

**THE IMPACT OF FOREIGN
DIRECT INVESTMENT ON
POST-WAR SOUTH AFRICAN
ECONOMIC DEVELOPMENT**

BY

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ABSTRACT

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The thesis examines the theory of the determinants and welfare impact of foreign direct investment on host countries, concluding that resource transfer effects are not necessarily beneficial in certain circumstances. The distribution and penetration of foreign direct investment in the South African economy is analysed in the context of the debate about dependency and the role of technology in economic development. It is concluded that given the small amounts of fixed capital actually transferred to South Africa and the negative basic transfer which has occurred since the war, the role of technology in the economic development of South Africa has been crucial. It is argued that despite the relatively low level of foreign direct investment penetration in South Africa, efforts to reduce this penetration are hampered by continuing high dependence on foreign technology, which reflects the way in which the international technology market works. The conclusion is that this dependence can only be reduced by assimilating and copying foreign technology, which should, if necessary, be purchased separately from capital, especially if foreign investors are reluctant to risk fixed investment in the New South Africa. The statistical sources used are official South African Reserve Bank figures for capital flows and stocks, a data base constructed by the author from the Bureau of Market Research's unpublished industrial register and the results of a questionnaire administered to a stratified random sample of local and foreign manufacturing firms in South Africa.

PREFACE

The completion of a project such as this leads inevitably to many debts, visible and hidden. I would like to thank those colleagues who have sustained my enthusiasm for matters academic over the years; an enthusiasm captured by those classic lines from T.S. Elliot (1944:59):

"We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time".

This thesis is a modest attempt to add incrementally to this exploration. Fortunately we do not live in a finite world.

On a more mundane level, those who had hoped to find in this thesis a textbook treatment of economic development in South Africa since the war, will be disappointed. No attempt has been made to provide an overview of South African political economy. The focus of this study is rather on the theory of foreign direct investment and a description of its impact on the South African economy.

Neither has any attempt been made to present detailed industry case studies since the objectives of this study were much broader. There is clearly a place for detailed microeconomic studies at the firm and industry level but, as

always, detail can only be gained at the expense of generality - a problem common to all abstraction. However, the interested reader will find in the pages below an attempt to balance the demands of theory and practice, as well as an amalgam of micro- and macroeconomics. This approach may not be to everyones taste but it is appropriate for a study that falls broadly into the field of development economics.

The financial assistance of the Centre for Science Development towards this research is hereby acknowledged. Opinions expressed in this thesis and conclusions arrived at, are those of the author and are not necessarily to be attributed to the Centre for Science Development. The financial assistance of the Joint Research Committee of Rhodes University is also acknowledged.

I would like to thank the South African Reserve Bank and the Department of Trade and Industry for assistance rendered.

Finally, I would like to thank Jenny, my wife, for sharing in the frustrations and joys of the academic treadmill.

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INTRODUCTION

The layout of this thesis is relatively straightforward and needs little formal introduction. Chapter 1 deals with the relevant body of theory on the determinants and impact of foreign direct investment on host countries. Chapter 2, on the other hand, presents an overview of foreign (inward) direct investment in post-war South Africa. Chapter 3 focuses on the role of foreign direct investment in the manufacturing sector; and Chapter 4 looks specifically at the influence of foreign direct investment on the balance of payments. Chapter 5, the last chapter, reviews the policy implications, drawing on the theory and description of foreign direct investment contained in the previous chapters.

In addition, there are three appendices; the first extends the theory of immiserizing growth in the presence of tariffs to account for the implications of tariff revenue distribution; the second, outlines the research method used to compile data on manufacturing firms, the analysis of which is contained in Chapter 3; the last appendix consists of a single table setting out information calculated from the input-output tables for South Africa.

CHAPTER 1

THE DETERMINANTS AND WELFARE IMPACT OF FOREIGN DIRECT INVESTMENT ON HOST COUNTRIES

1. INTRODUCTION

This chapter presents an overview of the theory pertaining to the causes of foreign direct investment (FDI) and its effects on host countries, assuming that FDI is carried out by multi-national corporations (MNCs). Whilst FDI (a partial input measure) and foreign production (an output measure) are not one and the same thing¹, FDI has historically been closely bound up with the development of international business, it still remains the backbone of multinational enterprise and is the most frequently used proxy for the extent of MNC activity (Dunning, 1974, 1988; Eells, 1972).

