with 50 % and higher protection rates were 32 in 1983, 34 in 1984 and 28 in 1988. Second, revisions of tax on imports had different effects on sectoral protections rates. In many sectors this meant a considerable increase in the rate of protection, while in other sectors it reduced it. The major sectors in which foreign firms are relatively predominant have been those in which the protection rates actually increased[6]. Third, during the 1983-1988 period, export oriented sectors were the highest protected sectors followed by import-competing, and sectors that

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[5]: The discussion of sectoral protection rates here draws heavily on their article.

[6]: There is a decrease(from 65.16 % in 1983 to 45.66 % in 1988)in rate of effective protection in intermediate goods producing sectors taken together.

undertake exports and are subject to competition from imports. The least protected sectors with 55.2 % effective protection rates are those that are not in competition with imports. This would suggest that the increases in export performance of the Turkish economy have been achieved behind highly protected tariff walls.

Table 3.8 summarises the main points put forwards so far. A glance at the table below, would suggest that the argument that high industrial protection rates in Turkish manufacturing sectors may be one of the prime causes of FDI is still valid[7]. Moreover, it seems that the Turkish authorities have made more use of protectionism to encourage foreign firms into export-oriented activities, without drastically cutting the level of protection in import replacing industries.

As represented in Table 3.9 the sectoral composition of FDI does not seem to have changed considerably after 1980 as far as the manufacturing industry is concerned. The sectors that host for the highest foreign shares in 1992 are food-beverage-tobacco, automotive, chemicals and electrical machinery and electronic industries. However, there is a substantial decrease in overall share of manufacturing sector from 84.37 % in 1979 to 54.36 % in 1992. In contrast to a decline in the manufacturing share of FDI, there is a high increase in the service sector share of FDI from under 15 % in 1979 to 41.16 % in 1992. Among the service sector, banking and tourism are the two most attractive areas for foreign firms.

Finally, Table 3.10 shows the source country distribution of FDI in Turkey. Although the number of countries whose firms have engaged in the production of goods and services in the Turkish economy has increased, the dominant investors in the Turkish economy are those of OECD countries' firms. As can be seen from the table, the Japanese firms are still behind the major European and American

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[7]: The formal testing of this hypothesis is applied in chapter five.

firms in their share of Turkish markets. Kuwait's share has decreased dramatically from 8.52 % in 1979 to 0.16 % in 1992.

Table 3.7 Authorised, net FDI inflows and profit transfer abroad 1980-92($ million).

Years	(1)	(2)	(3)	(4)	5= (3-4)	(6)	(6/5)%
1980	97	35	35	35	0	10	---
1981	338	141	141	300	-159	9	---
1982	167	103	103	89	14	15	107
1983	103	87	87	27	60	23	38
1984	271	162	162	29	133	16	12
1985	235	158	158	19	139	52	37
1986	364	170	170	8	162	40	25
1987	655	239	171	0	171	47	27
1988	821	488	406	0	406	42	10
1989	1.512	855	738	0	738	112	15
1990	1.861	1005	789	0	789	102	13
1991	1.967	1041	910	0	910	119	13
1992	1.820	1242	912	0	912	124	14
1980-92	10.210	5.726	4.782	507	4.275	711	17

1: Authorised FDI, 2: Gross FDI(includes reinvested profits as well as the part of unguaranteed commercial debts that were converted into FDI), 3: Realised FDI, 4: Unguaranteed commercial debts, 5: Net inflows, 6: Transferred profits.

Source: SPO various publications.

Table 3.8 Nominal and effective protection rates across main industry groups; percentages.

Industry	1983		1984		1988	
	NPR	EPR	NPR	EPR	NPR	EPR
I- Main Production*	24.99	22.64	33.22	31.03	43.43	43.33
II-Extractive and energy	55.49	49.45	59.40	53.27	37.20	29.40
III-Manufacturing	85.49	80.13	88.29	131.50	68.82	93.24
1.Consumption Goods	127.65	108.52	131.34	105.03	86.16	104.40
2.Intermediate Goods	63.06	65.16	63.42	65.24	46.52	45.66
3.Investment Goods	63.58	66.77	69.55	75.18	96.35	130.23
4.Other Manufacturing	70.62	71.21	126.29	172.77	73.33	75.62

*:Includes Agriculture, Stock-breeding, Fishing and Coal extraction.
NPR: Nominal protection rate, EPR: Effective protection rate.
Source: Togan and Olgun (1989), p.28.

Table 3.9 Sectoral distribution of FDI in 1983, 1987, 1989 and 1992. (%)

Industry	1983	1987	1989	1992
Food, beverages and Tobacco	10.02+	8.50+	7.06	11.75
Textiles & Clothing	7.01	2.60	2.66	2.15
leather & Leather Products	ns	ns	0.16	0.12
wood products	1.33	0.20	0.07	0.73
Paper & publishing	2.36	1.10	1.49	1.42
Industrial chemicals	11.05	11.90	2.92	2.87
Other chemicals	ns	ns	9.90	4.56
Plastics	0.29	0.40	0.47	1.77
Rubber	1.78	0.60	1.58	1.21
fertilisers	0.77	1.00	1.09	0.10
Non-metallic minerals	1.83	0.60	0.24	0.31
Glass	2.59	0.70	0.72	0.54
Cement	0.83	0.20	0.00	1.57
Basic metals	2.93	6.80	4.17	3.77
Non-ferrous metals	0.77	0.50	0.09	1.37
Fabricated metals	2.32	0.70	0.43	0.45
Machinery	2.32	2.20	0.69	0.14
Electrical machinery	6.00*	9.60*	1.94	2.46
Electronic			6.67	4.03
Automotive industry	10.86	8.50	4.98	9.64
Profession goods	na	0.10	0.05	0.33
Other manufacturing	2.75	0.70	1.08	3.04
Manufacturing total	67.91	56.90	51.01	54.36
Agriculture	2.42	5.50	2.18	2.73
Mining	0.70	1.40	1.01	1.75
Services	28.97	36.20	45.80	41.16
Grand total	100.00	100.00	100.00	100.00

+: Tobacco not included; *: includes electronic

Source: SPO various publications.

Table 3.10 Source country distribution of FDI in 1979, 1989 and 1992.

(%)

	1979	1989	1992
US	19.18	8.27	13.93
Switzerland	14.81	12.90	11.36
France	14.44	4.58	14.42
Germany	12.16	10.26	10.12
Italy	10.26	8.84	8.10
Kuwait	8.52	1.27	0.19
Holland	4.35	10.05	11.86
Japan	3.37	4.57	3.93
Denmark	3.15	1.95	0.47
England	2.06	17.46	10.52
Belgium	1.94	1.50	0.49
Canada	1.81	0.47	1.25
Austria	0.89	0.43	0.46
Sweden	0.19	1.18	0.81
S.Arabia	ns	3.59	1.88
Others	2.87	12.68	10.21
Total	100.00	100.00	100.00

Source: SPO various issues.

3.3: PART TWO: Multinational Domination of Turkish Economy

3.3.1: Introduction

Having briefly represented the historical background of FDI in the Turkish economy, it is important to have an overall view of the extent to which the Turkish economy is influenced by the activities of MNEs. There is a widespread view in Turkey that the role played by foreign firms in the national economy is inadequate and that the government should encourage FDI by all possible means available.

In this part we present some indicators suggested by Ietto-Gillies (1992) to show the extent of Turkish market domination of MNEs. In order to make our findings comparable to Ietto-gillies results on various developed market economies, we try to utilise the same source of existing statistics and the relevant time period whenever possible. It should be noted that the data used throughout this section refer to FDI as a proxy for foreign production. In interpreting the results, it is worth remembering that the official data on FDI do not differentiate between the purchase of controlling interests in existing firms and greenfield investment. Furthermore MNEs' effective control over production extends much wider than that is shown by the data on FDI alone and indicators developed from it.

3.3.2: Relative Importance of FDI

Tables 3.11 and 3.12 give international comparisons of FDI and foreign production in relation to various indicators of the size of domestic economies. The ratio of outward and inward direct investment as a percentage of gross domestic fixed capital formation (GDFCF) for Turkey and some major developed countries are presented in Table 3.11. The outward FDI in relation to the size of GDFCF in Turkey is the lowest of all countries shown. Having increased more than double between 1980-87 as compared with the previous period, it shows a slight decline

between 1987-91. Apart from a decreasing ratio for the period of 1970-79, there is an increasing trend in relative inward flows, and the relative level of inward FDI reaches to that of Canada's, while Germany and Japan's relative inward flows stay behind that of Turkey.

Table 3.11 Flow of direct investment from and into Turkish and some developed market economies[1] as a percentage of GDFCF, 1960-1991

	outward				Inward			
Country	1960-9	1970-9	1980-7	1987-91	1960-9	1970-9	1980-7	1987-91
Turkey	0.3	0.2	0.4	0.4	0.5	0.2	1.1	2.8
Canada	1.2	2.3	5.8		4.7	2.4	1.1	
USA	3.4	4.4	2.2		0.4	1.2	3.9	
Japan	0.4	0.9	1.7		0.2	0.2	0.1	
France	1.2	1.4	3.1		1.1	1.8	2.2	
Germany	1.2	2.1	3.2		2.2	1.8	0.6	
UK	4.8	7.7	14.1		3.3	3.9	6.7	

1: The results for developed market economies are from Ietto-Gillies (1992), p.192. Values are averages for the period.

Source: OECD National Accounts (1993), p. 128, for GDFCF; SPO various issues for outward and inward FDI.

Table 3.12 gives the average value of foreign production as a percentage of imports and GDP for selected years (1960-1991) in the Turkish economy. The ratio of foreign production to imports gives and idea of trends and comparisons of the ways in which the Turkish market has been served from international sources. As can be seen both of the measures indicate an increasing trend of more internationalisation of the Turkish economy. The trend has been upward in both measures, and it is markedly so especially after 1980. Moreover, the increase in the ratio of foreign production to GDP is more marked than the increase in the ratio of import to GDP. The major developed economies of developed countries; UK, Netherlands, USA, Canada, FRG, France Italy, Japan, Australia, Belgium and Luxembourg have higher ratios of international production to GDP than Turkey.

However, as shown in table 3.12 and 3.13, Turkey is only slightly behind Australia and Japan.

Table 3.12 Foreign production as percentage of imports and GDP in Turkish economy, 1960-1991.

Period	as percentage of imports	as percentage of GDP
1960-67	9.06	0.88
1968-79	12.82	1.30
1980-91	18.65	4.00

Values are averages for the period.

Sources: OECD National Accounts (1993), pp. 126-8; SPO various issues.

Table 3.13 international production as a percentage of GDP for selected industrialised countries.

	UK	Ne*	US	Ca*	FRG	Fr*	It*	Ja*	Au*	Bel&Lux*
1968-79	27.2	46.8	13.8	11.0	6.4	7.1	3.7	4.0	n.a.	n.a.
1980-8	36.2	58.2	12.5	17.7	9.4	n.a.	5.4	4.6	4.4	9.3

*** Ne: Netherlands; Ca: Canada; Fr: France; It: Italy; Ja: Japan; Au: Australia; Bel&Lux: Belgium and Luxembourg; n.a.: not available.**

Source: Ietto-Gillies (1992), p. 193.

3.3.3: Multinational Domination of Turkish Economy Compared with Some Major Developed Economies

The data presented in tables 3.11 and 3.12 throw some light on the impact of FDI on the Turkish economy. However, the separate treatment of inward and outward activities prevent it from capturing the full extent of the domestic economy's domination by MNEs. To capture the full effect of foreign production in the Turkish economy we use the simple multinational domination ratio (MNDR)

proposed by Ietto-Gillies (1992). MNDR= FDI(I+O) / GDFCF X 100, Where; FDI is foreign direct investment; I+O is inward and outward[8]; GFCFD[9] is gross domestic fixed capital formation.

The major shortcoming of this indicator is that it cannot capture the effects of all aspects of multinational activities on a national economy. Nonetheless, with the available official statistics on FDI, MNDR is useful in incorporating both outward and inward FDI and providing a simple indicator.

Table 3.14 Multinational domination ratio: ratio of FDI(outward and inward) as a percentage of GDFCF, 1960-1991 for Turkey and some developed countries*.

	Turkey	USA	Japan	France	UK
Averages					
1960-69	0.76	3.7	0.6	2.0	8.1
1970-79	0.40	5.4	1.0	3.6	12.1
1980-87	1.53	6.1	1.8	5.3	22.9
1987-91	3.21				

*: Ratios for developed economies are from Ietto-Gillies (1992), p. 196.

Sources: SPO various issues; OECD National Accounts (1993), p. 128.

Table 3.14 contains the calculated MNDR for Turkey and four major developed countries. It is more likely that periodical fluctuations in GDFCF will affect the MNDR calculated on a year-to year basis. Therefore, averages have been calculated so that the comparison can be made on the basis of a longer time period. The ratios display considerable differences among developed countries; the ranking puts the UK in the top position and Japan in the bottom. Turkey's position is nearer to that of Japan.

[8]: There was not published data on outward FDI until 1980, we have used total transfers that were made by foreign firms instead.

[9]: The use of GDFCF as a normaliser is justified on the basis that it is the nearest domestic indicator to FDI. See (Ietto-Gillies, p. 194)

Looking at Turkey's position through time we notice that MNDR has been increasing, and this increase is especially high after the 1980s. This indicates that the Turkish economy is becoming more and more dominated by multinational enterprises' activities. Though the time-period considered is slightly different, the results of tables 3.13 and 3.14 reinforce each other.

The MNDR in table 3.14 are constructed from total FDI and total GDFCF and hence, does not give a detailed picture of manufacturing industry. Needless to say the domination ratios may differ from sector to sector considerably. We have, therefore, tried to calculate the same indicator for various manufacturing industries.

Table 3.15 gives the results of MNDR for 19 manufacturing industries, as well as for total manufacturing. As can be observed the data in table 3.15 are considerably higher than those in table 3.14. This partly reflects the fact that FDI involvement is higher in manufacturing as compared with the rest of the economy.

Table 3.15 Multinational domination ratios, flow data, manufacturing industry, averages 1979-1982, 1983-1986, 1987-1989; percentages.

Sector	1979-82	1983-1986	1987-1989
Food & Beverages	12.04[b]	9.22	20.96
Textiles	4.78	0.75	2.06
Wood Products		7.06	0.40
Paper & Paper Products	16.27	1.27	26.44
Rubber Products	16.94[c]	13.53	20.99
Plastic Products		2.95	7.18
Fertilisers & Pesticides		4.70	8.59
Chemical Products	15.29	6.58	56.98
Glass & Glass Products	5.70[d]	4.36	5.62
Cement		0.16	-0.45
Poetry, China etc.		0.96	1.74
Iron & Steel		3.87	3.74
Non-Ferrous Metals		1.43	0.64
Metal Products	1.35	3.50	2.01
Non-Electrical Machinery	6.78	5.91	1.82
Electrical & Electronic Machinery and Equipment	31.74	12.32	45.44
Automotive Industry	38.40	20.63	12.80
Other Manufacturing Industry		4.14	125.63[a]
Total Manufacturing	**9.88**	**4.64**	**9.89**

[a]: Includes Aircraft; [b]: Includes Tobacco; [d]: Includes Cement, Poetry and China.

Sources: OECD Industrial Structure Statistics (1993), p.134; United Nations Statistical Yearbook (1982), p.584, and (1986), p.566; SPO various issues. K. Ridvan (1983) for outward transfer between 1979-1981.

The MNDR ratios show considerable variation across industry and different dynamics through time. The total manufacturing ratio has initially fallen from 9.88 % in the 1979-82 period to 4.64 % between 1983-1986, and reached 9.89 % between 1987-1989. The highest domination ratios are found in electrical and electronic, chemical, automotive, rubber, paper&paper products, food & tobacco industries. Interestingly, Ietto-Gillies results of nine manufacturing industries in five developed countries show similar rankings in terms of the industries with higher MNDR across countries. Again electrical engineering, mechanical and instrument engineering, chemical and allied products, food-drink-tobacco, and

transport equipment have the higher ratios respective of their order. These results confirm the hypothesis that FDI is a particular phenomenon of certain industries across countries.

The data in table 3.15 refer to flows of FDI and GDFCF. However, the total effect deriving from inward and outward FDI are likely to be related not just year-to-year new activities, but also to the accumulation of linkages and thus to the cumulative FDI over the years. Therefore, MNDR based on the stock of FDI over the years may provide further information not captured by MNDR based on flows of FDI. The higher the level of MNEs' productive capacity, its spread across the world and its level of activity, it is more likely that the movement of components and funds across the globe will be higher. Consequently, there will be wider scope for international trade, intra-firm trade and transfer prices manipulation.

In order to take account of the accumulation, the following MNDR were used.

$MNDR_t = BFDI(I+O)_t / BFK_t \times 100$

Where; $MNDR_t$ is the multinational domination ratio at the end of t; $BFDI(I+O)_t$ is the book value of stock of FDI (inward and outward) at the end of year t; BFK_t is the sum of GDFCF over the previous five years for the year 1982 and the sum of GDFCF over the previous seven years for the year 1989.

Table 3.16 shows the results of the above ratio calculated for the end of years 1982 and 1989. These results seem to be more stable than those in table 3.15, and show a tendency of increase in total manufacturing and especially in certain industries. The most dominated industries turns out, not differently from the results in table 3.15, to be electrical and electronic, printing and publishing, chemical, rubber, food beverage and tobacco, and automotive industries.

Although the total manufacturing domination ratio for the UK at the end of year 1987 is 34 % more than three times higher than that of Turkey at the end of 1989, in those industry's indicated above, the similar ratios are very close. The fact that the UK has one of the highest MNDRs in the developed world means that

certain Turkish manufacturing industries are highly dominated by MNEs' activities when compared with other developed economies.

Table 3.16 Multinational domination ratios, book value and capital stock data, manufacturing industry end of 1982 and 1990.

Industries	1982	1989
Food Beverage & Tobacco	9.37[a]	18.52
Textile Apparel & leather	4.70	0.23
Wood Products	7.60	1.42
Paper & Paper Products	14.60	11.53
Printing and Publishing	n.s	30.72
Rubber Products	18.84	19.99
Plastic Products	5.45	6.31
Fertilisers & Pesticides	1.80	7.91
Chemical Products	9.16	29.75
Glass & Glass Products	2.09	5.53
Cement	2.01	0.04
Poetry, China etc.	17.08	2.39
Iron & Steel	3.13	3.82
Non-Ferrous Metals	1.47	0.87
Metal Products	2.42	2.23
Non-Electrical Machinery	5.72	3.16
Electrical & Electronic Machinery and Equipment	9.78	36.40
Automotive Industry	14.21	16.28
Professional Equipment	n.s	4.33
Other Manufacturing Industry	25.19	22.70
Total Manufacturing	**6.26**	**9.01**

a: Excludes tobacco; ns: not available separately.

Sources: OECD Industrial Structure Statistics (1993), p.134, SPO various issues.

3.4: Conclusions

In this chapter we have concentrated mainly on foreign investment in manufacturing industries. However the bulk of foreign capital inflow went into infrastructure and the services sectors notably banking and insurance activities during the period of transition from the Ottoman Empire to the founding of Turkish republic in 1923 and up to 1950.

Major developments in FDI in the Turkish manufacturing industry occurred only after the 1950s with the introduction of law 6224. This period up to the 1980s were characterised with an import substitution development strategy. Consequently, the FDI in Turkey during this period was mainly to serve the domestic market. Despite the liberal law, and high expectation this period ends with a disappointment of only $ 228 million FDI in Turkey. During the period of 1950-1980, 84 % FDI went in to the manufacturing industry in which automotive, chemical, electronic and electrical machinery and equipment, rubber, metal products and food-drink-tobacco have been the most attractive industries for foreign firms. During this period, 63 % of FDI originated form EEC countries followed by 19 % from the US.

With a switch to export oriented economic policies the 1980s have seen a substantial increase in the amount of FDI in Turkey. From $ 263,1 million at the end of 1980, it has reached up to $ 5954,1 million at the end of 1992. There has been a considerable change in the sectoral composition of FDI in Turkey in this period. The manufacturing industry share of FDI has decreased from 84 % in 1979 to 54 % in 1992. In contrast, the services sector's share of FDI has risen from 16 % to 41 % in 1992. These figures indicate that the bulk of increases in FDI have been directed towards the services sector. Especially, the increase of FDI in banking, insurance and tourism has been substantial in recent years.

Looking at the source country distribution of FDI, we observe that despite the increase in the number of source countries the share of OECD countries in total has almost remained the same 88.61 % in 1979 and 87. 72 % in 1992.

In the second part of this chapter, a simple but useful indicator was calculated to shed some light on the possible influence of MNEs activities on the Turkish economy and particularly on its manufacturing industry. Despite the common cry that more FDI should be attracted at any cost, our results suggest that a number

of industries have increasingly been dominated by foreign firms, and that is so even in comparison to one of the most dominated developed countries, the UK[10]. The most dominated industries by the end of 1992, are chemical products, machinery and equipment, rubber, paper and paper products, food beverage and tobacco, automotive and printing and publishing industries. The fact that a high sectoral protection rate coupled with concentrated market structures are two main characteristics of Turkish industry, where foreign firms have strong advantages over their domestic counterparts, calls for a more reasonable request that attention should be paid for prevention of the excessive market power of those firms operating in highly dominated Turkish industries. Without looking into each sector position separately, a grand figure on foreign investment inflow cannot, in itself, provide a sound base on which the extent and desirability of FDI is evaluated.

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[10]: It could be argued that in the case of developing countries where outward FDI is insignificant, multinational domination ratio of the same size may indicate higher domination for these countries. This is because, a national government may have relatively more control over companies whose headquarters are under its jurisdiction.

CHAPTER FOUR

Comparative Performances of Domestic and Foreign Firms in Turkish Manufacturing Industry

4.1: Introduction

Broadly speaking, empirical testing of theories of FDI has involved three approaches[1]. The first approach is rather descriptive in its nature and comprises studies that have compared multinationals directly with domestic enterprises in their home country or conversely compared characteristics of MNEs affiliates and indigenous companies in the host country, in terms of their size, growth and performance or their relative expenditure in areas such as advertising and R&D. The results of these studies can be summarised in the tables below. The first two tables show a summary of the results of comparisons between MNEs and the companies in their home country. As can be seen they confirm that MNEs tend to be more profitable, and larger, spending more on advertising and research activities, and more diversified than others.

Table 4.1 Characteristics of the largest US companies (1964)

Company type	National enterprise*	Transnational enterprise*	Multinational enterprise*
Number in sample	125	194	172
R&D expenditure as % of sales	0.6	1.6	2.6
Advertising expenditure as % of sales	1.7	1.9	2.5
Net profits on invested capital 1960-64 (%)	6.7	7.3	8.9
Average sales ($m)	160	200	460

*NEs manufacture in US only; TNEs manufacture in 1-5 foreign countries; MNEs manufacture in at least 6 foreign countries

Source: Vaupel (1971). Cited in Hood and Young (1979), p.69

1: The other two approaches are considered in the next chapter.

This study by Vaupel also produced evidence that MNEs had a more diversified product structure and paid higher wages in the USA. A later study by Parker(1974) has shown that European MNEs display similar characteristics to those of the US in their bias towards technology intensive activities. In the table below about 48 per cent of all multinational firms were considered to be research intensive in comparison with only 15 per cent of other companies.

Table 4.2 European firms, by research intensity and multinatinality (1971)

	% of companies			% of sales		
	MNE*	TNE*	NE*	MNE*	TNE*	NE*
Research intensive	48.8	12.5	17.4	54.6	13.7	9.5
Not research intensive	51.2	87.5	82.6	45.4	86.3	90.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of companies and value of sales in $ m.	123	24	23	$164,396	$13,932	$16,102

*MNEs have more than five manufacturing affiliates in different countries or over 15 % of group sales accounted for by affiliates; for TNEs the equivalent are 3-5 affiliates or 5-15 % of sales; for NEs , 2 or fewer affiliates or less than 5% of sales.

Source: Parker (1974). Cited in Hood and Young (1987), p.69

The converse of the studies comparing MNEs to domestic industry in their home country has been the comparison of the characteristics of MNE affiliates and indigenous companies in the host country. Dunning (1973) compared US affiliates in UK with the UK firms and found that the US affiliates were on average spending more on R&D and advertising and had higher capital expenditure per employee than UK firms. In addition the US affiliates employed a higher proportion of non-operative workers, who were found in more concentrated sectors, and were faster growing than local firms.

In his study Kumar (1991) compares the behaviour of MNE affiliates and their local counterparts (LCES) in the Indian manufacturing industry. Using both uni-variate and multi-variate analysis, the study finds that MNE affiliates have a larger scale of operations and higher profit margins are more vertically integrated, and report a larger volume of liquidity. In addition highly paid personnel account for a larger proportion of the total wage bill of MNE affiliates than their local counterparts. The work by Kumar also finds that the expenditures on advertising of MNE affiliates are not significantly different from those of their local counterparts. Moreover, contrary to expectation MNE affiliates are found to be spending relatively less on R&D than their local counterparts. The results of Kumar's univariate analysis is given in table 4.3.

Table 4.3 Analysis of discriminating characteristics: Findings of Wilcoxon's signed ranks test.

Parameter	Z statistics	Level of statistical significance (two tailed test)	Inference
1. Size	3.22	1%	SIZEM> SIZEL
2. Advertising intensity	0.78	--	
3. R&D intensity	2.35	5%	R&DM< R&DL
4. Share of high income employees in total wage bill	4.43	1%	HIEM>HIEL
5. Degree if vertical integration	4.13	1%	VASM> VASL
6. Liquidity ratio	2.15	5%	LIQM> LIQL
7. profit margins	4.33	1%	PCM> PCL

Note: Number of observations are 43 matched pairs of industries in all cases. Subscripts indicate respective groups viz. M: MNE affiliates; L: Local counterparts.

Source: Kumar (1991), p.386

This chapter presents the results of a comparative static analysis of the performance of domestic and foreign firms that have been included in the list of largest 500 industrial establishments in the Turkish manufacturing industry. The

comparisons cover the period, 1980-1989 in 8 main industry groups. Where data allowed, the analysis was conducted for 13 aggregated manufacturing sectors of industry. The examination of intra-industry consideration of relative size and performance of foreign firms among the 500 largest industrial establishments over a period of ten years has its crucial merits. First, an analysis of large firms in an industry is highly relevant to oligopolistic structures from which most theories of FDI draw their conclusions. Second, data on the performance of foreign firms are scarce in most countries, and particularly so in developing countries. Turkey is no exception to this, and to the best of my knowledge, no such studies have compared the relative performances of foreign and domestic firms over a period as considered here.

In this chapter we intend to investigate: (a) Comparative performances of foreign and domestic firms for the period of 1980-1989, and (b) Whether any systematic differences in the performances of foreign and domestic firms exist, by analysing relatively desegregated sectoral groups of industries. We will also examine if there is any relation between the foreign share and better relative performances of foreign firms. (c) Whether the differences in performance indicators are statistically significant for 13 groups of industries in 1989. (d) The relationship between sectoral composition of foreign firms' share and revealed sectoral comparative advantage. (e) Supply and marketing characteristics of FDI as related to foreign shares in Turkish manufacturing industry.

4.2: Overall Outlook

Economic performance indicators of domestic and foreign firms and their annual percentage changes during 1980-1989 are given in Tables, 4.4 , 4.5, 4.6 and 4.7.

Table 4.4 Indicators of economic performance of Foreign and Domestic firms within the top 500 industrial establishments, 1980-1989.[2]

FOREIGN FIRMS YEAR	N	S	GVA	EQ	TNA	GP	NEM	EX	EX/S
1980	44	145	na	29	na	18	33673	10	6.9
1981	47	300	na	48	na	23	37104	na	--
1982	50	361	113	109	276	41	36420	na	--
1983	55	529	143	135	393	52	30012	63	11.9
1984	59	1093	300	321	811	91	51236	139	12.7
1985	58	1362	357	303	1006	121	43350	128	9.3
1986	66	2683	739	562	2162	169	58201	268	9.9
1987	67	4524	1391	955	4019	513	67535	546	12.0
1988	63	6683	1787	1441	4867	630	53694	1261	18.8
1989	77	15196	4704	4216	11832	1975	79293	2544	16.7
DOMESTIC FIRMS YEAR	N	S	GVA	EQ	TNA	GP	NEM	EX	EX/S
1980	456	1221	na	410	na	106	504652	38	3.0
1981	453	1810	na	436	na	131	482429	na	---
1982	450	2781	820	717	3030	169	474886	na	---
1983	445	4291	928	1171	4777	264	596544	519	12.0
1984	441	6676	1578	2354	6859	564	536471	971	14.5
1985	442	10828	2634	4334	12821	1210	603002	1478	13.6
1986	434	14720	4830	5383	17254	1293	601752	1641	11.1
1987	433	27612	7688	7544	25783	2112	600830	2785	10.0
1988	437	39749	14315	13553	45938	4361	648262	6056	15.2
1989	423	63933	23323	24983	71248	4080	637000	9604	15.0

Source: Own computation from JICI[3] various issues.

As can be seen from the table 4.4, the number of foreign firms included in the largest 500 industrial establishments has increased from 44 in 1980 to 77 in 1989. This shows a considerable increase in the weight of foreign investment in the Turkish manufacturing industry. Apparently, a part of the relatively higher changes in economic performance indicators shown in Table 4.7, will be the result of this increase in the number of foreign firms.

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[2]: All values in billion TL, except NEM. N: number of firm, S: sales from production, GVA: gross value added EQ: equity, TNA: total net asset, GP: gross profit, EX: export, NEM: number of employment, EX/S: Export sale ratio.

[3]:Throughout this chapter JICI indicates Journal of the Istanbul Chamber of Industry: Turkey's 500 Large Industrial Establishments.

Table 4.5 Annual percent change of economic performance indicators of foreign firms, 1980-1989.

	1980-1	1981-2	1982-3	1983-4	1984-5	1985-6	1986-7	1987-8	1988-9	(1980-89)
S	106	20	47	107	24	97	69	48	127	72
GVA	--	--	27	110	19	107	88	28	163	77
EQ	65	127	24	139	-6	85	70	51	193	83
TNA	--	--	43	106	24	115	86	21	143	77
GP	26	82	27	75	33	40	204	23	213	80
EX	--	--	--	121	-9	109	103	131	102	93
NEM	10	-2	-18	71	-15	34	16	-20	48	14
EX/S	--	--	--	7	-27	6	21	57	-11	9

Source: Own computation from JICI various issues.

Table 4.6 Annual percent change of economic performance indicators of domestic firms, 1980-1989.

	1980-1	1981-2	1982-3	1983-4	1984-5	1985-6	1986-7	1987-8	1988-9	(1980-89)
S	48	54	54	56	62	36	88	44	61	56
GVA	--	--	13	70	67	83	59	86	63	63
EQ	6	65	63	101	84	24	40	80	84	61
TNA	--	--	58	42	87	35	49	78	55	58
GP	24	29	56	137	115	7	63	106	-6	59
EX	--	--	--	87	52	11	70	117	59	66
NEM	-4	-2	26	-10	12	-0.2	-0.2	8	-2	4
EX/S	--	--	--	20	-6	-18	-10	51	-1	37

Source: Own computation from JICI various issues.

A short summary of changes in relative economic indicators of foreign and domestic firms is given in table 4.7.

Table 4.7 Relative average performance of foreign and domestic firms (1980-1989)

	Foreign/Domestic
SALES	1.26
GROSS VALUE ADDED	1.22
EQUITY	1.36
TOTAL NET ASSET	1.33
GROSS PROFIT	1.36
EXPORT	1.40
NUMBER OF EMPLOYMENT	3.26
EXPORT/SALE	1.44

Source: Constructed from the Tables 4.5 and 4.6.

It shows clearly that in all performance indicators, foreign firms have recorded higher average increases than their domestic counterparts. The highest relative increase is in number of employment which is 3.26 and this is followed by 1.44 increase in export sale ratio.

4.3: Relative Performances of Foreign and Domestic Firms

The comparison of foreign and domestic firms' relative performances has considerable implications for the effect of foreign direct investment on host country's welfare and resource allocation. As Simoes (1987) points out from a host-country viewpoint, higher productivity or profitability by foreign firms does not necessarily refer to a more appropriate resource allocation. It is now almost commonly accepted that international investment is a phenomenon of oligopolistic markets and the establishment of foreign subsidiaries may therefore be determined by international rivalry and encouraged by tariff protection. Thus the superior performance of foreign firms, rather than being evidence of higher efficiency, may simply reflect their ability to appropriate oligopoly or monopoly rents. Even in the absence of market distortions, it cannot be assumed that the value added generated by foreign firms' activities will definitely benefit the host country. This depends on the share of that value added accruing to residents in the host country.

On the other hand there may be various spill-over effects of foreign firms activities on domestic enterprises. For example, incoming FDI, by promoting increased competition, can encourage the faster adoption of new technology by domestic managers. Technologies and new management methods introduced into the country by foreign firms may have dynamising effect on domestic firms and contribute to increasing their efficiency.

4.3.1: Profitability

Most of the studies comparing the profitability of MNEs with local firms in host countries, have found that the aggregate data indicate that MNEs are fairly

profitable, and on average perform better than local firms[4]. As Lall (1980) points out 'while this accords with the general theoretical consideration that TNCs posses certain monopolistic advantages that give them an element of market power (and thus superior profitability) not possessed by other firms, it may be misleading if the average profitability of TNCs reflects, not their superior performance, but the fact that they happen to be concentrated in industries with higher profits (due, say, to higher risk, greater barriers to entry, better capacity-utilisation or higher rates of growth), or that they are larger (if size is associated with profitability)'(p. 43). In other words, the relevant issue is whether the advantages derive from superior efficiency or market power.

The major problem encountered in studies of profitability comparison of MNEs and local firms is the potential scope of remitted profits abroad by transfer pricing which is very difficult to account for. It should be born in mind that both of the pitfalls just mentioned are not cured in the analysis below, and the results should be interpreted accordingly. However, it is hoped that, by employing three profitability measures some of the cloud will be eliminated from the scene.

In the table 4.8 below, we have employed three profitability measures by which the relative profitability of foreign and domestic firms are compared. The table requires no extensive comment. It essentially confirms that foreign firms are more profitable than their domestic counterparts over the whole period, for all profitability measures. The relative profitability is the highest by 82 % for the rate of return on investment (profit/total net asset ratio), which indicates how efficiently firms utilise their assets. The relative rate of return on equity and relative profit margin are higher by 73 % and 26 % respectively.

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[4]: For an earlier survey of profitability comparison of MNEs and domestic firms in developing countries see Lall (1980). For later studies comparing foreign firms performances to domestic firms see Owen (1985) for France, Globerman (1987) for Canada, Koo(1987) for Korea, Bulcke (1987) for Belgium, and Simoes (1987) for Portugal.

Table 4.8 Relative profitability ratios of foreign and domestic firms, 1980-1989.

	FOREIGN FIRMS			DOMESTIC FIRMS					
	1	2	3	4	5	6			
	PROFIT	PROFIT	PROFIT	PROFIT	PROFIT	PROFIT	FOREIGN/DOMESTIC		
	------	------	------	------	------	------			
YEAR	EQUITY	TNA	SALE	EQUITY	TNA	SALE	1/4	2/5	3/6
1980	62.0	---	12.4	25.8	---	---	2.40	---	--
1981	47.9	---	7.6	30.0	---	7.2	1.59	---	1.05
1982	37.6	14.8	11.3	23.5	5.5	6.0	1.60	2.69	1.88
1983	38.5	13.2	9.8	22.5	5.5	6.1	1.71	2.40	1.60
1984	28.3	11.2	8.3	23.9	8.2	8.4	1.18	1.36	0.98
1985	39.9	12.0	8.8	27.9	9.4	11.1	1.43	1.27	0.79
1986	30.0	7.8	6.2	24.0	7.4	8.7	1.25	1.05	0.71
1987	53.7	12.7	11.2	27.9	8.1	7.6	1.92	1.56	1.47
1988	43.7	12.9	9.4	32.1	9.4	10.9	1.36	1.37	0.86
1989	46.8	16.6	12.9	16.3	5.7	6.3	2.87	2.91	2.04
AVR	42.87	12.6	9.8	25.4	7.4	8.1	1.73	1.82	1.26

Source: Own computation from JICI various issues.

The higher general relative profitability ratios of foreign firms are confirming a priory expectation about MNEs performance. However, it is extremely difficult to pinpoint as to what exactly might have caused the apparent differences in profitability measures. The highest relative profitability of foreign firms being in total asset and equity, may imply that at least a part of these profit differences lies in better management.

4.3.1.1: Sectoral Profitability

The comparison of foreign and domestic firms' rates of return on equity are presented in Table 4.9 in two sub-periods[5]. As far as the period 1980-83 is concerned, the total sectors relative rate of return is 1.09, which does not indicate a major difference in the profitability ratio for both group of firms. However, a

[5]: **Troughout this chapter sectors have been donated as; FBT: food, beverage and tobacco; TWL: textile, wearing apparel and leather; PPP: paper, paper products and publishing; CPP: chemical, petroleum products and plastic; MNM: manufacture of non-metalic mineral products; BM: basic metal; MFP: manufacture of fabricated metal products, machinery, professional and scientific equipment; AT: automotive industry.**

closer examination of the table will show that, in sectors 1, 3, 6 and 7 foreign firms' rate of return on equity is higher than domestic firms, while in the remaining sectors 2, 4, 5 and 8, domestic firms performed better. In the next period, the average relative profitability is 2.09 in favour of foreign firms.

The improvement in foreign firms' profitability is obvious. In all but sectors 5 and 6, foreign firms' rate of return is higher than their domestic counterparts. Is there any significant relation between foreign firms' share and relative higher rates of return on equity? The correlation coefficient between foreign shares and relative profitability for both periods are -0.24 and 0.80 respectively. While we found this relation to be significant at 5 % for 1985-89 period, it was insignificant for the period 1980-83.

Table 4.9 Sectoral breakdown of comparative profitability of foreign and domestic firms; Gross Profit / Equity (%), 1983-1989

	FOREIGN (1980-3)	DOMESTIC (1980-3)	F/D	FOREIGN (1985-9)	DOMESTIC (1985-9)	F/D
1. FBT	73.5	52.7	1.39	41.2	25.4	1.62
2. TWL	9.5	20.5	0.46	59.6	35.6	1.65
3. PPP	40.7	28.7	1.41	34.8	18.5	1.88
4. CPP	50.8	52.8	0.96	62.6	47.4	1.32
5. MNM	23.5	33.5	0.69	24.8	66.4	0.37
6. BM	28.5	20.4	1.39	27.8	43.0	0.64
7. MFP	67.5	39.5	1.70	52.2	24.9	2.08
8. AT	31.5	41.5	0.75	60.6	8.4	7.21
Average			1.09			2.09

Source: Own computation form JICI various issues.

The rate of profitability on total net assets and related relative ratios for 8 main groups of industries are shown in table 4.10. With the exceptions of industry groups 1 and 5, foreign firms have clearly outperformed local indigenous firms in terms of net asset profitability for the years 1980-83.

Although foreign firms relative total average profitability has fallen from 2.5 in the first period to 1.65 in the second period, they still maintain relatively higher

profit asset ratio in industry groups 1, 2, 3, 7 and 8. Despite high relative profitability on assets during the period 1980-83, the correlation coefficient between the foreign share of the industry and the relative rate of return on total net assets is -0.087 and insignificant. However, the correlation coefficient for the period of 1985-89 is 0.714 and significant at % 5 level.

Table 4.10 Sectoral breakdown of comparative profitability of foreign and domestic firms; Gross Profit / Total Net Asset (%), 1980-1989.

	FOREIGN (1980-83)	DOMESTIC (1980-83)	F/D	FOREIGN (1985-89)	DOMESTIC (1985-89)	F/D
1. FBT	5.0	2.3	6.50	15.8	7.2	2.19
2. TWL	2.0	7.4	0.27	17.4	10.4	1.67
3. PPP	8.0	(-)	---	10.4	7.2	1.44
4. CPP	20.0	7.0	2.85	15.2	15.2	1.00
5. MNM	1.0	5.0	0.20	8.8	23.0	0.11
6. BM	6.0	(-)	---	8.8	13.8	0.63
7. MFP	17.0	6.0	2.80	12.0	10.6	1.13
8. AT	13.0	8.5	1.52	14.6	2.8	5.06
Average			2.35			1.65

Source: Own computation from JICI various issues.

Table 4.11 sets out the comparative profit/sale ratios of foreign and domestic firms. As it can be seen from a quick glance, foreign firms have achieved higher profit rates in all industry groups except textiles in the first period and manufacture of non-metallic mineral products in the second period. Average total relative profitability has fallen from 1.61 in the first period to 1.52 in the second period.

Again, the relation between foreign share and relative profit/sale ratio is negative and insignificant for 1980-83, while the correlation coefficient for the second period is 0.713 and significant at % 5 level. If we examine these three profitability ratios more closely across industry groups, the following patterns make themselves obvious: a- for the 1980-83[6] period, it is the textile wearing and

[6]: This period (1980-83), can be considered as a "wait and see" period especially for forign firms. Substantial increases in the FDI occured only

leather products where foreign firms performed badly in terms of all the profitability measures considered. This is followed by the non-metallic mineral products group, where foreign firms failed to achieve greater profitability in all but sale. Again, foreign firms recorded lower profit/equity ratios in automotive

Table 4.11 Sectoral breakdown of comparative profitability of foreign and domestic firms; Gross Profit / Sale (%), 1980-1989.

	Foreign (1980-3)	Domestic (1980-3)	F/D	Foreign (1985-9)	Domestic (1985-9)	F/D
1. FBT	18.4	7.2	2.56	10.6	6.6	1.60
2. TWL	5.6	6.5	0.86	12.4	7.6	1.63
3. PPP	10.2	9.4	1.09	7.4	4.6	1.59
4. CPP	17.7	10.1	1.70	11.2	10.2	1.09
5. MNM	10.4	9.3	1.11	9.8	15.4	0.63
6. BM	14.8	6.5	2.27	8.6	6.0	1.43
7. MFP	23.3	10.8	2.15	9.6	7.0	1.37
8. AT	7.6	6.7	1.12	8.2	2.9	2.82
Average			1.61			1.52

Source: Own computation from JICI various issues.

and chemical-petroleum-plastic groups of industries; b- for the 1985-89 period, manufacture of non-metallic mineral products and basic metal industry groups are the two sectors[7] where foreign firms have been outperformed by their local counterparts. In all the remaining sectors foreign firms have achieved higher relative profitability ratios; c- foreign firms seem to have been out performed in both periods in manufacturing of non-metallic mineral products despite the fact that their share of the sector has increased from 9.8 % to 15 %. However, the proportion of foreign firms sales in total foreign sales has only increased slightly

when 1980 military take over resolved the social and political instability. It was also after 1983 that more liberal law and regulations concerning FDI were put in practice. Moreover 1980 heralds the the beginning of export-oreinted economic policy.

[7]: These two sectors are, to a large extent, dominated by public enterprises.

from % 4 to % 5.46. One possible explanation may be that the foreign firms have been increasing their investments, as the increasing relative capital intensity[8] might suggest, in this sector during the whole period; d- there is a clear association between the relatively higher foreign firms' profitability and their share of industry groups during the 1985-1989 period.

4.3.2: Productivity

The usefulness of profitability is undermined because of the fact that it is subjected to several manipulations, in order to evade taxation. Therefore, productivity may be a much better indicator of the contribution of foreign firms' to the efficiency of resource allocation. However, there are enormous problems associated with measurement and comparison of productivity of MNEs and local firms. First, as Lall (1980) suggests, there are problems arising from the measurements of inputs (especially different kinds of labour and capital) and how they should be interpreted. Second, productivity varies with the nature of industry, the production techniques used, scale economies, managerial efficiency, capacity utilisation, labour-force skills, market power and so on. Third, there are problems related to definition of efficiency.[9] Finally, there is a need for great care to be given to the methodology. A direct comparison of domestic and foreign firms, of different sizes, in different industries, facing different market conditions, or using

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[8]: See Figures in Appendix (1), pp. 207-14, for graphical representation of comparisons made here.

[9]: The efficiency may be defined as "the ability to maximise value added for a given size of firm, in a given industry, from a given bundle of inputs with a given technology, or to bring new thecnologies into use, or to inmprove technology over time, or to realise economies of scale, or simply to learn"(Lall 1980, p.44).

vastly different technologies in the same industry, may be misleading if these factors are not explicitly accounted for[10].

In order to account for some of the above problems, the analysis of efficiency comparisons of foreign and domestic firms are conducted for similar sized groups of foreign and local firms across different industries. The measurement of Comparative data for the overall period of 1980-89 on the productivity of both foreign and domestic firms are presented in Table 4.12. Both, labour and equity productivity measures show that foreign firms are more productive than their domestic counterparts. As can be seen, the relative equity productivity of foreign firms are ahead of domestic firms by 35 %, while relative labour productivity is higher by 88 %. The close relationship between foreign firms' relative higher labour productivity and capital intensity may, to a great extent, explain the source of this difference. The related simple correlation coefficient is 0.775 and significant at 1 % level.

Table 4.12 Relative productivity of foreign and domestic firms; (1980-1989)

	FOREIGN FIRMS		DOMESTIC FIRMS		RELATIVE PRODUCTIVITY	
	GVA	GVA	GVA	GVA	FOREIGN/DOMESTIC	
YEAR	EQUITY	NEM	EQUITY	NEM	GVA/EQUITY	GVA/NEM
1980	---	---	---	---	---	---
1981	---	---	---	---	---	---
1982	103	3.1	114	1.7	0.90	1.79
1983	105	4.7	79	1.5	1.33	3.06
1984	93	5.8	67	2.9	1.39	1.99
1985	117	8.2	60	4.3	1.93	1.88
1986	131	12.6	89	8.0	1.46	1.58
1987	145	20.5	101	12.7	1.42	1.60
1988	124	33.2	105	22.0	1.17	1.50
1989	111	59.3	93	36.6	1.19	1.62
AVR	116	18.4	89	11.2	1.35	1.88

Source: Own computation from JICI various issues.

10: **Ibid., p. 45.**

4.3.2.1: Sectoral productivity

The Comparative data for 1980-89 on the productivity of both domestic and foreign companies are presented in tables 4.13 and 4.14.

It is clear form table 4.13 that the labour productivity of foreign firms is higher than their domestic counterparts. The productivity differences for the first period are especially marked in market intensive, food products, printing and publishing and in modern labour intensive, manufacture of fabricated metal products electrical and non-electrical machinery. The chemical, petroleum products and plastic industry group is the only one where foreign firms' relative labour productivity is lower than domestic firms'. The overall average relative labour productivity is 2.69 for the first period and has dropped to 1.68 in the second period. Although the relative overall labour productivity has diminished in the second period, the foreign firms have maintained relatively higher labour productivity in all but one industry group.

Table 4.13 Sectoral breakdown of comparative productivity of foreign and domestic firms; Gross value added / Number of Employees (Billion TL.); in 1983 and 1985-1989

	FOREIGN (1983)	DOMESTIC (1983)	F/D	FOREIGN (1985-89)	DOMESTIC (1985-89	F/D
1. FBT	3.3	0.8	4.12	28.0	11.4	2.45
2. TWL	1.4	1.4	1.00	14.7	10.5	1.59
3. PPP	6.3	1.2	5.25	31.0	18.8	1.65
4. CPP	4.7	5.4	0.87	2.9	40.6	0.81
5. MNM	3.3	1.9	1.73	25.8	20.5	1.25
6. BM	3.7	1.5	2.46	30.5	15.9	1.91
7. MFP	3.4	0.7	4.85	24.9	15.5	1.60
8. AT	4.0	3.2	1.25	25.4	11.3	2.24
AVR			2.69			1.68

Source: Own computation from JICI various issues.

It should be noted that, the correlation coefficients related to the extent of foreign share and relative higher productivity are - 0.296 for the first period and 0.430 for the second. Both correlation coefficient being insignificant may suggest that the source of relative labour productivity differences lies elsewhere.

Table 4.13 shows comparative equity productivity of foreign firms and their local counterparts. A casual examination of the table below indicates that foreign firms are more productive, measured as gross value added/equity, than domestic firms. The higher relative productivity is more noticeable in the first period 1.80 than 1.12 in the second period. Domestic firms are more productive in the textile and manufacture of non-metallic mineral products industry groups in the first period. In the second period while they maintain their relative productivity in manufacture of non-metallic mineral products, domestic firms have also become more productive in basic metal, food beverages and tobacco industry groups.

Table 4.14 Sectoral Breakdown of comparative equity productivity of foreign and domestic firms; Gross Value Added / Equity (%); in 1983 and 1985-89

	FOREIGN (1983)	DOMESTIC (1983)	F/D	FOREIGN (1985-89)	DOMESTIC (1985-89)	F/D
1. FBT	176	146	1.20	108	177	0.61
2. TWL	114	146	0.97	168	150	1.12
3. PPP	160	70	2.66	145	103	1.40
4. CPP	86	64	1.34	142	100	1.42
5. MNM	53	94	0.56	105	196	0.53
6. BM	88	87	1.01	74	227	0.32
7. MMP	170	31	5.48	169	141	1.19
8. AT	123	104	1.18	184	75	2.44
AVR			1.80			1.12

Source: Own computation from JICI various issues.

In the rest of 5 group of industries including textiles foreign firms have achieved relatively higher equity productivity. The insignificant correlation coefficients between foreign shares of industry-groups and relative equity productivity are -0.008 and 0.590 respectively for the first and second periods.

What emerges from looking at tables 4.13 and 4.14 is that: (1)- foreign firms' average total relative labour and equity productivities are higher than their domestic counterparts. The results of the above analysis indicate, to some extent, the existence of market imperfections. Assuming that there was no market imperfection, we would expect foreign firms with higher labour productivity to be relatively less capital productive in comparison with domestic firms. The results, being as they are, would suggest that industries where foreign firms have entered are relatively highly concentrated, and are typically oligopolistic. The relatively higher labour and capital productivity of foreign firms may partially be explained by the oligopolistic advantages they possess compared with domestic firms. These advantages are likely to be better management, more capital intensive production techniques[11] and membership of a multinational group. (2)- there are two main groups of industries in which foreign firms do not have both higher labour and equity productivities in the first period. These are chemical, petroleum products and plastics and the manufacture of non-metallic mineral products. A closer examination of chemical petroleum and the plastics industry group may to some extent provide the main explanation behind the relatively poor labour productivity of foreign firms. It is most likely due to the existence of large publicly owned domestic companies, engaged in highly capital intensive petrol refining activities in which there are no equivalent foreign firms. The relatively lower capital productivity of the manufacture of non-metallic mineral products may be because of the increased investment of foreign firms after 1983 in the sector. The share of foreign firms of this industry have increased from 6 % in 1981 to 13.7 % in 1983 and to 19.9 % in 1989.