Strictly speaking, FDI is any flow of lending to, or purchases of ownership in, a foreign enterprise that is largely owned and controlled by residents of the investing country (Lindert, 1986:562)². According to Helleiner (1989) the most frequently used statistics are those of the IMF which defines FDI as "investment made to acquire a lasting interest in a foreign enterprise with the purpose of having an effective voice in its management" (IMF, 1985:28). In principle it includes all flows, whether direct or through affiliates, from

the investor; and includes reinvested earnings, and net borrowings, as well as equity capital.

But the fact that FDI is associated with the transfer of many intangible assets implies that data on direct capital flows must be augmented with information on the non-financial operations of MNCs if an accurate picture of the effects of FDI on host country economic development is to be constructed (see Ragazzi, 1973). The choice of the term "multinational corporation" to describe "a business enterprise which owns and controls income-generating assets in more than one country" (Dunning, 1974:13), reflects common usage and is not intended to convey any special significance or bias³.

Interest in the role and effects of FDI has generated an intense debate over its impact on host countries, and continues to produce a seemingly endless flow of literature which exhibits a rich variety of conflicting arguments and positions. This dialectic is the result of a two-fold failure: firstly, the MNC has not been brought into the core of theoretical thinking in international economics (Krugman, 1980); and, secondly, mutually acceptable definitions of welfare cannot be agreed on (Lall and Streeten, 1977).

In order to bring some clarity to this literature, R. Jenkins (1987) suggests a fourfold classification of approaches towards FDI. He distinguishes between those writers whose main emphasis is on the benefits of FDI and those who adopt a more

critical approach. This classification is further divided into Marxist and non-Marxist perspectives in order to accommodate the methodological differences between the two paradigms. This gives the following matrix:

	<u>Pro-TNC*</u>	<u>TNC Critics</u>
Non-Marxist	Neoclassical	Global Reach
Marxist	Neo-fundamentalist	Neo-imperialist

*Note: R. Jenkins uses the term TNC in line with UNCTC usage.

Source: R. Jenkins (1987:17)

The distinction between what R. Jenkins calls the neoclassical and the Global Reach approaches seems overdrawn. With the extension of orthodox theory over the last thirty years, the view that MNCs always act as efficient allocators of resources internationally so as to maximize world welfare, has been substantially modified. There is today a keen appreciation that MNCs can reduce efficiency by making markets less perfect as a result of their oligopolistic structure, and that the role of the state is important. In this spirit, the emphasis in this study is on synthesizing non-Marxist perspectives in a broadly neoclassical framework. No attempt is made to locate the study within a broader critique of capitalist development.

The literature on FDI can be usefully divided into two broad areas of analysis : one area, drawing on the theory of the firm and trade theory, examines its causes, and the other, drawing on theories of development, its effects on host countries. Although we are principally concerned with the impact of FDI, a

brief examination of its determinants is useful because the conditions that give rise to FDI are also important factors in the development process in host countries.

The remainder of this chapter is devoted to examining the determinants of FDI and that body of theory dealing with the welfare impact of FDI on host countries. Section 2 traces the historical evolution of attempts to model the determinants of FDI. This is a useful exercise because it reveals the nature of FDI and exposes those conditions necessary for it to occur. This may be important to host countries which are trying to attract FDI, and is the subject of some discussion in Chapter 5 below.

Section 3 is a lengthy examination of the welfare (and employment) effects of FDI on host countries. For functional purposes this section is subdivided: 3.1 deals with the controversy surrounding the measurement of costs and benefits; 3.2 the welfare implications in a partial equilibrium framework; and 3.3 the welfare implications in a general equilibrium framework. 3.3 is further subdivided to enable separate discussion of capital and technology flows in the Heckscher-Ohlin-Samuelson trade model, and of immiserizing growth in the presence of foreign and domestic distortions. 3.4 focuses attention on specific factor models of trade.