11: The simple correlation coefficients between foreign firms' sectoral relative capital intensity and relative labour productivity are positive, 0.030 for 1983 and 0.592 for the period of 1985-89, but are insignificants.

4.3.3: Capital intensity

The capital intensity, and equity per employee, ratios of foreign and domestic firms are set out in Table 4.15. Again except for the years 1981 and 1985, the equity per employee for foreign firms is higher for all the rest of period. The foreign firms' average relative capital intensity is higher by 26 % for the overall period of 1980-1989.

Table 4.15 Relative capital intensity of foreign and domestic firms (1980-1989)

	FOREIGN FIRMS	DOMESTIC FIRMS	
	EQUITY/NEM	EQUITY/NEM	FOREIGN/DOMESTIC
1980	0.8	0.8	1.00
1981	1.2	0.9	1.33
1982	2.9	1.5	1.93
1983	4.4	1.9	2.31
1984	6.2	4.3	1.44
1985	6.9	7.1	0.97
1986	9.6	8.9	1.07
1987	14.1	12.5	1.12
1988	26.8	20.9	1.28
1989	53.1	39.2	1.35
AVR	12.60	9.80	1.37

Source: Own computation from JICI various issues.

4.3.3.1: Sectoral Capital Intensity

The comparative capital intensity of foreign and domestic firms are shown in table 4.16, and need no extensive comments. Except for chemical petroleum products and the plastics industry group, foreign firms are more capital intensive in all industry groups presented in the table. The main reason for the relative poor performance of foreign firms in this industry group is due to publicly owned petrol refinery companies as explained before. There is a substantial increase in the average total relative capital intensity of foreign firms from 1.39 in the first period to 2.18 in the second period. The most marked differences in relative capital intensity occurs in food beverages and tobacco, manufacture of non-

metallic mineral products and basic metal industry groups. There is no statistically significant relation between the relative foreign share of industry groups and their superior capital intensity performances over domestic firms. The related correlation coefficient is -0.129 for the second period. This negative correlation seems, mainly, to be due to the foreign share in the automobile industry which accounts for % 70.5 of industry sales in the second period, while the relative capital intensity in this industry is only 1.19.

Table 4.16 Sectoral breakdown of comparative capital intensity of foreign and domestic firms; Equity/Number of Employees, 1980-1989

	FOREIGN (1980-83)	DOMESTIC (1980-83)	F/D	FOREIGN (1985-89)	DOMESTIC (1985-89)	F/D
1. FBT	1.79	0.82	2.18	26.40	5.71	4.62
2. TWL	0.81	0.75	1.07	12.70	6.59	1.95
3. PPP	1.78	1.99	0.89	22.90	16.6	1.37
4. CPP	3.27	3.59	0.90	21.78	33.6	0.64
5. MNM	2.33	1.21	1.92	25.80	9.79	2.58
6. BM	2.61	1.48	1.76	48.59	13.42	3.62
7. MFM	1.56	1.39	1.12	13.46	8.90	1.51
8. AT	2.01	1.51	1.33	13.73	11.48	1.19
AVR			1.39			2.18

Source: Own computation from JICI various issues.

4.4: A Statistical Test of Findings on Average Comparative Performance of Foreign and Domestic Firms

Table 4.17 compares the average performance of domestic and foreign firms conveyed in Turkey's largest 500 industrial establishments in 1989. The main reason for considering the comparative performances of foreign and domestic firms separately for 1989 is that, unlike the analysis above, it enables us to conduct investigation on a relatively more desegregated level. Secondly, the comparison is based on mean values of economic performance indicators and can be more properly tested. However, we should be rather careful at generalising the results, as the fluctuation in economic performance indicators may distort the common features of foreign and domestic firms when comparison is confined to one year

only. Again at this level of desegregation the number of firms assigned to some sectors are reduced, especially for beverages, tobacco and paper, paper products and publishing sectors are represented with only 2 foreign firms, which can hardly be representative.

According to the result shown in Table 4.17, foreign firms on average are more capital intensive, have higher labour and capital productivities, and are more profitable in terms of profit/sale ratio and asset profitability. However they are less profitable in terms of profit/equity ratio, have lower export intensity and are on average, smaller than their domestic counterparts. The differences that favour foreign firms are statistically significant with the exception of asset profitability. On the other hand, none of the differences in favour of domestic firms seem to be statistically significant.

Table 4.17 Comparative average performance of foreign and domestic firms[a] in 1989.

	Foreign firms	Domestic firms	Statistical significance of difference[b]
GP/Sale (%)	9.9	7.3	p.>95
GP/Equity (%)	45.2	65.6	---
GP/Total Net Asset (%)	14.4	12.8	---
Equity / NEM (Million TL)	58.1	39.6	p.>95
GVA/EQUITY (%)	216.5	161.5	p.>95
GVA/NEM (Million TL)	60.3	43.7	p.>99
Export/Sales (%)	17.6	18.8	---
TNA per firm (Billion TL)	131.0	136.6	---

a: Comparison included sectors in which there were foreign firms.

b: P.>99, p.>95 mean that the difference in the average performance of foreign and domestic firms were statistically significant 1 % and 5 % level respectively. The formula used to check the statistical significance of differences was: **(Xf-Xd)/(sf/√n)**, Where **Xf** and **Xd** refer to average performance of foreign and domestic firms, **sf** is standard deviation of foreign firms and **n** is sample number of foreign firms.
Columns (1) and (2) are mean values.

Source: Own computation from JICI (1990).

However, as the relative importance of direct foreign investments differ among sectors, the differences in performance may have been the result of a different weight of FDI by sectors. But to what extent are these variances due to a different industrial distribution between foreign and domestic firms? In order to examine whether any systematic differences in the performances of foreign and domestic firms existed, we investigated the statistical significance of the average performance of foreign and domestic firms for each of the 13 manufacturing sectors. The results are set out in tables 4.18.

Table 4.18 Sectoral distribution of the average performance of foreign and domestic firms in 1989.

1. Food Industry	Foreign firms	Domestic firms	Statistical significance
GP/Sale (%)	7.6	8.2	-----
GP/Equity (%)	46.7	114.0	p.>99
GP/Total net asset (%)	13.6	17.7	-----
Equity/NEM (Million TL)	51.5	27.3	-----
GVA/ Equity (%)	169.6	244.7	p.>99
GVA/NEM (Million TL)	60.4	32.8	p.>95
Export/Sales (%)	30.2	20.0	-----
TNA per firm (Billion TL)	101	106	
2. Beverages and Tobacco processing			
GP/S (%)	3.4	7.8	p.>99
GP/Equity (%)	13.5	15.0	-----
GP/Total net asset (%)	3.8	8.3	-----
Equity/NEM (Million TL)	141.4	119.9	-----
GVA/Equity (%)	40.1	122.6	p.>99
GVA/NEM (Million TL)	34.7	80.7	p.>99
Export/Sales (%)	61.4	31.2	-----
TNA per firm (Billion TL)	101	371	p.>99
3.Textile Industry			
GP/Sale (%)	3.5	2.6	-----
GP/Equity (%)	40.7	51.5	-----
GP/Total net asset (%)	13.4	5.6	-----
Equity/NEM (Million TL)	34.7	26.8	-----
GVA/Equity (%)	117.7	83.2	-----
GVA/NEM (Million TL)	35.7	28.7	-----
Export/Sales (%)	26.3	27.8	-----
TNA per firm (Billion TL)	98	74	-----
4.Paper and Paper products and Publishing Industry			
GP/Sale (%)	14.3	11.2	-----

GP/Equity (%)	58.8	46.7	-----
GP/Total net asset (%)	18.2	15.2	-----
Equity/NEM (Million TL)	59.0	54.6	-----
GVA/Equity (%)	119.1	112.2	-----
GVA/NEM (Million TL)	67.9	44.7	p.>95
Export/Sales (%)	0.3	9.8	p.>99
TNA per firm (Billion TL)	60	87	
5.Basic Chemicals and Other Chemical products			
GP/Sale (%)	7.8	11.6	-----
GP/Equity (%)	79.3	86.1	-----
GP/Total net asset (%)	15.6	19.2	-----
Equity/NEM (Million TL)	33.1	69.9	p.>95
GVA/Equity (%)	270.0	210.0	-----
GVA/NEM (Million TL)	79.7	73.2	-----
Export/Sales (%)	7.9	17.8	p.>99
TNA per firm (Billion TL)	68	207	p.>99
6. Petroleum Products and Petroleum and Coal Derivatives			
GP/Sale (%)	39.6	33.2	-----
GP/Equity (%)	278.6	93.1	-----
GP/Total net asset (%)	30.1	14.9	p.>99
Equity/NEM (Million TL)	151.6	63.4	-----
GVA/Equity (%)	660.6	227.1	-----
GVA/NEM (Million TL)	154.4	73.6	p.>99
Export / Sales (%)	0.5	0.8	-----
TNA per firm (Billion TL)	130	1252	p.>99
7. Rubber Products and Other Plastic Processing Industry			
GP/Sale (%)	13.2	7.1	-----
GP/Equity (%)	52.7	36.6	-----
GP/Total net asset (%)	22.0	13.1	-----
Equity/NEM (Million TL)	58.1	25.7	p.>99
GVA/Equity (%)	125.4	151.1	p.>99
GVA/NEM (Million TL)	72.1	30.2	p.>99
Export/Sales (%)	14.7	11.4	-----
TNA per firm (Billion TL)	171	33	p.>99
8. Glass and Glass Products, Baked Clay, Ceramics and Porcelain Industry			
GP/Sale (%)	11.2	8.0	-----
GP/Equity (%)	20.4	32.9	p.>99
GP/TNA (%)	6.8	12.8	p.>99
Equity/NEM (Million TL)	70.0	33.6	-----
GVA/Equity (%)	91.3	196.4	p.>99
GVA/NEM (Million TL)	47.9	52.7	-----
Export/Sales (%)	27.0	15.7	p.>99
TNA per firm (Billion TL)	225	74	p.>99
9. Other Stone and Earthware Industry			
GP/Sale (%)	3.1	12.5	-----
Gp/Equity (%)	-172.0	59.7	-----
GP/TNA (%)	8.1	19.2	-----
Equity/NEM (Million TL)	19.5	46.6	p.>99
GVA/Equity (%)	473.4	193.4	-----

GVA/NEM (Million TL)	40.3	51.8	-----
Export/Sales (%)	2.6	3.5	-----
TNA per firm (Billion TL)	37	55	p.>95
10. Iron and Steel and Non-Ferrous Metal Main Industry			
GP/Sale (%)	2.9	6.8	p.>95
GP/Equity (%)	21.1	45.3	p.>95
GP/TNA (%)	7.7	13.5	-----
Equity/NEM (Million TL)	16.9	47.4	p.>99
GVA/Equity (%)	78.2	128.4	p.>95
GVA/NEM (Million TL)	58.7	47.0	-----
Export/Sales (%)	34.4	24.3	-----
TNA per firm (Billion TL)	392	224	-----
11. Machinery, and Manufacture of Fab-ricated Metal Products			
GP/Sale (%)	0.4	4.8	-----
GP/Equity (%)	3.8	75.0	p.>99
GP/TNA (%)	3.1	15.7	p.>99
Equity/NEM Million TL)	54.7	33.1	-----
GVA/Equity (%)	115.8	202.1	p.>99
GVA/NEM (Million TL)	54.4	45.8	-----
Export/Sales (%)	16.6	12.4	-----
TNA per firm (Billion TL)	68	102	p.>95
12. Electrical Machinery Tools Equipments			
GP/Sale (%)	9.9	7.1	-----
GP/Equity (%)	64.3	93.8	-----
GP/TNA (%)	16.9	14.9	-----
Equity/NEM (Million TL)	36.2	32.7	-----
GVA/Equity (%)	237.8	250.0	-----
GVA/NEM (Million TL)	55.8	51.2	-----
Export/Sales (%)	6.6	15.7	p.>99
TNA per firm (Billion TL)	87	96	-----
13. Transportation Vehicles Industry			
GP/Sale (%)	13.5	2.9	p.>99
GP/Equity (%)	59.9	34.3	p.>99
GP/TNA (%)	19.7	8.9	p.>99
Equity/NEM (Million TL)	32.9	29.1	-----
GVA/Equity (%)	211.5	153.0	-----
GVA/NEM (Million TL)	49.3	43.7	-----
Export/Sales (%)	16.3	4.8	-----
TNA per firm (Billion TL)	169	93	p.>95

Columns (1) and (2) are mean values.

b: P.>99, p.>95 mean that the difference in the average performance of foreign and domestic firms were statistically significant 1 % and 5 % level respectively. The formula used to check the statistical significance of differences was:**(Xf-Xd)/(sf/√n)**, Where **Xf** and **Xd** refer to average performance of foreign and domestic firms, **sf** is standard deviation of foreign firms and **n** is sample number of foreign firms. **---:** Not significant

Source: Own computation from JICI (1990).

A summary of the sectoral performance differences of foreign and domestic firms are set out in Table 4.19. It shows the number of industries where the relationship in performance between the foreign and domestic firms was in the same direction as in the Table 4.17 and the number of the industry group where such relationships were statistically significant or insignificant.

Table 4.19 Summary of the relationship between the performance of foreign and domestic firms.

	Total number of industries	With the same sign as in table 4.16	Industry statistically significant among those with the same sign	Industry statistically significant among those with different sign
GP/S	13	7	13	2-10
GP/EQ	13	9	1-8-10-11	13
GP/TNA	13	6	6-11-13	8
EQ/NEM	13	10	7	5-9-10
GVA/EQ	13	6	-	1-2-7-8-10-11
GVA/NEM	13	10	1-4-6-7	2
EX/S	13	6	4-5-12	8
TNAF	13	7	2-5-6-11	7-8-13

Source: Constructed from Tables 4.17 and 4.18.

The results are at best mixed in the most cases of relative profitability. Although profit sale ratio is in favour of foreign firms in 7 groups of industry, it is only significant in the automotive industry at % 5 level. On the other hand, in 6 industries, domestic firms have recorded better profit sale ratios and these differences are significant; at 1 % in beverages and tobacco processing, and at 5 % in iron and steel and non-ferrous metal industries.

Domestic firms have clearly outperformed foreign firms in terms of rate of return on capital in 9 industry groups and these differences are significant in 4 sectors. Although, there are four industry groups where foreign firms perform better, this is significant only in the transportation vehicle industry.

In the case of profitability of total net asset, in seven industry groups domestic

firms have higher ratios, of which two are statistically different at 1 % level. In contrast, foreign firms show higher asset profitabilities in 6 groups, of which the difference is significant at 1 % level in transportation vehicle industry. On the basis of relative performance indicators presented here it could not be argued that foreign firms are more profitable than their local counterparts.

As regards capital intensity, although there are 10 sectors where foreign firms have higher capital labour ratios over domestic firms, this difference is significant only in rubber products and other plastic industry group. In the remaining three sectors, domestic firms' capital labour ratios are significantly higher than foreign firms.

Turning next to the value-added ratios, foreign firms seems to have relatively higher labour productivity while domestic firms exhibit relatively higher capital productivity. In 10 main sectors, the difference in labour productivity is in favour of foreign firms, and is significant in 4 groups of industries. Domestic firms achieve better equity productivity performances in seven sectors, and all are statistically significant. Of the six groups where foreign firms record higher equity productivities, not in one sector does this difference reaches the level of significance.

Finally, there is no clear indication of much superiority of either foreign or domestic firms with regard to the size and export intensity. However domestic firms export superiority is significant in three sectors as compared with foreign firms' (one sector).

The analysis conducted so far does not provide a straight forward answer to the question posed in the beginning of this section: Do any systematic differences exist between the performance of the two groups of firms. We are, therefore, led to adopt a rather cautious position about the relative performances of foreign and local firms in Turkish industry. From the above results we may infer that:

(a)- In the low technology, food, textile, paper and paper products and publishing

sectors, the relatively higher labour and equity productivities of foreign firms may indicate a more efficient use of similar technology. However, as relative higher labour productivities are associated with higher capital labour ratios, we may infer that differences in productivity are explained by the sort of technology used, rather than by more efficient use of similar technology.

In beverages and the tobacco processing industry, despite higher capital labour ratio, foreign firms are far behind domestic firms in terms of labour and equity productivities. The average size of domestic firms being as 3.7 times that of foreign firms shows the extent of large public enterprises domination of the sectors.

In other low technology sectors: glass and glass products, baked clay, ceramic and porcelain, while foreign firms have higher capital labour ratios and bigger average sizes, their average labour and equity productivities are lower than local firms. It is difficult to say whether this is due to the nature of technology, the existence of excess capacity, or poor management. Again in iron and steel and the non-ferrous metal main industry, despite bigger average sizes, foreign firms are less capital intensive and have a much lower equity productivity.

(b)- In the high technology, chemicals, petroleum, and transportation, sectors, foreign firms have relatively higher labour as well as higher capital productivity, indicating perhaps the use of more advanced technology, scale economies or better management. With less certainty, similar inference could be made for machinery, electrical machinery and rubber industries where perhaps the relatively higher labour productivity associated with higher capital intensity may be implying that the differences are due to the kind of technology used rather than by efficiency of running operations.

4.5: International Competitiveness and Compared Export Intensity of Foreign and Domestic Firms

According to Globerman (1987), it could be argued for a variety of reasons that the international competitiveness of a domestic industry is a reasonably good measure of its productivity performance, assuming extant opportunities to improve productivity and economic performance remain the same. The relative trade performance of an industry reveals how well local managers in that industry have taken advantage of changes in underlying knowledge about production and marketing conditions compared to managers in the same industries located abroad. The measure of relative trade performance employed in this study is a net trade balance ratio defined as: RCA_{it}= Xit-Mit / $(X_{it}+M_{it})$[1], where X_{it} is the value of exports of *i*th industry in period *t*, M_{it} is the value of imports and RCA_{it} stands for revealed comparative advantage.

4.5.1: The Relative Comparative Advantage, Foreign Ownership and Factor Intensity

Two RCA indexes were calculated, corresponding to the level of industry group considered in this study. One for the year 1984 and one for 1988. It can be seen that in year 1984, of 8 industry groups 4 industry groups had positive trade balances; in 1988, only 3 industry groups had positive net trade balances.

The first question to be tackled when assessing the effects of FDI on the international competitiveness of Turkey is this: do foreign firms show any preference for those industries where the country enjoys RCAs? Analysis of Tables 4.20 shows that the industry groups, which account for 58.6 % of total foreign firms sales had negative trade balances. Conversely, the industries which accounted for 41.4 % of foreign sales recorded positive RCA indices. The simple correlation coefficient between FST_{1983} and RCA_{1984} is -0.572 but not significant.

1: We followed the same formula used by Globerman (1987), p. 204.

Relative export propensity measured as export/sale ratio is shown in the second column of the table 4.20. Foreign firms display a higher export intensity in 4 industry groups, while in the remaining industry groups the reverse is true. Comparison between sectoral patterns in RCAs and foreign share clearly points to diverse orientations. Indeed, about 58.6 % of sales and 54.2 % of exports by foreign firms in 1983 were within industries where Turkey had a negative RCA index in 1984. Moreover, the average foreign share in sectors with a positive RCA index was 7.8 %, while for those with a negative RCA index it was about 32 %, leaving out paper and paper products with 3.5 % of foreign shares.

Although it is difficult to make generalisations out of the data at this rather aggregated level, almost all sectors with positive RCA indices are characterised, with the exception of chemical and petroleum products, by low technology levels. On the other hand % 67 of foreign sales are in sectors where the average capital labour ratio is relatively higher. It may be suggested that the contradiction between sectoral patterns in foreign share and RCAs is to some extent the result of foreign firms preference for sectors in which foreign firms enjoy substantial overseas advantages rather than those in which the Turkish economy enjoys strong local advantages.

Turkish comparative advantages lie mainly in traditional industries, with relatively small technological sophistication which require low-skilled labour. The simple correlation between RCA_{1984} and average skill intensity, (measured as wages per capita) and capital labour ratio (measured as fixed asset/employee) are, -0.543 and 0.230 respectively, but insignificant. Is there a substantial difference between 1983 and 1989 with regard to; 1- RCA and foreign share; 2-foreign share and export intensity; 3- foreign share and factor intensities? This is the first question that we intend to answer by presenting the data in table 4.21. The second and perhaps even more important question is whether an examination of RCA trends over time provides some insight on the evolution of Turkish specialisation.

Accordingly, the change in RCA values between 1984 and 1988 for each sector has been calculated as an index of dynamic comparative advantage.

Table 4.20 RCA indices, foreign ownership and factor intensities

Sector	RCA 1984	RXI 1983	RCI 1983	RLP 1983	SBF(%) 1983	FST 1983	ASI 1983	ACI 1983
1. FBT	0.722	0.75	2.18	4.12	9.7	6.7	0.47	0.93
2. TWL	0.925	1.40	1.07	1.00	3.4	3.3	0.74	1.53
3. PPP	-0.313	3.77	0.89	5.25	0.7	3.5	1.00	3.59
4. CPP	0.601	0.84	0.90	0.87	22.8	7.6	1.23	10.62
5. MNM	0.176	1.76	1.92	1.73	5.1	13.7	0.49	1.75
6. BM	-0.237	1.36	1.76	2.46	11.0	13.4	1.14	2.68
7. MMP	-0.768	0.78	1.12	4.85	14.2	17.2	1.04	1.19
8. AT	-0.660	0.44	1.33	1.25	33.1	66.0	1.27	2.17

RCA: Relative comparative advantage.
RXI: Relative export intensity.
RCI: Relative capital intensity.
RLP: Relative labour productivity.
FST: Foreign firms' sales as a proportion of total sectoral sale. **SBF:** Sectoral breakdown of foreign firms sales.
ASI: Average skill ratio for the sector.
ACI: Average capital intensity for the sector.

Sources: Columns (1) Own computations, from Progresses Prior to 6th Five years Development Planning (1984-88), SPO: 2190, 1990. Columns (2),(3),(4),(5),(6),(7) and (8); Own computations from JICI, various issues.

The number of sectors with negative RCAs in 1988 is 5 as compared to 4 in 1983. The sectors accounting for 82 % of total foreign firms sales[2] during 1985-89 had negative RCA indices in 1988. The remaining three sectors with positive RCAs accounted for only 18 % of total foreign firm sales. The simple correlation

2: Sectoral breakdown of foreign firms' sale in total foreign sales during 1985-1989.

industry:	1	2	3	4	5	6	7	8
foreign share (%):	8.7	3.3	0.6.	17.4	5.4	22.4	15.8	26.3

coefficient between these two variables is -0.452 and insignificant. However, it shows a slight decline when compared with -0.572 for 1984. These results seem to point to a apparent contradiction: on the one hand, the number of sectors and the percent of total foreign sales in those sectors with negative RCA have increased, while on the other hand there is a slight decline in the negative correlation coefficient between foreign shares and RCA . This contradiction may be explained when looking at the changes in RCA values over time.

As compared with 1983, in 1988 foreign firms have a higher export propensity in the automotive industry but a lower one in paper products and the publishing industry, while retaining their higher relative export intensity in three sectors as before. Between the period of 1985-89 82 % of sales and 72 % of exports in 1988 by foreign firms were in industries having a negative RCA index in 1988. Moreover, these industries are characterised with relatively higher capital labour ratios.

Table 4.21 RCA indices, foreign ownership and factor intensities.

Industry	1 RCA 1988	2 ΔRCA	3 REXI 1988	4 RCI 1985-9	5 RLP 1985-9	6 FST	7 AVSI	8 AVCI
1. FBT	0.471	-0.251	0.89	4.62	2.45	9.1	4.07	7.43
2. TWL	0.896	-0.029	1.35	1.95	1.59	4.1	4.14	15.04
3. PPP	-0.564	-0.532	0.29	1.37	1.65	4.5	5.43	38.17
4. CPP	-0.319	-0.920	0.45	0.64	0.81	9.9	8.12	65.36
5. MNM	0.197	0.021	4.33	2.58	1.25	15.0	5.78	28.36
6. BM	-0.085	0.152	1.16	3.62	1.91	34.3	6.48	43.62
7. MMP	-0.654	0.114	0.89	1.51	1.60	20.7	6.00	15.31
8. AT	-0.603	0.016	1.57	1.19	2.24	70.5	6.15	18.72

Sources: Columns (1), (2) and (3); Own computations, from 'Progresses Prior to 6th Five years Development Planning' (1984-88), SPO 1990.
Columns (3), (4), (5), (6), (7) and (8); Own computations from ICI, various issues.

Of the three industry groups with positive RCA indices in 1988, (except that of manufacture of non-metallic mineral products which is a resource intensive industry), the other two sectors, food-beverages-tobacco and textile industries have the lowest capital labour ratios. And the simple correlation coefficient between RCA_{1988} and capital and skill intensity is -0.338 and -0.632 respectively, though insignificant.

Table 4.20 and 4.21 taken together, show that foreign firms preferences for the Turkish manufacturing industry are not based on Turkey's international comparative advantages, but rather on advantages characteristic to multinational enterprises. The commonest characteristic of the bulk of FDI made in the Turkish manufacturing industry, at least until the mid-eighties, is that they have been set up to serve Turkish domestic market rather than taking advantage of Turkish comparative advantages. This we believe partly has been due to government policies towards FDI and partly may be explained by foreign firms sectoral preference suitable to their characteristics.

However, these findings should not be understood as inferring an undesirable sectoral choice by foreign firms. Indeed a specialisation following in the wake of current RCAs is very far from being the most appropriate for Turkey for the following reasons. 1- An increasing specialisation in traditional light industries requiring low-skilled labour would place Turkey in more acute competition with those countries which are now starting their industrialisation and whose main advantage is the availability of unskilled labour. 2- Those industries are increasingly exposed to protectionist measures from developed countries and to agreements on self-limitation of export. 3- Such a specialisation would imply 'freezing' an industrial structure already suffering from serious distortions. 4- There is a need to promote the development of industries with a positive contribution to the modernisation of the industrial structure and with spill-over effects on other sectors. 5- It is important to note that labour skills are a major

factor in the development process, the international specialisation of countries being determined, to a large extent, by their relative labour skill levels.

The identification of desirable areas for specialisation is perhaps better done by looking at changes in RCAs over time. This may provide more acceptable information on the evolution of specialisation in Turkish industry. To capture the changes in RCA between 1984 and 1988, $\Delta RCA = RCA_{1988} - RCA_{1984}$ has been calculated for each industry group as an index of dynamic comparative advantage.

If the sectoral structure of foreign share is negatively correlated with that of static RCAs in 1984 and 1988, it appears to be positively correlated with changes in RCAs between 1984 and 1988. In fact, Table 4.21 shows that about 69.5 % total foreign firms sales between 1985-89 and 68.8 % of their export in 1988 were concentrated in sectors with increasing RCAs indices. At the same time, the foreign share in these sectors was above average at 35 % in the period of 1985-89. Statistical tests, however, do not indicate any significant relation between dynamic RCAs and foreign penetration.

Thus it seems that the bulk of foreign share being in industries with negative RCAs indices is not necessarily an undesirable phenomenon, considering the imbalance in manufacturing productive structures strongly marked by the relative prevalence of traditional sectors in contrast with the situation in developed countries. What available evidence indicates is that, foreign firms might have had a positive effect on Turkish comparative advantages through their establishments in sectors where domestic firms have not been capable of obtaining full benefit from their resource endowments.

4.6: A Further Look at Comparativeness of Foreign and Domestic Firms

The examination of foreign subsidiaries among Turkey's 500 largest industrial establishments has its crucial merits as mentioned above. However, it is arguable whether their relative performance indicators can be representative for all foreign

firms operating in manufacturing industries. Therefore, for our analysis to be more balanced, the examination of foreign firms', (not necessarily in the top 500) characteristics and their performance relative to all domestic firms in manufacturing industry is carried out below.

Tables 4.22, 4.23 and 4.24 provide information about the sectoral orientation, characteristics and conduct of foreign firms. Although foreign firms were initially encouraged by the Turkish authorities to direct their investment towards import replacing activities, there seems to be a substantial emphasis on reversing that trend since 1980. Therefore, a typology based on the market orientation of foreign firms seems more useful. Accordingly we can distinguish between two main groups of industries. (i) exporting industries, (those with an above average export[3] propensity); and (ii) industries oriented towards the domestic market, where the export share of sales is below average. Both groups include sectors with different characteristics, making a further breakdown possible. Exporting industries may be classified into three types;

1- Resource based-industries, where FDI seeks to benefit from the availability of natural resources and similar inputs. These include iron and steel basic industries, non-ferrous metal basic industries, and manufacture of glass and glass products.

2- Traditional labour intensive industries established mainly to take advantage of plentiful supplies of labour: textiles, wearing apparel, leather products and tobacco fall in this category.

3- Modern labour intensive industries usually undertaken by high technology sectors with the aim of perhaps integrating the output of Turkish subsidiaries in to their world-wide strategies. Here it is usual to locate assembling activities and the manufacture of more standardised and relatively unskilled labour-intensive

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[3]: The average manufacturing sector's export/production ratio was 17.8 % in 1988. Accordingly any industry with the same or above export/production ratio were classified as export-oriented, while industries with export/production below that were assigned to invard-oreinted group.

products in Turkey to take advantage of the country's main comparative advantages. This group includes machinery (except electrical), professional goods as well as other chemical products.

On the other hand, domestic-market oriented sectors may be classified according to their technological intensity and characteristics of end products. Two main groups of industries may be considered.

1- Inward-oriented, high medium technology industries, including manufacture of transport equipment, chemicals, petroleum and coal derivatives, metals, rubber, plastic, electrical machinery and non-metallic mineral products. These industries, although relatively R&D intensive, can be characterised by the development of world-wide standardised products and process.

2- Inward-oriented marketing-intensive industries, corresponding to sectors of low technology but requiring strong interrelationships between producers and consumers and high advertising expenditure. Here the packaged food industries is a typical sector where the main ownership advantages of foreign firms lie in their relative marketing techniques. Beverage, paper and paper products, and printing and publishing industries are also included in this category.

Table 4.22 provides an insight into supply characteristics of FDI in the Turkish manufacturing industry. This table's showings can be summarised as follows:

1- According to the classification adapted, 59 % of total foreign sales is in inward-oriented sectors, while export-oriented industries host for a remaining 41 %.

2- With 44.9 % high-medium technology sectors account for the highest proportion of total foreign sales, followed by resource-based industries with 19.8 %, marketing intensive sectors with 14.1 traditional labour intensive sectors with 10.3 % and modern labour intensive sectors with 9.8 %.

3- In terms of foreign sales as a proportion of total domestic sectoral sales, foreign firms are more dominant in rubber, transport equipment, electrical machinery, non-ferrous metal, profession goods and iron and steel industries.

4- As table 4.22 reveals, with the exception of traditional labour intensive industries, a high imports sales ratio is a common feature of all groups of industries. According to a simple average, it is highest in the export-oriented resource based industry group with 37.6 %, followed by export-oriented modern labour intensive group with 28 %, inward-oriented high-medium technology group with 26.7 % and inward oriented marketing intensive group with 20 %.

5- As can be seen from table 4.22, technological intensity of foreign firms as measured by their expenditures on R&D and payments for royalties are minimal in many cases. The glass and glass product, beverages and electrical sectors have the highest (R&D + royalties) expenditures. At the same time, foreign firms in these industries receive relatively higher subsidy and tax refunds, the only exception being the non-ferrous metal industry.

Table 4.23 shows the marketing characteristics of the industrial distribution of foreign firms. The following can be observed;

1- As would be expected, the highest advertising intensity is in inward-oriented marketing intensive and the lowest in the export-oriented resource based industry group.

2- In high-medium technology, resource-based and modern labour intensive industries, where the share of foreign firms account for 74.2 % of the total foreign firms sales, the 8-firm concentration ratios are very high indicating simply the fact that the bulk of FDI is in highly concentrated industries.

3- The nominal rate of protection is especially higher for glass and glass products, transportation equipment, plastic products, and manufacture of fabricated metal products. It seems that certain exporting industries have equally been protected.

4- The highest relative market growth seems to be those of high medium technology and resource-based industries, which account for 64.4 % of total foreign firms sales.

Table 4.24 presents a different typology based on a relative foreign share of

the Turkish manufacturing industry. From the four category classification of Turkish industry based on foreign investment levels, 75.40 % foreign sales is in food, publishing, other chemical, machinery, iron and steel, rubber, glass and glass products, electrical machinery, transport equipment, and other manufacturing industries.

The most striking differences in economic performance identified in Table 4.24 involve marketing intensity, capital intensity, size import intensity and relative wages followed by productivity. Among these what can be considered as negative effects of foreign firms is their higher import sale ratios as compared with domestic firms. Advertising intensity of foreign firms is over five times higher than domestic average in two groups of industry. Interestingly, the relative size of foreign firms is lower in two groups of sectors where the foreign shares of domestic market are lowest. There is clearly a positive relationship between relative firms size and foreign shares of domestic market.

Equally important are those variables such as industrial concentration, protection rate that appear to be higher in sectors where foreign firms are more predominant. The mean values of industrial concentration and protection rates are the highest in those groups of industries where the bulk of foreign investment has taken place.

Based on information provided in the above tables, it may be suggested that foreign firms are superior to domestic firms in most economic performance indicators in the Turkish manufacturing industry. However, this could not be attributed altogether to the technological superiority of foreign firms. Table 4.22 shows that the level of technological complexity of foreign firms, as measured by R&D expenditures and Royalty payments, is low and can best be characterised as standardised. Nonetheless, in comparison with performances of the two groups of firms, what matters is the relative level of complexity and/or accessibility to stream of technology.

Table 4.22 Supply characteristics of industrial distribution of foreign firms[4] in 1988.

Industry	FS	FD	CLR	IMS	R&D	ROY	STS
I-ETLI							
Textiles	8.2	10.0	22	15	0.5	0.001	1.0
Wearing apparel (except footwear)	1.3	4.9	na	na	na	na	na
Leather	0.5	1.1	41	0.00004	0.0004	0.00004	0.0004
Tobacco	0.5	2.2	na	na	na	na	na
II-EMLI							
Machinery (except-electrical)	5.4	18.2	15	43	0.009	0.000007	0.9
Other chemical	4.3	14.3	23	13	0.2	0.00001	0.1
Profession goods	0.1	10.1	na	na	na	na	na
III-ERB							
Iron and steel	14.9	23.7	27	31	0.3	0.3	0.8
Non-ferrous metal	1.4	10.0	47	54	0.003	0.000001	6.5
Glass	3.2	34.9	93	28	5.7	2.0	5.1
IV-IHMT							
Transport equipment	17.0	41.1	25	16	0.1	1.0	1.0
Industrial chemicals	6.3	11.7	44	29	0.6	0.9	0.07
Petroleum and coal derivatives	0.2	5.4	na	na	na	na	na
Rubber	5.1	49.8	37	24	0.000005	1.5	0.7
Electrical machinery apparatus, appliances and supplies	12.0	38.1	21	26	1.6	0.2	1.1
Non-metallic mineral	2.9	8.5	19	36	0.06	0.1	1.8
plastic	0.3	6.1	50	39	0.06	0.000002	0.6
Fabricated metal	1.1	5.9	13	17	0.1	2.1	0.2
V-IMI							
Food	11.0	13.3	21	19	0.09	1.5	1.3
Beverages	0.6	4.9	66	6	0.2	3.2	2.9
Paper & paper products,printing & publishing	2.5	10.2	21	51	0.00006	0.000006	0.4
Other	1.0	31.3	20	4	0.1	0.00004	0.0004

ETLI: Export-oriented traditional labour intensive industries. EMLI: Export-oriented modern labour intensive industries. ERB: Export-oriented resource based industries. IHMT: Inward-oriented high-medium technology industries. IMI: Inward-oriented marketing intensive industries.
FS: Foreign firms' sales as a proportion of total foreign sales. FD: Foreign firms' sales as a proportion of total(foreign + domestic)sectoral sales.
CLR: Net fixed asset per employee (Million TL).
IMS: Imports/sales ratios.
R&D: Research and development expenditure as a percentage of sales.
ROY: Royalties and technical fees paid as a proportion of sales.
STS: Subsidies and tax refund as a percentage of sales.

Sources: SPO's survey of foreign firms operating in Turkish manufacturing industry in 1988; SPO (1990), Report on Foreign Investment (1987-1979).

[4]: FS and FP are estimates based on sectoral distribution of total foreign capital in 1988. All other variables are obtained from the survey as indicated above, and are expressed as percentages except CLR.

Table 4.23 Marketing characteristics of industrial distribution of foreign firms; (%) 1988.

Industry[5]	FS	FD	1	2	3	4
I-ETLI						
Textiles	8.0	10.0	2.5	26	56	1.7
Wearing apparel(except footwear)	1.3	4.9	na	22	56	2.8
leather and leather products	0.5	1.1	1.0	54	46	1.5
Tobacco manufactures	0.5	2.2	na	78	81	1.3
II-EMLI						
Machinery (except-electrical)	5.4	18.2	0.005	65	80	1.7
Other chemical products	4.3	14.3	2.6	70	44	1.0
Profession goods	0.1	10.1	na	97	25	1.6
III-ERB						
Iron and steel basic industries	14.9	23.7	0.1	53	43	2.2
Non-ferrous metal basic industries	1.4	10.0	0.1	67	44	2.3
Glass and glass products	3.2	34.9	1.5	82	153	2.6
IV-IHMT						
Transport equipment	17.0	41.1	0.08	86	115	1.5
Basic industrial chemicals	6.3	11.7	0.4	90	27	2.1
Petroleum and coal derivatives	0.2	5.4	na	98	26	2.5
Rubber products	5.1	49.8	1.4	89	61	1.5
Electrical machinery apparatus appliances and supplies	12.0	38.1	0.2	68	83	1.8
Non-metallic mineral products	2.9	8.5	1.6	52	40	1.5
Plastic products n.e specified	0.3	6.1	0.2	40	114	1.1
Fabricated metal products	1.1	5.9	1.8	46	106	1.1
V-IMI						
Food	11.0	13.3	3.6	47	66	1.3
Beverage industries	0.6	4.9	7.0	85	20	1.0
Paper and paper products printing publishing	2.5	10.2	0.06	64	32	1.2
other manufacturing industries	1.0	31.3	0.1	53	41	1.5

1. Advertising expenditure as a proportion of total sales. Source: From survey of 109 foreign firms.

2. Eight firm concentration ratio in 1987. Source: Cinar (1991).

3. Nominal rate of protection. Source: Togan and Olgun (1989).

4. Sectoral manufacturing market growth rate divided by the OECD sectoral market growth rate (1970-85). Source: OECD (1986) manufacturing data base.

5: See table 4.22 for definition of main industry groups.

Table 4.24 The economic performance of foreign subsidiaries[6] as related to foreign direct investment levels in 1988.

percentage of foreign firms sales as a share of domestic market(FD) (Mean values)	FD≤8.0 (4.36)	8.0<FD≤13 (9.45)	13.0<FD≤25 (16.58)	25<FD (37)
Number of industries	8 [a]	6 [b]	5 [c]	5 [d]
Number of foreign firms	75	61	109	78
FS	4.2	20.4	36.7	38.7
RADV*	4.6	5.0	2.2	5.7
PROF*	3826	619	7077	7082
RBSIZE*	0.41	0.57	1.42	2.36
WCR87*	60	67	58	76
RIMP*	2.3	3.9	1.2	1.9
NRT88*	62	38	53	91
RWAG*	1.7	1.6	1.7	1.9
NPTW*	22	25	28	20
RCAPLR*	3.0	1.8	1.9	4.3
RPROD*	1.11	0.80	1.06	1.81

a. Beverage, Tobacco, Wearing apparel, Leather and leather products, Wood, Petroleum and coal derivatives, Plastic and Fabricated metal products.
b. Textiles, Basic industrial chemicals, Paper and paper products, Non-metallic mineral products, Professional and scientific and measuring and controlling equipment not classified elsewhere and Non-ferrous metal basic industries.
c. Food, publishing, Other chemical products, Machinery (except electrical)and Iron and steel basic industries.
d. Rubber products, Glass and glass products, Electrical machinery apparatus; appliances and supplies, Transport equipment and Other manufacturing industries.

* : Mean values.
RPROD : Relative labour productivity, 1988.
RCAPLR: Relative capital labour ratio, measured as fixed asset per worker, in 1988.
RBSIZE: Relative firm size, measured in terms of sales, in 1988.
WCR87 : 8-firm concentration ratio in 1987.
NPTW : Ratio of non-production workers to total workers in domestic industry 1988.
NRT88 : Nominal rate of protection in 1988.
RADV : Relative advertising intensity, advertising sale ratio of foreign firms in 1988 divided by the same ratio calculated for domestic industry in 1983.
RIMP : Foreign firms import/ sales ratio divided by domestic sales/ import ratio.
PROF : Repatriated Profit by foreign firms in 1987 and 1988.
FS : See footnote 14 for definition.
RWAG : Relative wages, foreign firms wages per worker divided by the same ratio for domestic firms in 1988.

Sources: SIS (1991) Annual Manufacturing Industry Statistics for 1988; SPO (1990) Progresses Prior to the 6th Five Years Development Planning (1984-88); SPO survey of foreign firms 1988; SPO (1990) Report on Foreign investment (1987-1989); Cinar (1991); Togan and Olgun (1989).

6: The variables with initial R indicate relative sectoral measures based on data obtained from the survey of foreign firms and respective domestic industry.

4.7: Conclusion and Policy Implications

The analysis of relative economic performance of foreign and domestic firms presented in this chapter indicates that to some extent the contribution of FDI to the restructuring of the Turkish industrial system has been a positive one, as foreign firms show higher productivity levels and display a greater orientation towards high technology and skill demanding industries than their domestic counterparts. It might be argued that in the absence of FDI inflow and, even allowing the possibility of obtaining the intermediate products supplied by other means, the Turkish industrial structure would be more biased towards traditional sectors.

Moreover, in relation to international competitiveness, there are a number of positive aspects stemming from FDI that can be identified. First, a general dynamism of Turkish exports, particularly in the sectors where Turkey previously did not present exporting capacity (electrical engineering, electronics, chemical) Second, a betterment of Turkish comparative disadvantage in technology-intensive sectors. Third, demonstration effects on Turkish entrepreneurs encouraging them to enter international markets.

Set against these positive features of FDI, may be others which may be less conducive to the kind of economic structure desired by the Turkish authorities. According to the data available the transfer of technology in the form locally undertaken R&D is minimal. On the other hand, in several industries the available evidence suggests that vertical linkages with local companies have been small. In such cases foreign subsidiaries assume and 'enclave' character with great dependence from abroad for the purchase of inputs and with high levels of intra-firm trade.

The integration of Turkey in the international division of labour, led my *multinational* companies seems to have pointed to two possible orientations. On the one hand, it promoted exports and enabled the setting up of new

manufacturing activities with positive employment effects. On the other, it has brought about a concentration of FDI branches requiring low-skilled labour (textiles, assembly of car and electronic components), most of them with scarce links with the local productive system.

It may be argued that the relatively higher level of advertising by foreign firms may have been used to inhibit the development of local competitors. There is no indication whatsoever of any substantial R&D being undertaken by foreign subsidiaries nor does there seem to be much royalty and technical fees paid out by these affiliates of multinationals.

It cannot be concluded that the shortcomings identified in the characteristics and conduct of foreign affiliates should be exclusively envisaged as a result of their foreigners; a share of responsibility should also be attributed to the policies pursued by the Turkish government. The high trade protection and the regime of import-substitution industrial policies helped to promote the creation and sustenance of monopolistic and oligopolistic situations, which protected low efficiency and enabled foreign affiliates to gain extra rent thorough the high barriers to entry facing potential competitors. The automotive industry is only the most obvious one in this case.

The interest of MNEs investing in Turkey do not correspond to the national economic goals. In another words, the inflow of capital, technology and management skills through FDI does not necessarily guarantee a benefit to the host economy in the long run, since corporate policies may be in conflict with the host country's objectives. On the other hand, policy makers should be aware of the distinctive nature of MNEs and of several differences in the conduct and goals of foreign affiliates vis-a'-vis their domestic firms. Therefore, for countries to benefit fully from FDI, a conscious recognition of the need to operate the appropriate policies required. These should take into account Turkey's economic goals, the main characteristics of international investment and the grounds where the

potential positive contribution of FDI is more likely to become effective.

In particular, FDI should be directed mainly to activities demanding relatively skilled labour, since it is unlikely that in the long run Turkey's comparative advantages will lie in the low -wage sector. Taking into account the remarks outlined above, some suggestion on policy issues may be put forward.

1- It is crucially important that a stronger connection between FDI and industrial policies is promoted, both to maximise allocate efficiency and to stimulate the desired conduct and strategy of foreign affiliates. A reappraisal of the definition of priority sectors for FDI might be undertaken in accordance with the objectives of industrial policy; to identify the industries where investment is most likely to play a complementary and dynamising role vis-a'-vis domestic investment. In turn industrial policy should take account of the sectoral penetration of FDI and the distinctive characteristics and behaviour of foreign affiliates. Industrial policy should also allow and encourage the positive spill-over effects of foreign affiliates on the domestic system, namely thorough training of Turkish personnel, subcontracting arrangements with local enterprises, and technological support both to their suppliers and to their customers.

2- Competition policy should be more actively pursued to safeguard the consumer against the anti-competitive practices of foreign affiliates, to prevent the misuse of monopolistic or oligopolistic market power, and to forestall predatory take-overs.

CHAPTER FIVE

An Empirical Analysis of the Determinants of FDI in Turkish Manufacturing Industry

5.1: Introduction

Empirical testing of theories of FDI associated with market imperfection have used three approaches. The first approach is rather descriptive in its nature and comprises studies that have compared multinationals directly with domestic enterprises in their home country or conversely compared characteristics of MNEs affiliates and indigenous campanies in the host country[1].

The other two approaches have used industry-level data to identify the characteristics of those sectors in which the presence of multinationals is greater than in others. The usual strategy of research is to correlate the prevalence of MNEs in an industry with the specific structural characteristics of that industry. The reasoning as succinctly put by Caves (1982)is simple: 'If attribute X promotes the formation of MNEs, and successful firms in industry A have a lot of X, then MNEs should be prevalent in industry A'(p. 8).

The studies of the second approach have examined the foreign investment propensities of industries in the capital exporting country, correlating these with the source of monopolistic advantages suggested by industrial economics[2]. The third approach is concerned with conducting similar exercises from the side of the capital importing country[3]. The main findings of these studies are that foreign control (usually measured, by the share of industry sales accounted for by foreign enterprises) were higher in industries (both in home and in host countries)

1: See introduction to chapter 4, (p.144).

2: See Baldwin (1979), Dunning and Buckley (1977), Horst (1972b), Wolf (1977) and Lall (1980).

3: See Caves (1974a), lall (1985), Owen (1985) and Kim (1987).

characterised by high concentration, high capital requirements, high R&D intensity, and high advertising expenditure.

Empirical works aimed at testing the theory of internalisation have been relatively few. Notably Buckley and Casson (1976), Grubaugh (1987), and Davidson and McFetridge (1984), have made useful attempts in this direction[4]. Their results are similar to those findings of previous studies. Buckley and Casson also found a significant relationship between multinationality, growth and profitability in R&D intensive industries. Using a different methodology, Davidson and McFetridge found that the probability of internal transfer across nations is higher the newer and more radical the technology involved in transaction. They also found that the probability of a transfer to be internalised was greater the larger the transferor's resources devoted to scientific R&D.

In this chapter, we try to identify the firm and industrial characteristics of FDI made in Turkey by MNEs, by analysing the determinants of foreign shares of manufacturing output in Turkey in 1987-1988. There are two main goals that this study tries to accomplish. Firstly, to find out whether the theories that have been advanced to explain the determinants of foreign shares of manufacturing industries in advanced countries are relevant to explaining the same phenomenon in a developing country. While, most of the existing studies of the determinants of FDI have focused on advanced industrial countries, there are only a few such studies undertaken for developing countries[5], and to the best of my knowledge none for Turkey. It may be that the factors which cause a foreign firm to enter industrially backward, technologically unsophisticated, and relatively low income markets are not the same as those in industrialised countries. Moreover the interventionist

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[4]: Attempts have also been made to incorporate internalisation into trade theories, see Either (1986), Helpman (1984) and Markusen (1984).

[5]: See Lall (1985) study of the determinant of FDI in Indian manufacturing industry.

trade regimes exercised by most developing countries may affect the resulting pattern of foreign presence in manufacturing industry. It is therefore important to carry this testing over and adapt it for the equally important problem of explaining the determinants of foreign direct investment in developing countries. Secondly, following Dunning's (1981) suggestion, the determinants of foreign direct investment have been classified according to whether these involve ownership, internalising or location-specific advantages. Since a proper empirical testing of the alternative theories would need more complex and detailed statistical data that is almost non-existent in a developing country, this can only be done rather approximately with available data. Nevertheless, the results yield some interesting conclusions and in qualitative terms give a fairly reliable guide to the main determinants of FDI in the Turkish manufacturing industry.

It is important to note that, although it is possible to distinguish between different approaches at a theoretical level, it has proven rather difficult to sustain this when attempting to test alternative approaches. The major reason behind this was explained in the theoretical discussion concerning the nature of the question that each approach sets itself to explain. Closely related to this is the difficulty in testing, the internalisation approach in its proper. Since the prediction of both theories concerning the role of technology in the internationalisation of firms is similar, it is rather arbitrary to assign variables measuring technology to either approaches. Grubaugh (1987) in an attempt to test three theories of FDI assigns the variables such as R&D intensity, advertising intensity and product diversity to internalisation theory, firm size and product diversity to market imperfection approach and labour intensity to capital arbitrage theory . On the other hand Owen (1985) in his empirical work to find out the determinants of FDI in French industry has classified his variables as such that R&D intensity and advertising intensity represent the ownership-specific advantages while the firm size variables have been included as proxies for internalising advantages.