The chapter ends with section 4 which provides a summary, conclusion and link with subsequent chapters.

2. DETERMINANTS OF FDI

2.1 The Traditional Approach : Capital Arbitrage

The pure theory of international trade (Bhagwati, 1964; Corden, 1974), does not take into account capital movements because it assumes that each country has a given stock of factors of production. The free movement of commodities, immobility of factors and perfectly competitive conditions that characterise it, make no allowance for trade in factor inputs (Baldwin, 1970), mainly because the conditions necessary for such trade are assumed not to exist (Kindleberger, 1969). What Caves (1982:31) calls the "key junction point" between international economics and the MNC, i.e. the export of equity capital that occurs when a company starts a foreign subsidiary, is thus ruled out.

The more sophisticated neoclassical Heckscher-Ohlin-Samuelson (HOS) model accepts as a central proposition Pigou's (1935) point "that factor movements are, at least to some extent, a substitute for trade and vice versa" (Corden, 1974a:190). Capital is assumed to move internationally in response to marginal rates of return, the tendency being to equalise returns in different countries. Assuming identical production functions, the resulting allocation of capital would tend to equalize factor proportions, and consequently prices of factors between countries (Samuelson, 1948). Mundell (1957) has explored the special case where trade and factor movements are perfect substitutes (see also Rajima, 1975), and Johnson

(1968a, 1970) has attempted to take into account technology and knowledge differentials. FDI is treated simply as a form of international capital flow, and the MNC as what Caves (1982: 31) calls "an arbitrageur of capital". In this form FDI, is happily contained within the traditional framework of trade theory.

Whilst this tranquility was more or less satisfactory before the Second World War, post-war evidence linking the growth of FDI to MNCs (Hood and Young, 1979) raised serious doubts about the ability of trade theory to explain the determinants of FDI. It is usual to trace the *locus classicus* of these doubts to the 1960 dissertation of Hymer (Dunning and Rugman, 1985), who argued that FDI can only be fully explained by analysing the behaviour of large oligopolistic private institutions or firms. More specifically, he argued that the existence and growth of FDI is related to market imperfections, which are internalized or eliminated by the MNC (Grubel, 1988).

Whilst the existence of imperfections is incompatible with positive (as opposed to normative) trade theory (Bhagwati, 1964; Corden, 1974b), Caves (1982) has pointed out that it is still possible to utilize general equilibrium tools to analyse the normative or welfare aspects of FDI and even certain positive aspects. Despite the criticism of this approach (Vaitsos, 1974), the key junction point between international economics and the MNC, i.e. FDI, still exists. By equating the transfer of capital with changes in factor endowments and factor productivity, it is possible to trace the effects of

FDI within the HOS model, and arrive at some important conclusions in regard to host country welfare.

2.2 The Modern Approach : The Transactional Hypothesis

Hymer and Kindleberger (1969) laid the foundations of the modern microeconomic explanation of the determinants of the MNC, based partly on Coase's (1937) notion of market efficiency, and partly on Penrose's (1959) study of the transactional advantages for a firm when it makes use of its internal resources.

In the first explicit attack on the received FDI doctrine, Hymer pointed out that the capital arbitrage hypothesis was inconsistent with the geographical distribution of capital flows and that MNCs were not randomly distributed among industries, as the perfectly competitive model predicts would occur. Instead MNCs were specifically linked to the presence of market imperfections. For example, where technological externalities arise from high fixed costs in capital intensive industries, great efficiency gains can be had by pursuing horizontal and even vertical integration.

As Buckley (1985:2) says:

"(at) The initial core of modern theory (i.e. the Hymer-Kindleberger tradition) was a deceptively simple proposition, that in order to compete with indigenous firms, which possess innate strengths such as knowledge of the local environment, market and business conditions, foreign entrants must have some compensating advantage".

He continues:

"At a stroke, this proposition took FDI away from the theory of capital movements into the theory of industrial organisation. For, in a perfect market, FDI could not exist because local firms would always be able to outcompete foreign entrants".