5.2: Independent Variables and Their Definitions

TECHNOLOGY: The most pronounced advantage of MNEs comes from the intangible assets that have been acquired by firms. Given the high transactions cost involved with selling these kind of assets in markets, the firm possessing such assets can maximise their return on these assets if only they themselves engage in production activities abroad. Thus, firms possessing intangible assets would be more likely to invest abroad than those which do not. Since we are investigating from the side of the capital importing country, it is assumed that investment abroad would have very similar industrial features to those at home. Therefore, we expect an association to exist between the presence of foreign firms and the intangible assets exploited by them. And at the industry level, we expect to find greater presence of foreign firms in industries where intangible assets are deemed to be important. Although intangible assets by their nature defy any direct measurement, their prevalence is revealed by the expenditures that firms make for the purpose of producing them. As indicators of these assets, spending on research and development and royalties payments made by firms classified to an industry are introduced.

R&D: The traditional measure of R&D expenditure is as a proportion of sales. However, R&D has certain disadvantages in the case of developing countries; it is almost certain that globally operating multinationals spend more on R&D compared with purely national firms, but it may not be the case with individual affiliates of MNEs and their local counterparts. This is because MNEs tend to centralise their R&D activity close to their headquarters, given its strategic importance for their international operation. It may also be that Multinationals may deploy different advantages in particular host countries according to the relative strength of local enterprises. Since it is well known that the level of R&D expenditure is very low in developing countries, an affiliate of a MNE may not

find it necessary to spend considerably on R&D in order to compete with local firms, as it has direct access to the parent's R&D activity when it needs to do so. Thus, it can be argued that the level of R&D undertaken by affiliates of MNEs in the Turkish manufacturing industry may be insignificant as compared with their share of market. To supplement this therefore, we introduce another variable which is more directly related to international levels of technological sophistication.

ROY: Foreign royalties and technical fees paid by the firms respectively deflated by sales. The level of technology imports or purchases by each firm is probably a better index of its technological complexity than its stated R&D expenditure. These two measures are alternatives. It is expected that at least one of them should be positively related to the foreign shares.

ADVERTISING INTENSITY: Although ADV as marketing intensity together with advanced technology has played a prime role in the growth of MNEs expansion in industrialised countries, it may be less influential in developing countries. Developing countries are characterised by low income levels, relatively unsophisticated tastes and important cultural differences from consumption patterns in developed countries. On the other hand, that ADV does not properly capture marketing efforts in non-consumer goods industries may understate its importance in this analysis. Moreover, it has been suggested by Kumar(1991) that the current levels of ADV expenditure can not represents the scale of advertisement which has lagged returns. MNE affiliates are able to internalise the benefits of a part of the accumulated advertising done by their parent and associate firms the world over. Hence, the implication is that, MNE affiliates, current advertising expenditure cannot capture this, and yields proportionally higher returns than that of local firms. Therefore while the received theory regards this as a significant and positive sign, we expect that in our case, it may not be so. Two

variables are constructed respectively to measure firm and industry-level ADV intensity.

ADV: Advertising expenditure as a percentage of sales per foreign firm.

RADV: Relative sectoral advertising ratio, sectoral advertising / sale by foreign firms divided by domestic sectoral advertising intensity.

CAPITAL INTENSITY: MNEs are expected to be attracted into activities where capital-labour ratios are high. As they stem from capital intensive industries, they may have an advantage in providing large minimum capital requirements and transfer relatively high capital -intensive techniques to the host country concerned. The expected sign of this variable is also positive.

RCAPLR: Relative capital intensity, foreign firms capital labour ratio divided by domestic c firms capital labour ratio.

SCALE: In industries marked by scale economies and multiplant operations the requirement of large firm size is expected to give MNEs an advantage in the Turkish manufacturing industry. Two variables representing scale are expected to have a positive and significant effect on MNEs presence.

RSIZE: Relative firm size, average foreign firm size divided by average biggest domestic firm size.

SIZE: Net fixed asset per foreign firms.

CONCENTRATION: The theory suggests that MNEs will tend to go in industries where a high level of industrial concentration prevails. Because, while multinational firms have an advantage in entering a market guarded with entry barriers, the indigenous firms face some entry barriers. Therefore, a positive and significant relation is expected between foreign shares of MNEs and the

concentration variable.

CONR8: Industrial concentration ratio, sales by 8 biggest firms divided by total sectoral sale.

ENTREPRENEURIAL AND HIGH SKILL: MNEs are found to be prominent in sectors requiring both advanced managerial and organisational skills as well as high production and technical skills. It is contended that foreign firms will have advantages over local firms in industries where the problems of management and co-ordination require a high order of such skills. The expected sign of this variable is positive.

MSKIL: High skill intensity, sectoral ratio of non-production workers as a proportion of production workers.

PROFITABILITY: Partly and indirectly as an indirect indicator of managerial efficiency, and partly reflecting the effect of entry barriers which are closely linked to the various advantages of MNEs, profitability is expected to be positively related to the foreign shares of the Turkish manufacturing industry. Two variables are introduced to measure the predicted relation between foreign share and firm and sectoral profit ratios.

PROF: Net profit as a percentage of fixed assets per foreign firm.

SPROF: Domestic sectoral profit capital ratio.

MARKET GROWTH: Given the inward-oriented characteristics of FDI in the Turkish manufacturing industry as discussed in chapter 3, we may expect to see higher foreign shares in dynamic and faster growing sectors.

RMG: Relative market growth rate, Turkish sectoral market growth rate as proportion of OECD sectoral market growth rate over the period of 1970- 1985.

TRADE BARRIERS: In a developing country, like Turkey where the conditions for licensing advanced technology may not be favourable, high tariff rates may be a major determinant of FDI. Even after liberalisation of trade measures implemented during the 1980s, the average nominal protection is still very high. It was 85.49 % in 1983 and 68.82 % in 1988 for the manufacturing industry. Consequently, we expect that a positive relation between sectoral protection rates and the foreign shares.

NRTP: Sectoral nominal rate of protection in 1988.

ERTP: Sectoral effective rate of protection in 1988.

INCENTIVES: Although the theory does not assign any important role to the financial incentives provided by the host government to attract FDI in domestic industry, we include the following variable to measure the effect of some of this financial incentives on the share of foreign firms.

GINC: Government subsidy and tax refund as a proportion of sales, for foreign firms.

In the light of above discussion, the independent variables used in our model can be divided in to the following categories.

1- The variables measuring scale (RSIZE, SIZE), relative capital intensity (RCAPLR), advertising intensity (RADV, ADV), are those representing market imperfection approach.

2- Sectoral market growth (RMG), government financial incentives (GINC) and sectoral profit ratio (SPROF) are representing locational variables.

3- Technological intensity variables (R&D) and (ROY) are representing the common hypothesis in both internalisation and market imperfection.

4- Market concentration (CONR8), relative skill (RSKIL) and managerial skill requirement (MSKIL) are associated with both market imperfection and location-specific hypothesis.

5- Sectoral rate of protection (NRTP, ERTP) is common to locational and internalisation hypotheses.

The above approximate taxonomy is useful in distinguishing between the different hypotheses advanced and more importantly it allows us to see the overlap between them.

5.3: The Basic Approach

The specification of the empirical model is derived from three of the sets of hypotheses outlined above in order to explain the causes of FDI in the Turkish manufacturing industry. The initial strategy adapted in this study is to use multiple regression techniques and we have transformed both dependent and independent variables into logs and used OLS estimations. The log specification as applied was preferred, first, because it reduced the problem of heteroscedasticity. Second, the result obtained from the log-transformation were more reliable and preferable in all accounts including better performance and better diagnostic tests results. The statistical analysis has been conducted at the following levels.

I-Firm Level. The dependent variables in the analysis below are the foreign subsidiary sales as a share of the respective industries to which the firm belongs. The independent variables at firm level were calculated from the data on individual firms contained in the sample. While, industry-level independent variables included here were constructed from the same sources as explained below. At this level, initially variables were calculated as averages of 1987-1988 for a sample of 87 foreign firms. The number of firms for which the data were available in 1988 was 109. Separate regressions were also run for this group of 109 firms, among which 88 were of OECD countries, and 21 from other developing countries.

II-Industry Level. First we have aggregated all foreign firms, (109) in our sample into 20 two and three digits (ISIC CLASSIFICATION) industries. Second, to distinguish between foreign firms from developed countries and foreign firms from developing countries, foreign firms from developed countries (88) have been aggregated separately. The independent variables at industry level concerning Turkish manufacturing industry were calculated from the annual manufacturing statistics, published by State institute of statistics SIS,(1988, 1991). The dependent variable is the foreign subsidiary sales as a percentage of output by all establishments in the public sector and establishments with 25 or more persons engaged in the private sector in 1988. The regressions were run for each group separately.

5.4: Statistical Results

In Table 5.1 below we report the results of OLS estimation of determinants of FDI in the Turkish manufacturing industry for the average of the years 1987-1988 using a combination of firm and industry level variables. The overall results are satisfactory both in terms of expected signs and the significance of the variables and the set of misspecification tests applied[6].

The table reveals that variables measuring technological intensity R&D and ROY not only fail to achieve any level of significance but they always, except ROY in equations (1) and (4), carry wrong signs. The poor showing of these two variables confirms that the technological complexity of foreign firms as measured

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6:With all equations the reported diognostic tests are donated as;
A:Langrage multiplier tests of residual serial correlation.
B:Functional form, Ramsey's RESET test sing square of the fitted values.
C:Normality, based of the skewness and kurtosis of residuals
D:Heteroscedasticity, based on the regression of squared residuals on squared fitted values.
E:Predictive failure, a test of adequacy of predictions (Chow's second test
F:Chow test, test of stability of rgression coefficients.

here do not indicate any significant effect on their domestic market shares. These showings are compatible with Vernon's early writings on the nature of foreign direct investment in less developed parts of world.

Marketing intensity variable ADV which is one of the most powerful advantages of MNEs performs slightly better than those of technological intensity, reaching 10 % significance level in equation (3). Though the ADV coefficient is relatively small, it carries the expected sign in all equations reported. Bearing in mind the previous explanations, (Kumar 1991) that the current level of advertising by MNEs may not adequately capture the full scale of this variable, this showing may suggest that marketing advantages of foreign firms does play a role in their share of Turkish industry.

Advanced managerial-organisational skill and relative high levels of production and technical skill variables MSKIL, RSKIL and PROF produced positive and significant results as expected. These results suggest that foreign firms tend to go into industry where high managerial and technical skill requirement is of a high order. The consistently significant showing of these variable indicate that foreign firms have considerable advantages in terms of entrepreneurial resources in Turkish manufacturing industry as compared with their local counterparts.

Scale intensity as measured by relative RSIZE or absolute size MSIZE turns to be the most dominant determinant of FDI throughout all equations. It seems that the size advantage of MNEs gives them a marked edge in undertaking large, scale intensive investments. This finding is very much in line with the other studies notably Caves' (1974a) investigation of the determinants of FDI in Canada and Britain and Lall's (1985) for India.

Relative capital intensity variable RCAPLR shows positive and significant effects on foreign shares. It turned in consistently significant results and suggests that foreign firms have a strong advantage in sectors requiring relatively high capital intensity.

Country specific variables, RMG, CONR8 and ERTP are all consistently significant in the equations shown. Government incentives GINC in the form of subsidy and tax refunds, though with a relatively small coefficient, turns in positive but significant results only in equations (3) and (4). It was not expected to have a considerable influence on the extent of the foreign share of the manufacturing industry. We may infer from this that government incentives may have some desired effect on attracting foreign firms into domestic industry. However, it was not significant when entered with SIZE (either absolute or relative) as in equations (1) and (2). Of course it may provide an added impetus to foreign firms willingness to enter into domestic market but should not be considered as one of the crucially important factors as it does not show greater consistency.

The relative sectoral market growth rate RMG, has turned in as expected significant results indicating that foreign firms tend to go in relatively faster growing sectors. Since RMG measures the sectoral market growth rate of Turkey relative to that of OECD countries over the period of 1970-1985, it corresponds, for most of the period, up to 1980s, to the import-substitution era of Turkish industry. This suggests that the faster growing sectors may have also been the most protected sectors in which both foreign and domestic firms alike have enjoyed the absence of international competitive pressure. Therefore, it should be no surprise that the 8 firms concentration ratio CONR8, sectoral protection rate, whether nominal (NRT) or effective (ERT), alongside with RMG, show significant effects on the extent of foreign shares in the manufacturing industry. Our results show that foreign firms are predominant in highly protected and concentrated sectors where foreign firms have advantages the local firms may face substantial entry barriers.

The number of firms for which data were available to estimate our model in 1988 were 109. With the increased number of observation available now, we run

separate regressions firstly, to get greater confidence in our estimations and secondly, to investigate if there is any difference in the determinants of FDI in the Turkish manufacturing industry in relation to firms from the OECD and other developing countries. However, with a rather small (21) number of foreign firms from other developing countries, our results could not be taken too far as to whether two groups of firms do actually exploit different set of advantages in Turkish industry. Nonetheless, we believe our results may shed a little light on this.

The results of a whole sample (109) are given in Table 5.2. Again the overall results are very satisfactory, as a 70 % variation in the foreign shares is explained by our model. The variables in equations (1) and (2), with exception of R&D variable, carry the expected signs and reach significant levels. Both equations reported in Table 5.2 pass all reported diagnostic tests which are presented with results.

The overall picture we get from Table 5.2 is very similar to that reported in Table 5.1 and therefore does not need extensive comment here. However, the variables representing the technological and marketing intensity turned in slightly different results in that; Advertising (ADV) was always with a negative sign and was dropped. R&D reaches a significant level in equation (1), but carries the wrong sign in both equations. The (ROY), royalties and technical fees paid abroad as a percentage of sales seems to have improved. It carries the expected sign and reaches the significant level (5%) in equation (2). Equation (2) differs from (1) in that it does not include the size variable. The explanatory power of the model decreases sharply to 40 %, but all independent variables except ROY remain as expected with very little variation.

The other variable that turned in an unexpected result and was consequently dropped was GINC (subsidies and tax refund as a proportion of sales).

It seems reasonable to suggest that the true scale of variables like GINC,

ROY, R&D and ADV may only inadequately be captured in a one or two year period. But with the data available at this stage it is not possible to have better measures that may account for their whole influence on the extent of foreign shares.

Table 5.3 shows the results of our model concerning two groups of firms. Equations (1) and (2) give the results of our estimation for firms from OECD states. Equation (3) is for the firms of developing countries. Again the model estimates fairly well the variation in foreign shares in all equations. And all reported diagnostic test statistics indicate no serial correlation, non-normality or functional form misspecifications of the model.

To find out if there is any difference between the two groups of firms, Chow's first test was used initially. The sample was split into two groups, 88 and 21. According to this test, the model was stable at the 5 % level of significance. In other words, the hypothesis that all parameters are the same between two groups of firms was not rejected. This is shown with equation (1) as F:CHI-SQ(10)= 14.046. The critical CHI-SQ table value at 5 % is 18.31, which is higher than the calculated value. However as we dropped the SIZE variable in equation (2) and re-tested the model for parameter stability between the two groups we find that CH-SQ(9)= 17.409 which is greater than CHI-SQ critical table value of 16.92 at 5 % level of significance, indicating that all parameters are not the same between the group of firms any longer.

Equation (3) shows the estimation results for the group of firms from developing countries. Although it explains 80 % of variation in dependent variable and passes all the diagnostic tests, we should be careful not draw far-reaching conclusions from it. Nonetheless, it is useful to look at the points of possible difference between the two groups of firms. From equation (3), the following points can be observed: (a)- Nominal protection rate NRTP turns in negative and insignificant results. One explanation may be that foreign firms of other developing

countries tend to go into sectors where Turkey has had a relative comparative advantage, since that sector protection rate is relatively low. This explanation is in tune with the theoretical reasoning that the sets of advantages that this group of firm possess may be those suited to more traditional type industries. (b)- Both skill variables, relative skill RSKIL, and managerial skill, MSKIL though positive, produce insignificant results. This would suggest that this group of firms seems to shy away from sectors where high organisational and technical skill are of paramount importance. A close inspection of data reveals that this group of firms are indeed concentrated in sectors like food, textile, wood & products, pottery china and earthware and other manufacturing sectors of industry. (c)- Concentration ratio CONR8, also turns out to be insignificant in equation (3). This result also confirms that this group of firms tend to stay out of highly concentrated Turkish industries. As far as our results show we can say that foreign firms from developing countries do not have advantages in entering sectors where there is a high level of concentration, where high organisational and relatively higher technical skills are of considerable importance, and those are the industries that have usually been protected heavily. These are the main distinguishing variables that differentiate the two groups of firms. On the other hand, R&D turns in insignificant but positive results.

The remaining variables, SIZE, RCAPLR, and RMG have turned out not differently from the equations (1) and (2).

Table (5.1) The determinants of FDI in Turkish manufacturing industry, 1987-1988.

	Equations[a]			
Independent variables	1	2	3	4
INT	-14.63	-18.76	-16.71	-8.20
MSKIL				1.45[c]
				(2.16)
RSKIL			0.65[c]	1.03[b]
			(2.46)	(4.07)
RSIZE	0.77[b]	0.85[b]		
	(8.94)	(22.32)		
RMG		0.64[c]	1.24[d]	
		(2.39)	(1.81)	
CONR8	0.80[c]	1.70[b]	2.07[b]	
	(2.14)	(9.55)	(4.59)	
ERTP	0.084[b]	0.065[b]	0.62[c]	
	(3.39)	(5.01)	(1.94)*	
RCAPLR		0.094[c]	0.33[b]	
		(2.03)	(2.61)	
PROF	0.12[b]			
	(4.93)			
ADV	0.035	0.018	0.06[c]	0.048
	(1.53)	(1.57)	(1.90)	(1.43)
ROY	0.011	-0.019		0.051
	(0.55)	(1.78)		(1.65)
R&D	-0.029			-0.024
	(1.52)			(0.89)
GINC	0.004	0.005	0.075[b]	0.095[b]
	(0.20)	(0.57)	(3.13)	(3.76)
R^{-2}	0.70	0.92	0.49	0.36
F-s F(8, 78)[+]	26.74	134.27	13.00	9.27
DW-s	2.02	2.00	1.77	1.70
A:CHI-SQ(1)	0.043	0.001	0.971	1.879
B:CHI-SQ(1)	0.440	0.225	0.704	0.297
C:CHI-SQ(2)	3.294	19.160	0.246	0.901
D:CHI-SQ(1)	0.686	0.031	0.743	0.155
Number of obs.	87	87	87	87

[a]: Figure in parentheses are t-values. [b]: Significant at 1 % level.
[c]: Significant at 5 % level. [d]: Significant at 10 % level. *: NRTP [+]: Respective F-values for equations 3 and 4 are; F(7, 79) and F(6, 80).

Table (5.2) The determinants of FDI in Turkish manufacturing industry, 1988.

	Equations[a]		
Independent variables	1		2
INT	-20.74		-21.54
MSKIL	0.74[c]		0.88[d]
	(1.99)		(1.69)
RSKIL	0.45[c]		0.68[c]
	(2.05)		(2.19)
SIZE	0.74b		
	(10.02)		
RMG	1.58[b]		2.27[b]
	(2.69)		(2.74)
CONR8	0.92[c]		1.87[b]
	(2.27)		(3.33)
NRTP	0.60[d]		1.32[b]
	(1.87)		(2.99)
RCAPLR	0.17[b]		0.15[c]
	(3.76)		(2.27)
ROY	0.015		0.035[c]
	(1.25)		(2.03)
R&D	-0.104[b]		-0.062
	(3.33)		(1.41)
R^{-2}	0.70		0.40
F-s F(9, 99)	29.32	F(8, 100)	10.23
DW-s	1.93		1.84
A:CHI-SQ(1)	0.093		0.565
B:CHI-SQ(1)	1.658		1.847
C:CHI-SQ(2)	0.227		1.960
D:CHI-SQ(1)	1.551		0.832
Number of obs.	109		109

a: Figure in parentheses are t-values. b: Significant at 1 % level
c: Significant at 5 % level. d: Significant at 10 % level.

Table (5.3) The determinants of FDI in Turkish manufacturing industry related to two groups of firm; OECD and other developing countries, 1988.

	Equations[a]		
Independent variables	1*	2*	3**
INT	-21.68	-23.04	-16.44
MSKIL	0.83[c]	1.18[c]	0.62
	(2.07)	(2.15)	(0.60)
RSKIL	0.67[c]	1.08[c]	0.075
	(2.12)	(2.51)	(0.24)
SIZE	0.70[b]		0.66[b]
	(8.48)		(3.97)
RMG	1.48[c]	2.30[c]	4.20[b]
	(2.18)	(2.48)	(3.32)
CONR8	0.90[c]	1.64[b]	1.27
	(2.12)	(2.85)	(1.03)
NRTP	0.71[c]	1.50[b]	-0.28
	(2.00)	(3.14)	(0.39)
RCAPLR	0.19[b]	0.15[c]	0.15[d]
	(3.35)	(1.99)	(1.82)
ROY	0.004	0.018	0.050
	(0.29)	(0.97)	(1.73)
R&D	-0.13[b]	-0.11[c]	0.040
	(3.94)	(2.48)	(1.73)
R^{-2}	0.70	0.43	0.80
F-s F(9, 78)	23.91	F (8, 79) 9.43	F(9, 11) 10.22
DW-s	1.89	1.81	1.95
A:CHI-SQ(1)	0.076	0.583	0.011
B:CHI-SQ(1)	0.148	0.087	1.650
C:CHI-SQ(2)	0.193	2.316	3.000
D:CHI-SQ(1)	1.371	0.927	0.049
E:CHI-SQ(21)	19.102	24.097	
F:CHI-SQ(10)	14.046	CH-SQ(9) 17.409	
Number of obs.	88	88	21

a: Figures in parentheses are t-values.
b: Significant at 1 % level.
c: Significant at % level.
d: Significant at 10 % level.
*: Firms of OECD countries.
**: Firms of other developing countries.

Table (5.4) The determinants of FDI in Turkish manufacturing industry; industry level 1988.

	Equations[a]	
Independent variables	1	2
INT	-5.13	-3.35
MSKIL	1.35[c]	2.17[b]
	(2.83)	(4.73)
RSIZE	0.89[b]	0.81[b]
	(9.12)	(6.02)
RADV	0.056[d]	0.081[c]
	(1.95)	(2.64)
RMG	1.76[b]	2.08[b]
	(3.59)	(3.81)
CONR8	0.75[c]	
	(2.28)	
NRTP		0.66[c]
		(2.28)
RCAPLR	0.32	
	(1.65)	
SPROF	0.23[b]	0.27[b]
	(3.41)	(3.94)
R^{-2}	0.90	0.85
F-s F(7, 12)	26.05 F(6, 13)	19.01
DW-s	1.98	2.03
A:CHI-SQ(1)	0.303	0.758
B:CHI-SQ(1)	2.505	0.004
C:CHI-SQ(2)	0.814	0.182
D:CHI-SQ(1)	0.108	0.020
Number of obs.	20	20

a: Figures in parentheses are t-values.
b: Significant at 1 % level
c: Significant at 5 % level
d: Significant at 10 % level

Table 5.4 presents the main findings of OLS estimations at industry level for both groups of foreign firms. The overall results are very satisfactory both in terms of the explanatory power of equations and of the expected signs and the significance of independent variables. Both equations reported diagnostic tests results confirm of no serious existence of serial correlation, misspecification of functional form, non-normality and heteroscedasticity. As can be seen, the explanatory power of the model has increased to 90 % in the first equation.

Since there was not published data available on R&D and ROY at an industrial level, they do not appear in equations reported in Table 5.4. A new variable was included to present the domestic sectoral profit ratio, SPROF in 1983. This may be a fair indicator showing whether foreign firms tend to be in relatively more profitable sectors of the manufacturing industry.

Although we have suggested a number of reasons that may tend to eliminate the significance of advertising intensity in the Turkish manufacturing industry, relative advertising intensity variable RADV, turned out, as predicted by the theory to hold the right sign and to be significant. This seems to suggest that, foreign firms tend to go in activities where marketing intensity may be important, and that their ability to differentiate products provide them with significant advantages in the Turkish manufacturing industry relative to domestic firms. And this has a positive effect on their share of the Turkish manufacturing market, to the extent that this can be captured by RADV alone.

It should be noted that variable proxying relative capital intensity RCAPLR, at industry level, though not significant has achieved the expected positive sign. This may imply that capital intensity is not a significant source of advantages for foreign firms as Lall (1980) pointed out in an empirical investigation of the sources of advantages in the US manufacturing industry's foreign involvement. Lall (1985) in a separate investigation of determinants of FDI in the Indian manufacturing industry also did not find capital intensity of foreign firms to be

playing a significant role in their share of Indian markets. However, we believe that it is an important determinant of FDI in Turkish industry since it has been consistently positive and significant at a more disagregated firm level.

Of the skills variables, RSKIL does not appear in Table 5.4 as it was not significant in any modification of the model applied and was dropped consequently. The MSKIL however, turned in the expected positive results and is significant in both equations at the industrial level of analysis.

The other slight modification was to include the sectoral profit ratio defined as profit/capital, and it produces results both positive and significant in both equations at 1 % level. It confirms that foreign firms are predominant in relatively high profitable sectors of Turkish manufacturing industry.

The rest of the variables; relative size (RSIZE), relative market growth (RMG), concentration ratio (CONR8) and nominal sectoral protection rate (NRTP) have all turned in as expected positive and significant results.

It would have been desirable to conduct this analysis at a more detailed industry level, but at this stage there is no relevant data to enable us to do that. Since the number of firms in our sample contain more than one third of all foreign firms operating in the manufacturing industry of Turkey in 1988, and the fact that the most of long-established firms are included in our sample make the results applicable to a great extent to all manufacturing industry.

5.5: Discrimination of Alternative Theories of Foreign Direct Investment

The model adapted to explain the determinants of FDI in the Turkish manufacturing industry draws upon various hypotheses developed by the theorists of foreign direct investment. A reassessment of alternative theories as applied here in our model will shed some light on the their relevance to the explanation of the determinants of FDI in Turkey.

In the light of the theoretical discussion we divided the independent variables

used in our model into the following categories:

1- The variables measuring scale (RSIZE, SIZE), capital intensity(RCAPLR), advertising intensity (RADV, ADV), are those representing market imperfection approach.

2- Sectoral relative market growth (RMG), sectoral profit ratio (SPROF) and government financial incentives(GINC) are locational variables.

3- Technological intensity variables (LFRDR, LROY) are those representing the common hypothesis in both internalisation and market imperfection.

4- Market concentration (CONR8), relative skill (RSKIL) and managerial skill requirements (MSKIL) are associated with both market imperfection and the location-specific hypothesis.

5- The Sectoral rate of protection (NRTP, ERTP) is common to the locational and internalisation hypotheses.

The above approximate taxonomy is useful in distinguishing between the different hypotheses advanced and more importantly it allows us to see the overlap and interaction between them. An inspection of the results produced by our estimates of the determinants of FDI in Turkish manufacturing industry is duplicated below with ranking of the variables relative importance.

Table 5.5 The relative importance of variables as related to the test of hypotheses, industry level; from Table (5.4)
Equation 1

Variables	Beta coefficient	Rank	Sign	t-ratio	rank
RSIZE	0.070	4	E	9.12	1
MSKIL	0.520	2	E	2.83	4
RMG	0.694	1	E	3.59	2
RCAPLR	0.050	5	E	1.65	7
RADV	0.001	7	E	1.95	6
CONR8	0.201	3	E	2.28	5
SPROF	0.012	6	E	3.41	3
Equation 2					
RSIZE	0.087	4	E	6.02	1
NRTP	0.153	3	E	2.28	6
RADV	0.002	6	E	2.64	5
RMG	0.912	2	E	3.81	4
MSKIL	0.797	1	E	4.73	2
SPROF	0.015	5	E	3.94	3
Firm level(1987-88); from Table (5.1) Equation 1					
RSIZE	0.033	2	E	8.94	1
CONR8	0.151	1	E	2.14	4
ETRP	0.001	4	E	3.39	3
PROF	0.002	3	E	4.93	2
ADV	0.0004	5	E	1.53	5
ROY	0.0001	7	E	0.55	6
R&D	-0.0003	-	NE	1.52	-
GINC	0.0002	6	E	0.20	7
Equation 2					
RSIZE	0.016	3	E	22.32	1
CONR8	0.152	1	E	9.55	2
ETRP	0.0004	5	E	5.01	3
RMG	0.087	2	E	2.39	4
RCAPLR	0.0021	4	E	2.03	5
ADV	0.0001	6	E	1.57	6
ROY	-0.0001	-	NE	1.78	-
GINC	0.00003	7	E	0.57	7

Firm level (1988); from Table (5.2)
Equation 1

NRTP	0.082	4	E	1.87	7
RMG	0.397	1	E	2.69	3
SIZE	0.023	6	E	10.02	1
CONR8	0.161	3	E	2.27	4
RSKIL	0.042	5	E	2.05	5
MSKIL	0.117	2	E	1.99	6
RCAPLR	0.003	7	E	3.76	2
R&D	-0.001	-	NE	3.33	-
ROY	0.00008	8	E	1.25	8

Equation 2

NRTP	0.250	3	E	2.99	2
RMG	0.798	1	E	2.74	3
CONR8	0.447	2	E	3.33	1
RSKIL	0.090	5	E	2.19	5
MSKIL	0.198	4	E	1.69	7
RCAPLR	0.0004	5	E	2.27	4
R&D	-0.0011	-	NE	1.41	-
ROY	0.00026	6	E	2.03	5

The results shown above do not confirm the hypothesis of internalisation approach at least as it is measured by R&D expenditure. However, the alternative measure ROY, though only significant in the last equation (the weakest), indicates a positive relation between foreign share and level of royalties and technical fees paid by the subsidiaries of multinational companies. We believe, for the reasons expressed earlier, that ROY is a better measure of technological transfer of multinational companies in the Turkish manufacturing industry and it does lend some sport to the hypothesis of internalisation.

However, the internalisation hypothesis concerning the non-natural market failure hypothesis as represented here by sectoral tariff rate (NRTP) is clearly confirmed by our results here. We should note that this variable is commonly suggested by the locational and internalisation hypotheses, in that both receive credit for it. Tariff rate is also important given ownership advantages and other locational traits. It shows why foreign direct investment may have been preferred to exporting. Moreover, as the relatively higher sectoral tariff rate indicates the relative sectoral weaknesses of the Turkish manufacturing industry it implies that

foreign direct investment has been directed into sectors where Turkey may have a comparative disadvantage.

The most important variable is relative sectoral market growth (RMG), which does indicate a strong confirmation of the location specific hypothesis that the foreign share will be higher in an industry growing faster than respective OECD countries' sectoral growth. However, our result does not indicate any sign that government financial incentives have an influence of the foreign share of Turkish industry.

The second most important variables are those which may be called 'the combined firm-country-specific advantages'; the availability of sectoral managerial skills (MSKIL), and sectoral concentration ratio (CONR8), and to lesser degree, relative skill intensity (RSKIL). The importance of firm-ownership advantages can only be realised when they are utilised in connection with at least some country-specific factors. In that for instance, advantages driven from barriers to (high capital requirements, product differentiation, etc.) entry will make more sense if there is a situation in which those advantage can provide a competitive edge for foreign firms entering from abroad. In the case of skill too, as it was suggested above, not all types of skill are transferable and perhaps the most transferable skill is the ability to obtain the necessary skill by training. An availability of a pool of skill is important for foreign firms to combine their capital intensive methods with. Our results strongly support the hypotheses that the host country market structure, market growth, sectoral protection rate, and the availability of technical-managerial skills have a profound effect on the extent of the foreign share of manufacturing industry.

Finally, our results confirm the hypotheses of the market imperfection approach that size either absolute or relative (RSIZE, SIZE), relative capital intensity (RCAPLR) and product differentiation (RADV) are the major determinants of FDI. However, their relative importance based on the calculated

beta coefficients seems to be small, this is despite the fact that t-ratio for firm size variables are always the highest.

We can conclude firstly that, the results of this study support the hypotheses of the market imperfection approach that entry barriers constitute the main determinants of FDI in Turkish industry, in that country specific characteristics, market structure and government interventionist policies are major sources of those barriers. The effect of other locational variables such as, availability of technical and managerial high skill, relative sectoral market growth are strongly confirmed by our study. However, our results give very little support (as indicated by ROY) to the hypothesis concerning the role of high-technology.

Secondly that determinants of FDI in Turkey seem to differ from other developed countries in that the government intervention in terms of higher tariff rates seems to have greatly influenced the level and relative sectoral distribution of FDI. Moreover, the technology and product differentiation advantages of multinational enterprises do not appear to be their main strength in their relative share of Turkish markets. However, it should be noted that any advantage is relative and that it may only indicate the lack of domestic technological complexity in Turkey. Access to parent firm's superior know-how may be sufficient to out compete the local enterprises as far as the relative strength in technology is concerned.

5.6: The Failure of Role of High Technology in Helping to Explain FDI in Turkish Manufacturing Industry

Can there be an explanation for the failure of high technology in determining the foreign share of Turkish industry? In trying to suggest some reasons for these failure we draw heavily on some of foreign firms' survey results concerning their technological activities in Turkey.

Goymen and Gurel (1976) correlated the ratio of Turkish labour productivity to United States labour productivity with the sectoral foreign shares in Turkish

industry. They argued, as they did not find a strong positive association between these two variables, that 'while foreign capital does not bring in the latest and most advanced technology, it utilises methods of production which may be far more advanced than those already in use in the country. This lends support to the idea that the techniques which become outdated in developed countries are exported to underdeveloped areas'(p.78).

In a later study Erdilek (1982), pointed to two aspects of FDI firms' environment that played a crucial role in the deployment of low technology in Turkey. First, less advanced processes and/or models were on the whole more suitable to the satisfaction of demand in Turkey. Second, the Turkish inward looking import substitution policies that discouraged exports and prohibited all (legal) competitive imports were chiefly responsible for the FDI firms' choices of technology[7].

When foreign firms were questioned about the ways in which they adapted their production processes to the conditions in domestic markets. The most frequent adaptation turned out to be changing of the man/machine ratio from the same ratio in the parent firm country. According to Erdilek this reflected the responsiveness of foreign firms to the lower labour cost/capital cost proportion in Turkey.

Erdilek's survey indicates that, the majority of foreign firms had technological ties[8] with their parent firms, though the technical co-operation agreements were the most and licensing the least frequent ties. One interesting result that came out of his survey was that, 16 out of 45 respondents paid royalties to foreign firms while the number of respondents that had licensing agreements with their parent firms was 23. 'In other words, some DFI firms that had technology transfer contracts

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7: Ibid., p. 68.

8: Defined as: a-licensing agreements; b-foreign personell; c-technological cooperation agreement; d-common research (p. 74).

with foreign firms apparently paid no royalties, not directly at least'(p.77). The aggregate average rate of payments as a proportion of total sales was 2 % for all manufacturing industries. Having considered the legal restrictions imposed by SPO on payments of foreign firms for foreign technology and the difficulties faced in controlling it in practice, Erdilek suggests that parent firms might have imposed indirect if not double charges for foreign technological inputs on foreign firms operating in Turkish industry. On the other hand, according to Erdilek's survey results, the average ratio of R&D expenditures to sales was only 0.7 %. Chemicals was the least R&D oriented sector, while electrical machinery & electronics and building materials were the two relatively most R&D oriented ones.

We now turn to the most recent survey evidence involving 111 foreign firms operating in the manufacturing industry of Turkey in 1988. The results of foreign firms' answers to 11 questions[9] asked are shown in the Tables 5.6 and 5.7. The following remarks can be made as regards to the technological complexity of foreign firms.

(i) Of the 107 foreign firms, 64 considered themselves big, 40 medium and 3 small sized. The proportion of medium and small firms to total number of firms is 40 % with wide variation across industries. The highest is in textile, wearing apparel and leather and the lowest in transport equipment. A similar pattern can bee seen from the answer given to the question 9. It simply reveals that the market structure in which foreign firms are operating can best be described as oligopolistic. Of 111 foreign firms 17 indicated no rivals, 10 said that there was only one rival and 45 reported that the number of rivals were between 2 and 5.

(ii) What emerges from the answers to question 2 is that, of 114 respondents (three of them indicate using a combination of high and other technology), 41

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[9]: See p. 215, (Appendix (2) for the questions).

foreign firms described their technology as medium or low as compared to other firms' in the same sector. Moreover, 30 firms out of 111 stated that, they use second-hand machinery in their production. Although the use of second-hand machinery is more frequent in textile, wearing apparel and leather, it is surprisingly high in machinery (except electrical), transport equipment and electrical machinery.

(iii) Of 101 firms that had licensing agreement, 34 stated that this was with the parent firm, as compared with 67 that had their licensing with other than parent foreign firms. On the other hand, 31 out of 111 foreign firms reported of no R&D undertaken, while 83 stated that they engaged in some sort of R&D activities, of which the development of existing products was the most frequent one, followed by the development of a new product. However, the level of R&D expenditures were insignificant as we saw in chapter 4 (see p. 136, Table 4.22).

(iv) When asked in which area they were superior to purely domestic firms, the most frequent answer turned out to involve quality control, superiority in general management came second and marketing the third, followed by cost effectiveness, accounting and others.

(v) As the answers to question 10 indicate, foreign firms have considerably high dependence on imports for their production. Of 87 foreign firms responded, 43 had more than 50 % of their inputs imported, this ratio was between 25 and 50 % for 19 foreign firms, while only 25 firms reported a dependence on foreign input less than 25 %.

From what have been said so far, two major reason may be given for the failure of high technology in explaining FDI in Turkish manufacturing industry.

1- As a developing country, Turkish industry does not favour the deployment of

high technology in her manufacturing industry because: a- demand conditions are not favourable e.g. low income level, less sophisticated consumer taste and; b- relatively low labour cost favours use of more labour intensive production techniques.

2- The foreign firms' level of technological sophistication is not fully captured by their declared royalties and technical fees payments. There is a wide range of opportunities by which foreign firms seem to be able to channel these payments. Most important of all as we can tell from our survey is the high dependency on imports of inputs from abroad. This dependency was especially marked in what may be called "high-medium technology sectors" where the bulk of FDI is concentrated.

Table 5.6 The results of survey questionnaire of foreign firms.

	1			2			3		4		5				6		7			
Sectors	a	b	c	a	b	c	Y	N	Y	N	a	b	c	d	Y	N	a	b	c	d
Food	9	6	-	11	3	2	3	13	1	15	1	1	1	2	11	5	10	4	4	1
Beverage	2	1	-	2	-	1	1	2	-	2	-	-	-	-	2	1	2	1	2	-
Tobacco	-	1	-	-	1	-	-	1	-	1	-	-	-	-	-	1	-	-	-	-
Textile, Wearing Apparel and Leather	3	4	2	4	3	3	6	2	-	7	-	-	-	-	6	2	5	3	-	-
Wood Products	1	-	-	-	1	-	-	1	-	1	-	-	-	-	1	-	-	-	1	-
Paper & Paper products Printing and publishing	2	2	-	2	2	-	2	2	-	4	-	-	-	-	1	3	-	1	-	-
Chemical products	8	8	-	11	5	-	-	16	6	7	2	2	1	2	13	3	8	9	3	2
Rubber and Plastic	2	-	-	1	1	-	1	1	1	1	-	-	-	-	1	1	1	1	1	-
Non-metallic mineral prod.	3	2	-	2	4	-	1	5	-	5	-	1	-	1	5	1	3	2	3	-
Basic metal	2	1	1	3	1	-	-	4	-	2	-	-	-	-	2	2	2	1	2	1
Fabricated metal	7	5	-	8	4	1	3	9	4	8	-	2	1	1	7	5	6	2	4	-
Machinery(except electrical)	3	2	-	3	2	-	3	2	2	2	-	-	1	-	5	-	4	3	3	1
Electrical machinery	9	5	-	12	4	-	4	12	11	6	3	4	1	1	14	3	12	8	7	-
Transport equipment	8	1	-	8	1	-	4	5	7	2	4	2	1	3	7	2	7	4	5	-
Aircraft industry	2	-	-	2	-	1	1	1	1	1	-	-	-	-	1	1	1	1	1	-
Other manufacturing	3	2	-	4	1	-	1	4	1	3	-	-	-	-	4	1	3	1	2	-
Total	64	40	3	73	33	8	30	81	34	67	10	12	6	10	80	31	64	41	38	5

Table 5.7 The results of survey questionnaire of foreign firms.

	8						9				10			11		
Sectors	a	b	c	d	e	f	a	b	c	d	p≤25	p≤50	p>50	a	b	c
Food	5	12	7	3	4	3	2	3	6	5	8	-	2	1	7	3
Beverage	-	2	2	1	-	-	-	1	1	1	1	-	2	-	1	2
Tobacco	1	1	1	1	1	-	-	-	-	1	-	-	-	-	-	1
Textile, Wearing Apparel and Leather	5	7	5	5	5	-	1	1	1	6	1	1	2	1	3	1
Wood Products	-	-	1	-	-	-	-	-	1	-	1	-	-	-		
Paper & Paper products Printing and publishing	3	2	2	-	-	2	1	-	1	2	-	1	1	-	1	1
Chemical products	12	13	11	9	6	2	1	2	6	8	-	3	11	-	5	9
Rubber and Plastic	1	1	1	-	-	-	1	-	1	-	-	1	-	-	2	-
Non-metallic mineral prod.	2	2	2	1	-	-	1	1	2	1	2	1	-	-	-	3
Basic metal	-	1	1	-	-	1	1	-	1	2	1	-	3	-	2	1
Fabricated metal	4	9	3	1	2	2	1	-	7	4	4	4	4	2	8	2
Machinery(except electrical)	3	3	3	3	3	1	1	-	3	1	2	1	-	-	3	1
Electrical machinery	11	12	7	9	4	3	3	2	5	6	1	3	11	-	10	5
Transport equipment	4	9	1	4	3	-	2	-	6	1	4	4	1	-	5	3
Aircraft industry	1	2	1	2	1	2	2	-	-	-	-	-	2	-	-	2
Other manufacturing	1	5	1	1	-	1	-	-	4	1	-	-	4	-	3	1
Total	53	81	49	40	29	17	17	10	45	39	25	19	43	4	50	35

5.7: Conclusion

In this chapter, using a combination of both industry and firm level data we have attempted to find out how relevant are the received theories of FDI to explaining the determinants of FDI in the Turkish manufacturing industry. The results of OLS estimation conducted at industry and firm level would seem to suggest that the hypothesis advanced by FDI theorists are to a large extent relevant in explaining the determinants of direct investment in the manufacturing industry of Turkey. However our results would also suggest that the great emphasis placed on technological superiority of MNEs is not so apparent in the manufacturing industry of Turkey. In this respect the inference will be that the affiliates of MNEs do not derive their technological superiority from locally engaging in R&D activities. However, though not significant in many equations, the positive showing of variable ROY, licensing and technical fees paid abroad, would suggest that the technological superiority of MNEs affiliates may better be captured in ROY rather than their level of R&D in developing countries. In any case our results do not indicate strong support to technological advantages of foreign firms in Turkish industry. This may cause some concern for policy makers as they intend to achieve a greater technology transfer through multinational investments in Turkish industry.

Marketing advantages were not so apparent at firm level partly ,we believe, due to relatively low level of income and relatively less sophisticated consumer taste common features to most developing countries. However, a more plausible explanation may be related to the limitations associated with the current level of advertisement expenditure in representing the scale of advertisement activity which has lagged returns. Moreover, it was suggested that MNEs affiliates are able to internalise the benefits of a part of the accumulated advertising done by their parent and associate firms the world over. This implies that the current expenditure by MNEs affiliates on advertising yields proportionately higher

returns than that of indigenous firms. This argument is more convincing than the one based on the general characteristics of developing countries. As it is well known that certain classes in developing countries do receive a high level of income and have a similar pattern of consumption to that which exists in industrialised countries. As relative advertising intensity variable's significant result would suggest it seems that MNEs affiliates in Turkish manufacturing industry do have an advantage in marketing activities vis-a vis domestic firms, and tend to go into industries where marketing requirements may be important.

Our analysis shows that MNEs affiliates have concentrated in sectors of the manufacturing industry requiring large scale operations and high capital intensive techniques. Our results also show that MNEs are predominant in relatively highly concentrated and protected sectors of Turkish manufacturing industry. Again, high tariff rates seem to have contributed the level of foreign shares, by perhaps effecting the decisions of foreign firms to chose direct investment over exporting in servicing Turkish markets.

One of important finding of this analysis of the relative ownership share of foreign firms in Turkish manufacturing industry is that it shows the significant effect of relative sectoral market growth of the Turkish manufacturing industry to OECD's sectoral market growth rate. It may further indicate the importance of bringing together both the supply and marketing factors in explanation of determinants of FDI.

In tune with prediction, our results further suggest that MNEs affiliates tend to favour profitable and management intensive sectors of the Turkish manufacturing industry.

The failure of role of high technology in helping to explain FDI in Turkish manufacturing industry is mainly related to supply and marketing characteristics of Turkish industry. Moreover, there are some indications that the payments for royalties and technical fees are not always reported by foreign subsidiaries and this

may, to some extent, undermine the effects of technology variable (ROY) in our model.

5.8: Policy Implications

The preceding analysis has highlighted that the determinants of FDI and their relative share of Turkish markets are closely related to country-specific characteristics. The sectoral distribution of FDI seems to carry the hallmark of import substitution industrial policies pursued until early 1980s. It would not be wrong to suggest that the FDI in Turkey has been primarily made to meet domestic demand as they were guaranteed oligopolistic closed seller markets by high trade protection policies. Isolated to a great extent from all foreign competition and able to sell profitably all they can in the domestic market, the foreign firms do not seem to favour those sectors where Turkey has a comparative advantage. On the contrary, our result shows that foreign firms tend to favour industries where relatively high technical and managerial skills are required. Moreover, their relatively higher production skills have given them a competitive edge vis-a-vis domestic firms. This, in our view, is desirable to a certain extent in that, in the medium or long term Turkey's comparative advantages are unlikely to lie in the low wage sectors. It may also indicate that foreign firms have to some extent contributed to labour training in Turkey. Based on the empirical results of this investigation, our policy suggestions for both the relative role of and net benefits from FDI in Turkish manufacturing industry are presented under the following headings.

1- The integration of Turkey into the world economy led by multinational enterprises should be based to some extent on the country's comparative advantages that it promotes exports and enables the setting up of new manufacturing facilities with relatively higher employment effects. The first action by the Turkish authorities ought to be aimed at a radical reduction in the rate of

high tariff rates. All permanent and quantitative trade restrictions and priced-based measures should be reduced in order to open the highly concentrated Turkish market to an effective international competition. This is crucial not only for a efficient allocation of resources concerning foreign subsidiaries activities but more so for domestic oligopolist firms.

2- An antitrust law should be enacted in order to curb and prevent anti competitive market power and business practises. This in our view will help the development of small local competitors, and consumer protection.

3- The factor price-distorting government industrial investment incentives should be brought to bare selective minimum. We did not find much evidence in relation between the proportion of these incentives and the sectoral distribution of FDI in Turkey. Even if it brought more FDI into the country, it is very much questionable whether FDI induced in this way is desirable.

4- We would like to stress that the benefit that Turkey may obtain from FDI depends primarily on the ability of government to create the right investment climate. This points to policies enabling a more efficient utilisation of resources, and concerns both domestic and foreign firms investments. First, to do this, the government should concentrate on the development of infrastructures. Second, government should do its best to strengthen the technical education and professional training. The later is doubly important in that it not only attracts FDI but it is also the main channel through which technology is absorbed and diffused.

5- It is imperative that a data bank is formed to collect and process annually all the necessary data on the activities of foreign firms and assess their net benefits to the economy. The lack of data concerning the operation of foreign firms and the secrecy attached to them makes it much more difficult to conduct a more comprehensive analysis of FDI in Turkey.

CHAPTER SIX

Empirical Methodology and Reliability of the Results

6.1: Introduction

This chapter presents a summary of econometric methodology and its application to the model set out in the previous chapter. The approach we adopt follows roughly that advocated by Hendry (1983). By evaluating our model in the light of the criteria suggested below, we hope to provide a basis for assessment of a theory-specific interpretation of the model and the reliability of results obtained.

In this chapter, we will try to apply the evaluation criteria to the results generated by our model. The criteria used are; 1- Valid conditioning; 2- Data coherency; 3-Parameter constancy; 4-Theory consistency.

6.2: Evaluation Criteria

Before we embark on the application of evaluation criteria to the results of the model presented in the previous chapter, a few words need to be said about the search process employed to find a satisfactory specification of the model. We have adopted a general to specific search method. Accordingly, we started initially by specifying the most general model consistent with the theories of foreign direct investment. This specification was then revised in turn through the testing theory-implied restrictions until we reached the results which were both data and theory consistent. A specific statement of the criteria applied here involves subjecting the model to a range of diagnostic tests, and checking for the theoretical consistency of the results.

6.2.1: Valid conditioning

Apart from the general to specific search process, valid conditioning in a single equation model implies that the dependent variable is designated as the endogenous variable and the other variables are treated as exogenous. Accordingly, the statistical model treats the casual relationship between independent and dependent variables as uni-directional, from independent variables to dependent variables. Moreover, it is assumed that there are no linear relationships between the independent variables. This problem of multicollinearity can have major effects on the estimated results. The most important direct result is the generation of unrealistically high standard errors on the partial regression coefficients. The abnormally high standard errors are sometimes sufficiently large to cause the calculated t-statistics to be smaller than the critical t-statistics. This leads the erroneous acceptance of the 'null' hypothesis that the partial regression coefficient is effectively zero when in fact it is not. The other problems associated with the existence of multicollinearity are that the data set being used for the estimation and the specification of the model are highly sensitive to any minor changes made upon them. It is important, therefore, that we consider the problem of multicollinearity to see whether the underlying assumptions of the classical linear regression are violated. Tables 6.1 and 6.2 present the correlation matrix of the independent variables used in the our main regression analysis.

Table 6.1 simple correlation coefficients for independent variables at sectoral level.

	RSIZE	MSKIL	RMG	RCAPLR	RADV	CONR8	SPROF	NRTP
RSIZE	1.00							
MSKIL	-0.161	1.00						
RMG	0.185	-0.340	1.00					
RCAPLR	0.275	-0.041	-0.188	1.00				
RADV	0.002	0.404	-0.095	0.411	1.00			
CONR8	-0.021	0.448	-0.127	0.224	0.127	1.00		
SPROF	-0.014	-0.336	-0.233	-0.139	-0.345	0.168	1.00	
NRTP	0.488	-0.449	-0.062	0.509	-0.151	-0.072	0.251	1.00

Table 6.2 simple correlation coefficients for independent variables at firm level.

	nrtp	rmg	size	conr8	mskil	rcaplr	r&d	roy	rskil
nrtp	1.00								
rmg	-0.248	1.00							
size	0.229	0.087	1.00						
conr8	0.090	0.054	0.294	1.00					
mskil	0.263	0.151	0.219	0.397	1.00				
rcaplr	-0.006	0.020	0.029	0.056	0.048	1.00			
R&d	-0.061	0.027	0.089	-0.085	0.111	-0.026	1.00		
roy	-0.030	0.169	0.185	0.098	0.005	0.260	-0.092	1.00	
rskil	0.102	-0.183	0.149	0.119	-0.050	0.301	0.033	0.202	1.00

The results of tables 6.1 and 6.2 is compatible with the assumption that no exact linear relationships between independent variables is present.

6.2.2: Data Coherency

Data coherency requires that the estimated model should agree with the data to an acceptable degree. Two separate aspects can be identified: closeness of the descriptions and; and systemic lack of fit.

Closeness of the description requires that an acceptable model should provide an adequately close description of the data. One of the most common measures applied is the coefficient of multiple correlation or, R^2. This is a scalar measure and it is equal to the proportion of variation in the dependent variable that is explained by the independent variables included in the model. However, a drawback to the use of this measure is that R^2 will usually increase (or at least it cannot fall) when additional explanatory variables are added. This restricts its use in model selection and a preferable measure is one that takeS into account the number of independent variables included in the model. Thus we report along all our results the degrees of freedom adjusted R^2, that is R^{-2}. R^{-2} is defined as follows $R^{-2}= 1-(s^2 / (\Sigma(y_t- y)^2/ (n-1)$, where y is the sample mean of the dependent variable, s^2 is the estimated variance of the regression. This indicates that R^{-2} is at a maximum when s^2 is at a minimum and that R^{-2} will rise if and

only if s^2 falls when an extra set of explanatory variables is included in the model.

Consequently the F statistic expressed as $(R^{-2} / (1-R^{-2}))$ $((n-k)/(n-1))$ with F(k-1, n-k) degrees of freedom, determines whether or not all partial regression coefficients are equal to zero. It tests the null hypothesis that $\beta_1 = \beta_2 = \beta_3 = \beta_n = 0$ where Ho is rejected for values of the statistics in excess of the critical F (k-1, n-k) value.

The application of OLS to the general linear model assumes that the model has non-auto correlated and homoscedastic disturbances. That is disturbances have uniform variance and are uncorrelated. Although, this assumption cannot be tested directly given the unobservable nature of disturbances, something about their behaviour can be inferred by examining the pattern of the residuals from the estimated model. If an estimated model exhibits residual auto correlation, this is indicative of a systematic lack of fit caused by for example, omitted variables, functional form misspecification and can be interpreted as evidence of misspecification in the estimated relationship. The OLS estimator will produce unbiased but inefficient estimates. It may cause the acceptance of a partial regression coefficient as being significantly from zero when it is not. Secondly, it may cause the acceptance of the null hypothesis that the partial regression coefficient is zero when it is different from zero. Further, any given sample of auto correlated data may generate over-estimates or under-estimates of the partial regression coefficients themselves. All of this reduces the amount of confidence that can be placed on the derived inference procedures given that the OLS t-ratios are inappropriate. Hence it is important to test for residual auto-correlation.

We apply a Lanrange Multiplier test for auto correlation proposed by Breusch (1978) and Godfrey (1978) which is valid whether or not a lagged dependent variable is included in the model. In the test presented below, a value of LM(1) in excess of the X2(k-1) critical value implies rejection of Ho that all auto correlation coefficients are equal to zero.

A test for heteroscedasticity is also employed that is based on the regression of squared residuals on squared fitted values. A value of LM(1) statistics in excess of the X2(k-1) critical value implies the rejection of Ho that the disturbance terms all have the same variance.

In addition a test of functional form and normality is also applied to our regression model. The interpretation of results of these tests are the same as above.

Taken together, the test for Serial Correlation, Functional Form, Normality and Heteroscedasticity are computed by a Micro Fit statistical software package and presented along with each equation. For our purpose we duplicate some of these results on the next page.

Equation (1); in Table (5.1) firm level, 1987-1988

```
FD = -14.63 + 0.77RSIZE + 0.80CONR8 + 0.084ERTP + 0.12PROF +
      (9.39)a  (8.94)a     (2.14)b     (3.39)a     (4.93)a

     0.035ADV + 0.011ROY - 0.029R&D + 0.004GINC
     (1.53)     (0.55)     (1.52)     (0.20)

R-2= 0.705    D.W= 2.02  F(8, 78)= 26.74a    N=20
```

Test Statistics	LM Version	F Version
A: Serial Correlation	$X^2(1)= .043$ [.835]	F(1, 77)= .038 [.846]
B: Functional Form	$X^2(1)= .440$ [.507]	F(1, 77)= .391 [.533]
C: Normality	$X^2(2)=3.294$ [.193]	Not applicable
D: Heteroscedasticity	$X^2(1)= .686$ [.407]	F(1, 85)= .676 [.413]

Equation(1); in Table (5.2) firm level, 1988

```
FD= -20.74 + 0.60LNRTP + 1.58RMG + 0.74SIZE + 0.93CONR8 +
    (10.61)a   (1.87)c     (2.69)a   (10.02)a    (2.27)b

0.45RSKIL + 0.74DMSKIL + 0.175RCAPLR - 0.104R&D + 0.015ROY
 (2.05)b      (1.99)b     (3.76)a       (3.33)a    (1.25)

R-2= 0.702   D.W= 1.93  F(9,  99)= 29.3a     N=109
```

Tests Statistics	LM Version	F Version
A: Serial Correlation	$X^2(1)= .093$ [.760]	F(1, 98)= .083 [.773]
B: Functional Form	$X^2(1)= 1.65$ [.198]	F(1, 98)= 1.51[.221]
C: Normality	$X^2(2)= .227$ [.892]	Not applicable
D: Heteroscedasticity	$X^2(1)= 1.55$ [.213]	F (1, 107)= 1.54[.217]

notes: values in parentheses are t-ratios; a: significant at 1% level b: significant at 5% level; c: significant at 10 % level.

Equation (1), in Table (5.4) industry level, 1988

FD= -5.132 + 0.895RSIZE + 1.355MSKIL + 1.761RMG + 0.322RCAPLR +
(-3.02) (9.12)[a] (2.83)[b] (3.59)[a] (1.65)

0.056RADV + 0.757CONR8 + 0.231INPROF
(1.95)[c] (2.28)[b] (3.41)[a]

R^{-2}= .902 D.W= 1.98 F(7, 12)= 26.05[a] N= 20

Test Statistics	LM Version	F Version
A: Serial Correlation	$X^2(1)$= .303 [.582]	F(1, 11)= .169 [689]
B: Functional Form	$X^2(1)$=2.505 [.113]	F(1, 11)= 1.57[.235]
C: Normality	$X^2(2)$= .814 [.666]	Not applicable
D: Heteroscedasticity	$X^2(1)$= .108 [.742]	F(1, 18)= .097 [.758]

notes: values in parentheses are t-ratios; a: significant at 1% level b: significant at 5% level; c: significant at 10 % level

A: Langrange multiplier test of residual serial correlation

B: Ramsey's RESET test using the square of the fitted values

C: Based on a test of skewness and kurtosis of residuals

D: Based on the regression of squared residuals on squared fitted values.

In response to reported diagnostic tests of all equations above, we accept the null hypothesis of no first-order serial correlation, and the hypothesis of constant variance for the disturbances. We also accept the hypothesis of normal residuals and no functional form mis-specification.

Since all other equations not reproduced here coincide with the diagnostic tests applied we can be confident that there is no evidence that our models suffer from mis-specification.

6.2.3: Parameter Constancy

This criterion relates two issues. The first is that the model should adequately describe the data throughout the estimation period. This implies that it is important to test for parameter constancy. Second, the model should adequately predict for the post estimation period. This requires the test of forecast accuracy to be applied.

In situations where there is parameter instability, within or without the estimation period, this can signify either a structural break in the econometric relationship or that the model is misspecified. The former can be a convenient explanation but it should only be adopted if there is additional evidence of such a change and if the sources and timing of the structural shift can be specified in some detail.

Chow's first and second tests are employed to test for parameter constancy and predictive failure of the model. The Chow tests are based on the residual sum of squares from the model estimated over the n observations which include the m-n post sample observations. The form of statistics is Chow= ((RSS(m) - RSS(n)) / RSS(n) . ((n-k) / m-n)) where, RSS(n) and RSS(m) are the residual sums of squares from the model estimated over the n and m observations respectively. This statistic is distributed as an F(m-n, n-k) under the null hypothesis of parameter stability with values of the statistics in excess of the critical F value implying that the null hypothesis should be rejected.

We attempted to test whether there is a significant difference in the determinants of FDI in the Turkish manufacturing industry between the firms from industrialised and non-industrialised countries. The results are shown in the previous chapter and there is no indication that there is a significant difference between the two groups of firms, when the equations include the SIZE variable. Without the SIZE variable, we found that some parameters were different between the two groups as revealed by the Chow's second test.

6.2.4: Theory Consistency

The results obtained from any econometric investigation of an economic theory should be checked to see if they are consistent with the underlying theory. The usual exercise is to check the sign, size and significance of the coefficient estimates for a model. The first two can be assessed in relation to the theory under

examination while the latter can be evaluated by using conventional t-statistics, as long as the model is adequate in other respects. It is a fundamental requirement that the model should exhibit theoretical consistency in these terms.

In Tables 6.3 and 6.4, the sign and significance of the coefficients of the explanatory variables are presented. In addition to sign and the significance of variables we also calculated the ' 'beta coefficient' to show the relative strength of independent variables in effecting the dependent variable.

The 'beta coefficient' is calculated by multiplying the usual coefficient estimate by the standard error of its repressor and dividing by the standard error of the regress, and can be interpreted as the number of standard error changes in the dependent variable resulting from a standard error change in the independent variables (Kenedy 1985 p. 213)

The highest BETA coefficient implies the most important variable. A quick examination of statistics produced by calculation of BETA reveals that the most important variables are RMG, MSKILL, CONR8, sectoral protection rate (NRTP, ERTP), size(SIZE, RSIZE, RSKILL, DMSKIL and RCAPLR in both industry and firm levels respectively. This relative importance of independent variables, is sometimes, though not always, also associated with higher t-ratios.

With respect to sign, we can see that apart from and R&D and ROY all other independent variables have turned in expected signs.

Table 6.3 The sign, significance and relative importance of variables Equation 1 in (Table 5.4), sectoral level.

Variables	Beta coefficient	Rank	Sign	t-ratio	rank
RSIZE	0.070	4	E	9.12	1
MSKIL	0.520	2	E	2.83	4
RMG	0.694	1	E	3.59	2
RCAPLR	0.050	5	E	1.65	7
RADV	0.001	7	E	1.95	6
CONR8	0.201	3	E	2.28	5
SPROF	0.012	6	E	3.41	3

Equation 2

RSIZE	0.087	4	E	6.02	1
NRTP	0.153	3	E	2.28	6
RADV	0.002	6	E	2.64	5
RMG	0.912	2	E	3.81	4
MSKILL	0.797	1	E	4.73	2
SPROF	0.015	5	E	3.94	3

Firm level(1987-88)
Equation 1
Table(5.1)

RSIZE	0.033	2	E	8.94	1
CONR8	0.151	1	E	2.14	4
ETRP	0.001	4	E	3.39	3
PROF	0.002	3	E	4.93	2
ADV	0.0004	5	E	1.53	5
ROY	0.0001	7	E	0.55	6
R&D	-0.0003	-	NE	1.52	-
GINC	0.0002	6	E	0.20	7

Equation 2

RSIZE	0.016	3	E	22.32	1
CONR8	0.152	1	E	9.55	2
ETRP	0.0004	5	E	5.01	3
RMG	0.087	2	E	2.39	4
RCAPLR	0.0021	4	E	2.03	5
ADV	0.0001	6	E	1.57	6
ROY	-0.0001	-	NE	1.78	-
GINC	0.00003	7	E	0.57	7

firm level (1988)
Equation 1
Table (5.2)

NRTP	0.082	4	E	1.87	7
RMG	0.397	1	E	2.69	3
SIZE	0.023	6	E	10.02	1
CONR8	0.161	3	E	2.27	4
RSKIL	0.042	5	E	2.05	5
MSKIL	0.117	2	E	1.99	6
RCAPLR	0.003	7	E	3.76	2
R&D	-0.001	-	NE	3.33	-
ROY	0.00008	8	E	1.25	8

Equation 2

NRTP	0.250	3	E	2.99	2
RMG	0.798	1	E	2.74	3
CONR8	0.447	2	E	3.33	1
RSKIL	0.090	5	E	2.19	5
MSKIL	0.198	4	E	1.69	7
RCAPLR	0.0004	5	E	2.27	4
R&D	-0.0011	-	NE	1.41	-
ROY	0.00026	6	E	2.03	5

CHAPTER SEVEN

Conclusion

The main concern of this thesis is to investigate the determinants of FDI in Turkish manufacturing industry, by relying on both descriptive and quantitative analyses. We attempted to test various hypotheses to assess the appropriateness of FDI theories to a developing country, Turkey. This was important since most of the FDI theories have been advanced to explain the international foreign direct investment in industrialised countries. Moreover, we also tried to discriminate between alternative hypotheses as regards their explanatory ability on the extent of foreign shares of Turkish industry.

Major increase in the amount of FDI in Turkish manufacturing industry took place after 1954 with the introduction of Law 6224. As the period up to 1980 was characterised by import substitution development strategy, the FDI were mainly to serve domestic markets. Between 1950-1980, 84 % of FDI went into manufacturing industries, in which automotive, chemical, electronic and electrical machinery, rubber, metal and food-drink-tobacco, were the prime receivers.

An increase from $ 263,1 million at the end of 1980 to $5954,1 million in 1992 occurred only during a decade of more liberal economic policies. This period also witnessed a change in the sectoral composition of FDI. In 1992, the share of total FDI going to the manufacturing industry fell to 54 %, whereas the share of the services sector rose to 41 %.

However, the source country distribution of FDI did not change much. Between 1950-1980, 63 % of FDI originated from the EEC, followed by 19 % from the US. The share of the OECD countries in the total has almost remained the same, 86 % in 1979 and 87 % in 1992.

Our analysis shows a high prevalence of FDI in certain sectors of the

manufacturing industry. These sectors are: electrical and electronic machinery; chemicals, rubber, automotive, food beverage and tobacco; and printing and publishing (see Chapter 3). The estimated multinational domination ratios for these industries were found to be close to the similar ratios for the same industries in industrialised countries. This clearly demonstrates that the FDI in Turkey has an industrial pattern similar to those in advanced nations.

In an attempt, (following the conventional route, Chapter 4), to gain an insight into relative economic performances of foreign and domestic firms, we found that on average, foreign firms were more profitable, showed higher labour productivities and were more capital intensive than their domestic counterparts during 1980-1989. Of eight groups of industries analysed, except those sectors where public enterprises dominate, the foreign firms' lead over domestic firms persisted. Nevertheless, statistical tests of significance in differences across 13 groups of industries in 1989 were not, in many of the performance indicators, conclusive. It still emerged that the foreign firms which had higher labour productivities were more capital intensive in ten groups of industry. Two factors seem to effect the results of these comparisons. One is that the bulk of FDI is in sectors characterised with a relatively high level of capital intensity. The other is the distortion that arise from the inclusion of publicly owned petroleum, tobacco and cement companies, for which there is no foreign equivalent. Further comparisons revealed that foreign firms had higher import sale ratios, paid higher wages than domestic firms and are found in industries characterised by a high level of concentration, protection and relatively faster growing sectors. Moreover, they are found in sectors, where Turkey does not have comparative advantage.

It may be argued that the contribution of FDI to the restructuring of the Turkish industrial system has been, to some extent, a positive one as foreign firms show higher productivity levels and displays a greater orientation towards high-technology and skill demanding industries than their domestic counterparts.

Moreover, in relation to international competitiveness, we can say that foreign firms have helped to increase Turkish exports in sectors where previously they did not present exporting capacity (electrical, electronics, chemicals, automotive).

However, as our analysis shows the transfer of technology in the form of locally undertaken R&D is insignificant. Furthermore, in most of industries the available evidence suggests that vertical linkages with the domestic economy have been relatively weak (see p. 136, Table 4.22).

To find out the major causes of FDI in Turkish manufacturing industry, an empirical model was tested by using firm and industry level data. The results can be summarised under the following headings.

1- The determinants of FDI in Turkish manufacturing industry are closely associated with Turkish industrial structure shaped by the industrial polices from which we observe the following. (i) Higher sectoral tariff protection has been on of the major determinants of FDI. It should be noted that, despite the liberal economic policies after the 1980s, Turkish industry is still heavily protected, and ironically the most protected sectors have been those of exporting industry after 1983(see Chapter 3). (ii) The sectoral distribution of FDI determined by tariff protection, indicates a concentration of FDI in sectors where Turkey does not have a comparative advantage. (iii) The high level of industrial concentration in the Turkish manufacturing industry is another important determinant of FDI in Turkey. (iv) The most important country-specific determinants of FDI seems to be the relative sectoral market growth. Interestingly, relative market growth came out as the most important reason for investing in Turkey in Erdilek's (1982, pp. 19-20) questionnaire survey of foreign firms. (v) Government intervention in the form of industrial subsidies and tax refunds found very weak support in effecting foreign firms' share of Turkish markets. (vi) The availability of high technical and managerial skills level obtained strong support from our study in determining the

foreign direct investment. This seems to be one of a few good thing to have come out of effective government intervention in the economy in the form of import substitution policies.

2- The other prime determinants of FDI in Turkey are related to characteristics of multinational firms. Their advantages in terms of relative or absolute size, relative capital intensity, and relative product differentiating ability, and relative skill intensity seems to have enabled them to take advantage of Turkish market conditions. The following are worth stressing. (i) The foreign investments tend to concentrate in those sectors where relatively high minimum capital is important. (ii) Closely related to the first, that foreign firms tend to go in industries requiring relatively higher capital labour ratio. (iii) We did not find any effect of high-technology as it is measured by the R&D expenditure. However, although not always consistent the level of royalties and technical fees paid abroad by foreign firms seems to indicate some effect on the share of FDI in Turkey. (iv) Advertising intensity, though negative when included at firm level, becomes important when measured relative to domestic sectoral advertising intensity.

3- The determinants of FDI in Turkey seems to differ from those among industrialised countries in that the role of high technology and product differentiation are not so important. Unlike the determinants of FDI between most of the industrialised countries, the effect of the tariff rate is also of prime importance in Turkey.

4- Based on the results of this study the structural market imperfection approach combined with locational factors seems to be more relevant in explaining the determinants of FDI in manufacturing industry of Turkey.

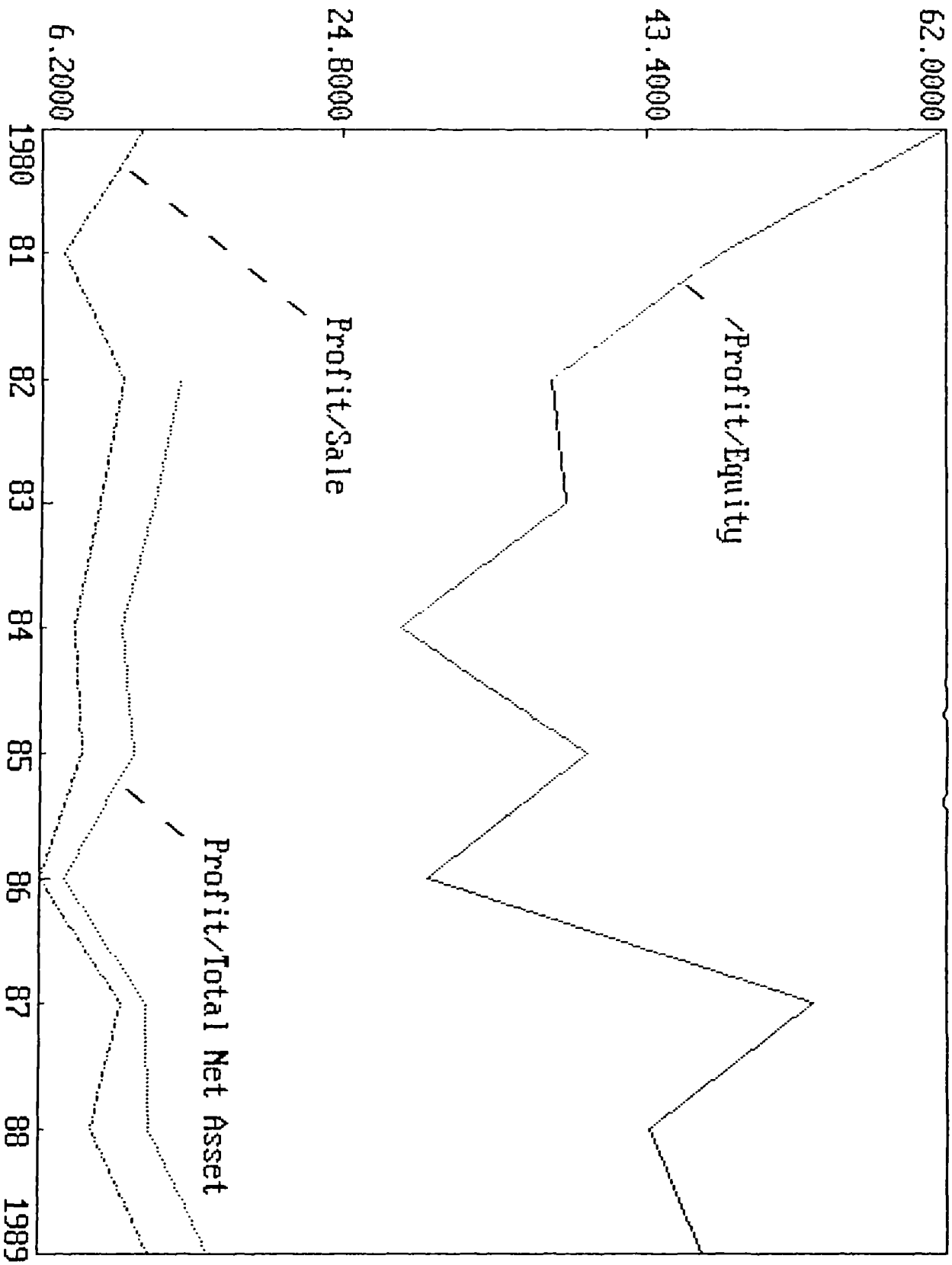


Figure 4.1 Profitability ratios of foreign firms (%), 1980-1989

Appendix (1)

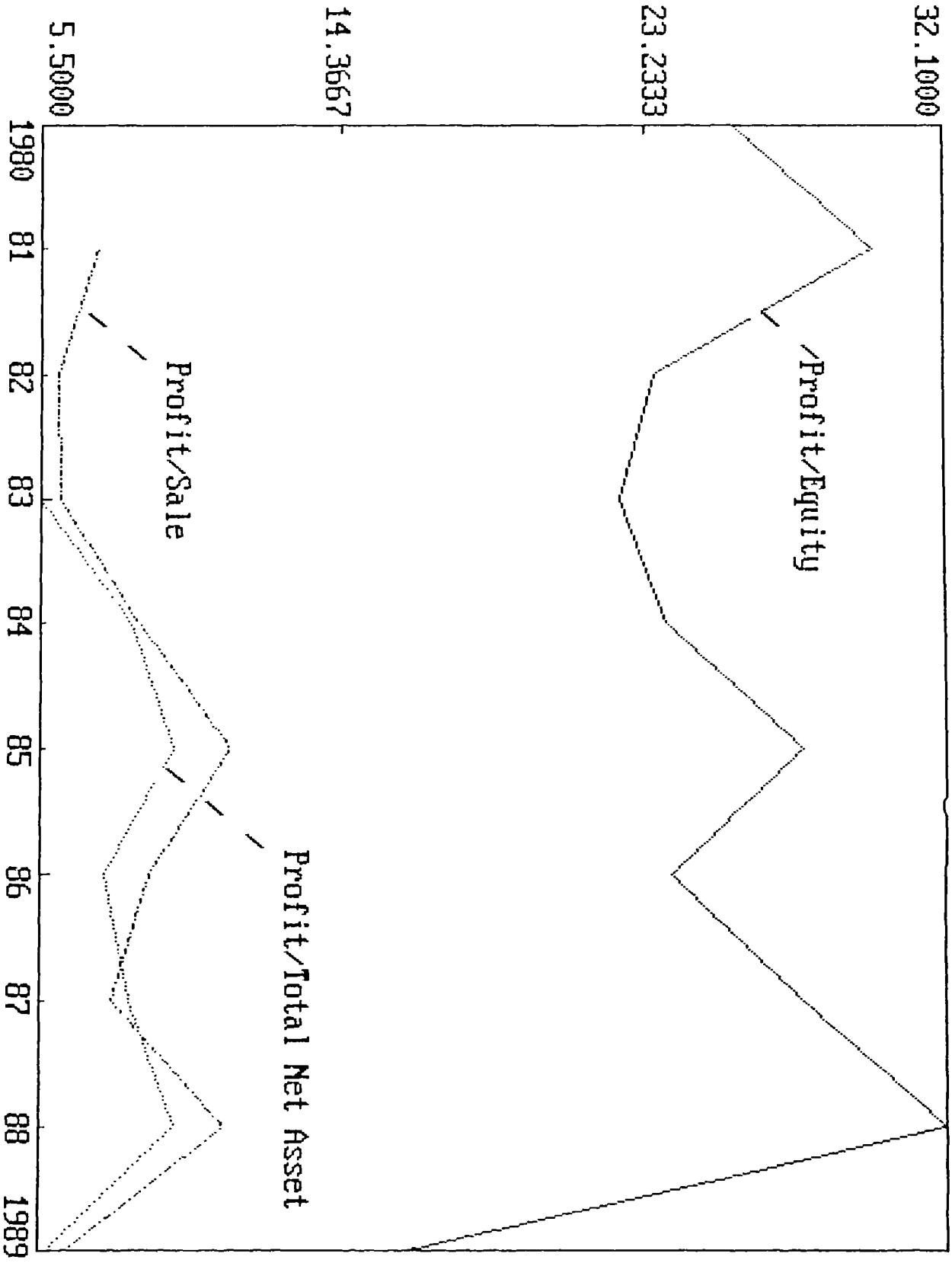


Figure 4.7 Profitability ratios of domestic firms (%), 1980-1989

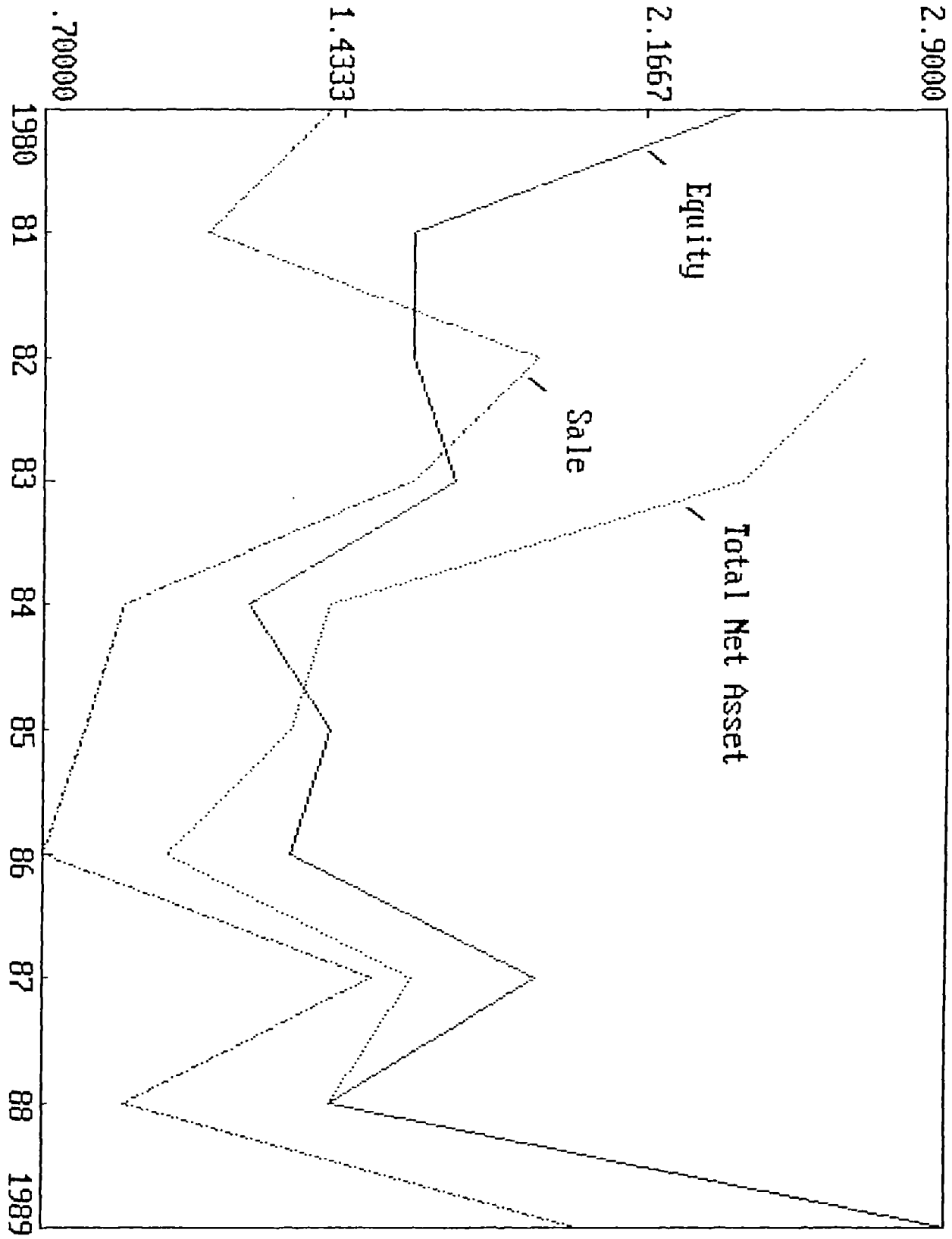


Figure 4.3 Relative profitability ratios (foreign/domestic), 1980-1989

Appendix (1)

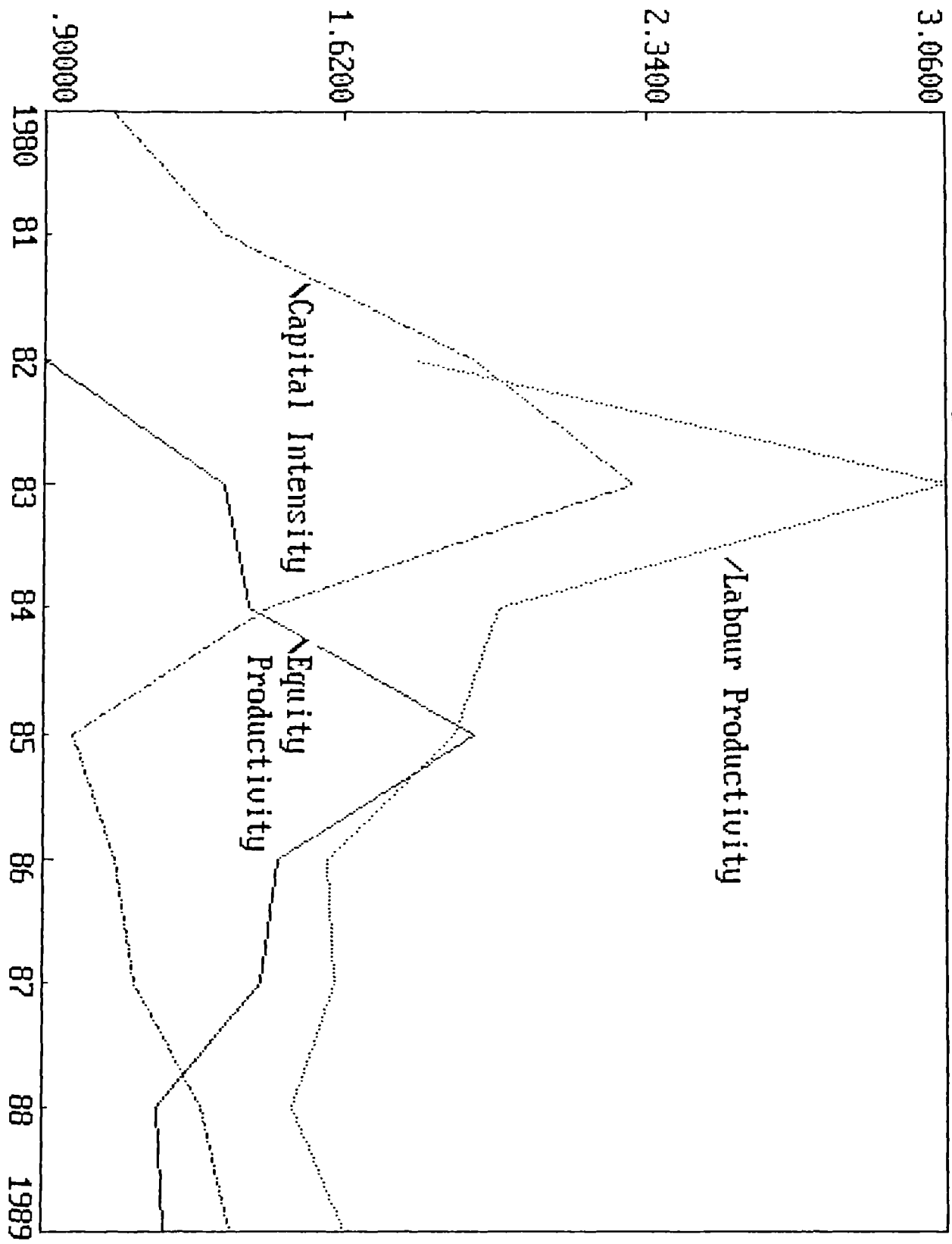


Figure 4.4 Relative productivity (labour and equity)and capital intensity ratios (foreign/domestic), 1980-1989

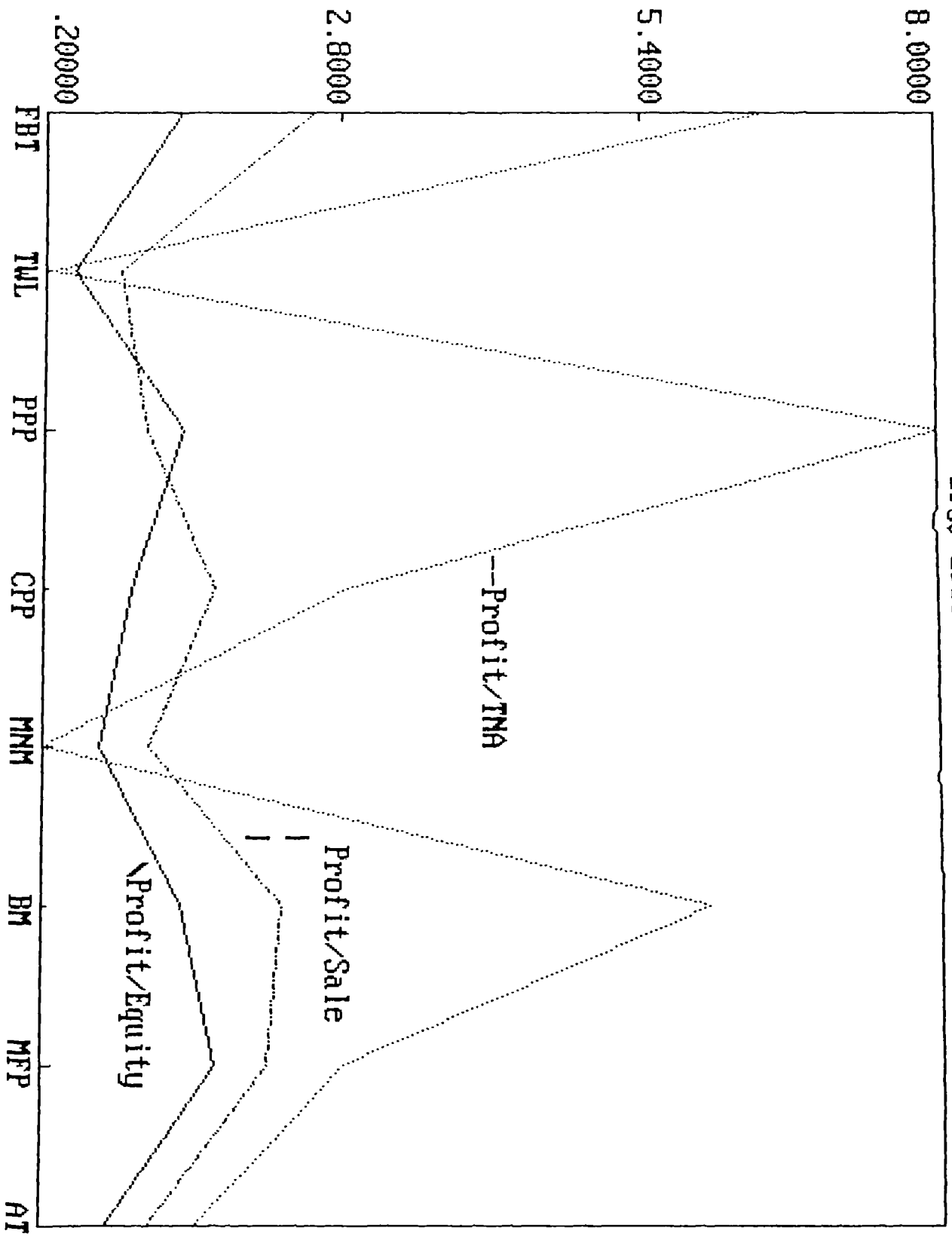


Figure 4.5 Relative sectoral profitability ratios (foreign/domestic)
1980-1983

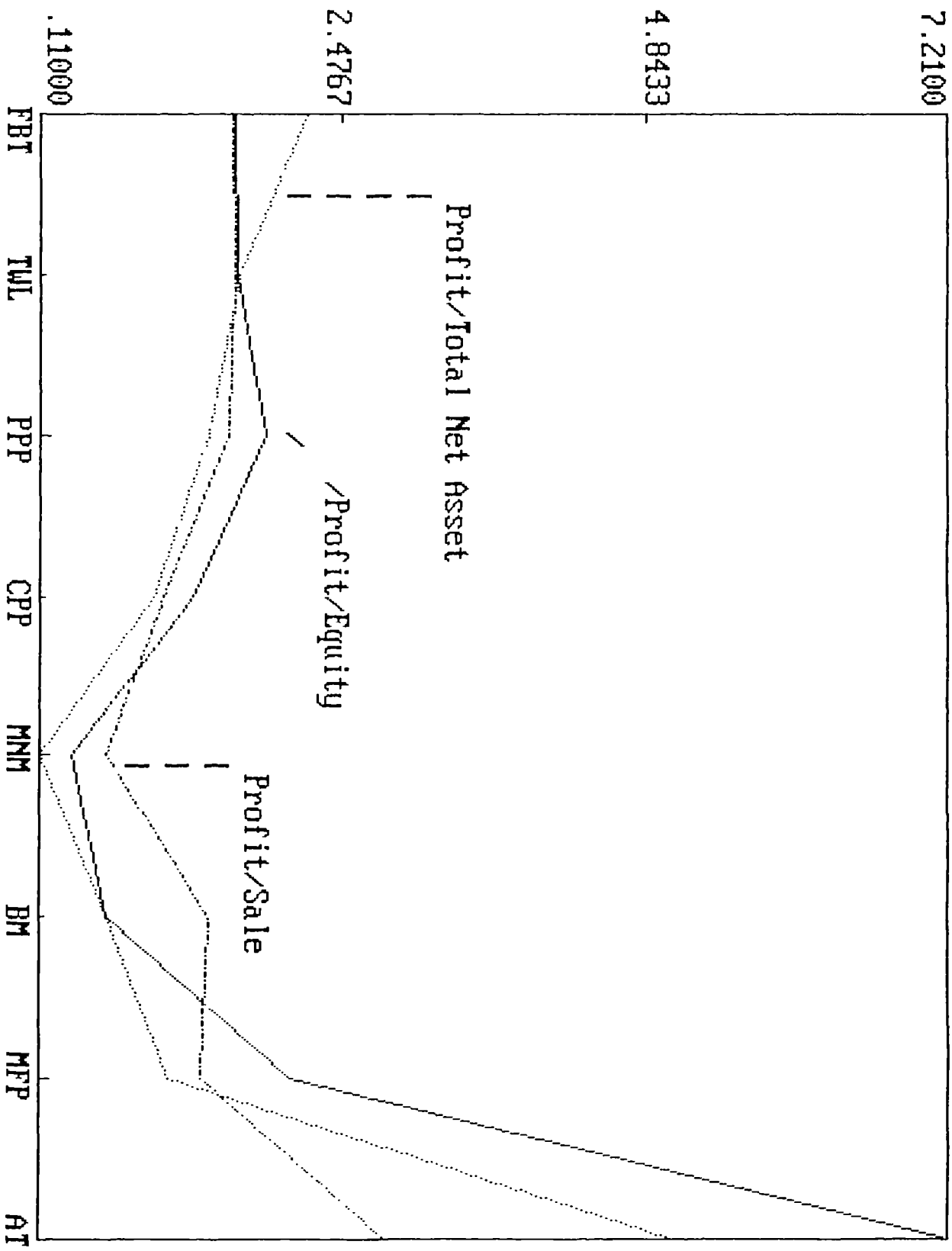


Figure 4.6 Relative sectoral profitability ratios (foreign /domestic) 1985-1989

Appendix (1)

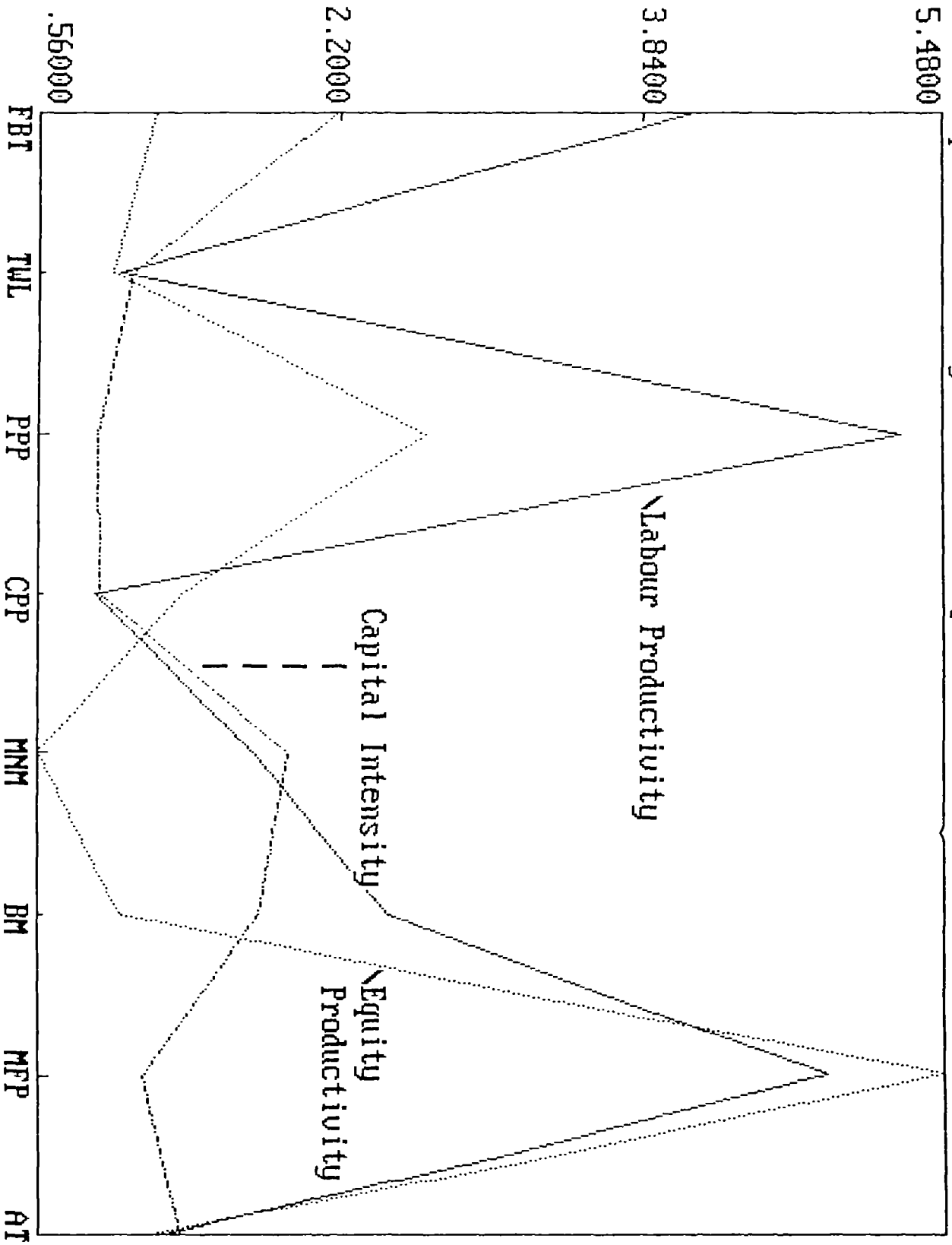
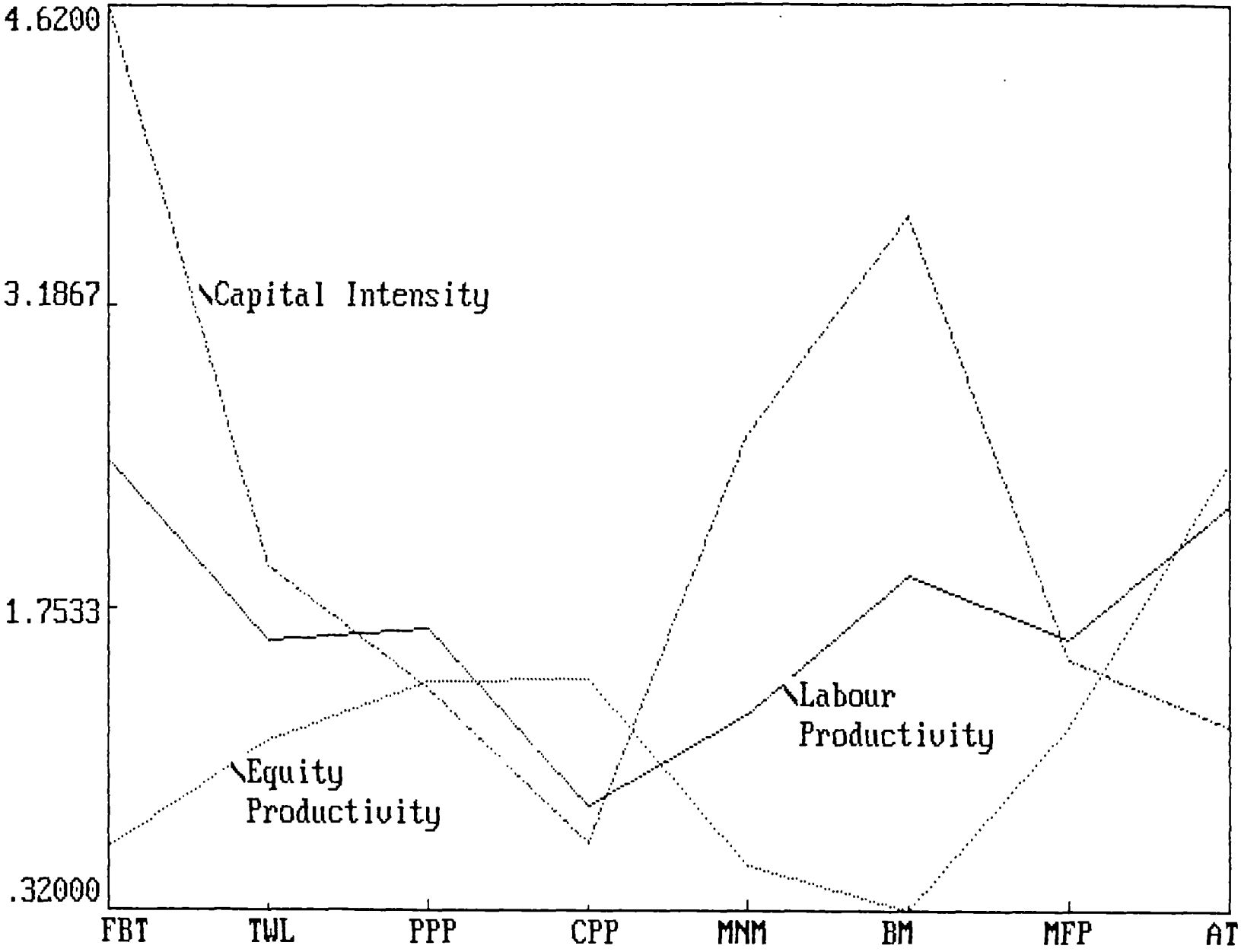


Figure 4.7 Relative sectoral productivity (labour and equity) and capital intensity ratios (foreign/domestic), 1980-1983

Figure 4.8 Relative sectoral productivity (labour and equity) and capital intensity ratios (foreign/ domestic), 1985-1989



Appendix (2)

THE QUESTIONNAIRE

1. How will you describe your production capacity in relation to the firms operating in the same sector?
   a-big
   b-medium
   c-small

2. How will you describe the level of your firm's technological intensity as regards to the firms operating in the same sector?
   a- high
   b- medium
   c- labour intensive

3. Do you employ used (second-hand) machinery and equipment in production?
   yes no

4. If you have a licensing agreement, is the licensing firm your partner?
   yes no

5. Which of the following is requested of you in your licensing agreement?
   a- that inputs are bought either from licenser firm, or from firms that are endorsed by it.
   b- that the products are to be exported to certain countries.
   c- that the use of license is restricted with the end of licensing agreement
   d- others

6. Does your firm conduct any R&D activities?
   yes no

7. If yes, which of the followings it applies?
   a- development of existing product
   b- development of a new product
   c- development of new production processes
   d- others

8. In which of the following areas is your company more effective than domestic firms as a result of having foreign capital participation?
   a- general management
   b- quality control
   c- marketing
   d- cost effectiveness
   e- accounting
   f- others

9. What is the level of competition facing you in Turkish market?
   a- none
   b- only one firm
   c- the number of rival firms are between 2-5
   d- rival firms are more than 5

10. What proportion of inputs is imported?

11. To what extent can you substitute Turkish products for those that your import?
    a-all b-some c-none

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