FDI can thus logically only exist where foreign firms possess some advantage over local competitors to compensate for their foreignness. These advantages are embodied in the nature of market imperfections.

Numerous such ownership-specific advantages, or what Caves (1982) calls intangible assets, have been suggested by MNC theorists (see Hood and Young, 1979, for a useful summary). Johnson (1968, 1970) suggested that the significant advantage must have characteristics of "publicness" that lower the costs of subsidiaries relative to their competitors. Technology, broadly defined to include production secrets, management organisational techniques and marketing skills, is a good example of this. Other theorists emphasize the role of economies of scale in promoting FDI through defensive oligopolistic reaction. According to the leading proponents of this view (Knickerbocker, 1973; Scherer, 1967, 1969; Penrose, 1969), the possibility of exploiting economies of scale in foreign markets causes oligopolists to follow one another into new markets as a defensive strategy.

Various ownership-specific financial and monetary advantages associated with imperfections in capital markets have also been suggested. For example, Aliber (1970, 1971) has theorized that owing to the existence of currency areas, MNCs may be able to borrow at a lower rate of interest than indigenous firms, thus capitalising on the uncertainty caused by floating exchange rates. Grubel (1968) and Rugman (1976) have studied the roles of portfolio diversification and risk reduction respectively as explanations of ownership-specific advantages, and Lall and Streeten (1977) suggest that firm-specific privileged access to raw material sources is an important source of advantage to existing and would-be MNCs alike. Radical economists, on the other hand, reject these orthodox views in the belief that MNCs are simply the agents of neocolonialist powers (Griffin and Gurley, 1985).

Whilst these conventional explanations stress different attributes of the MNC, the existence of ownership-specific advantages *per se* represents a necessary but not a sufficient explanation of the determinants of FDI (Agarwal, 1980:749) because they only explain size factors. As Hood and Young (1979:46) stress:

"To explain the choice of FDI over the alternatives of exporting and licensing, it is necessary to take into account (at least in some cases) location - specific factors such as relative costs of production, trade barriers, market characteristics and the like".

In other words, unique ownership advantages cannot by themselves explain why a firm should specifically engage in

foreign production, as opposed to domestic production or foreign licensing.

To try and explain this, theorists have extended the Hymer-Kindlberger hypothesis in a number of directions. Hymer (1970) himself, in an extension of his earlier work, argued that firms often prefer FDI to licensing or exporting because it is more profitable, either because of imperfections in the market for knowledge in the case of licensing, or because of tariff and cost barriers in the case of exporting. Drawing on the work of Coase (1937), many theorists including McManus (1972), Buckley and Casson (1976), Dunning (1977), and Casson (1979) extend this argument to account for imperfections in both intermediate and final product markets, and more importantly, provide a logical explanation of why these imperfections encourage firms to replace external markets with their own internal markets. This internalisation of external transactions across national boundaries leads to FDI, a process that is continued until the benefits and costs of further internalisation are equalized at the margin. Rugman (1980, 1981, 1982, 1985), in particular, argues that the motivation to internalize provides a sufficient explanation for FDI, but this view has not found wide acceptance (Dunning, 1979, 1988; Parry, 1985), because it ignores location-specific factors, such as trade barriers.

The internalisation argument is also not without its logical difficulties in those cases where the nature and existence - as opposed to growth - of MNCs (or any firm) does not have the

suppression of the price mechanism as its exclusive distinguishing feature (Fourie, 1989). The concept of internalisation as a legitimate explanation of the typically different relations of the firm and the market has also been subjected to heavy criticism (Putterman, 1986; Morris and Mueller, 1980). Part of the problem in accepting the transactions/internalisation approach as a general theory of international production thus lies in the ambiguous neoclassical conception of the firm - the so-called "black box" which can be subsumed within a general analysis of market pricing.

This approach represents an extension of the Hymer-Kindleberger tradition in the sense that the process of internalization provides the rationale for a firm that already has ownership-specific advantages to expand abroad, assuming profit maximisation. At a stroke, then, the static country-bound oligopolist becomes a dynamic foreign competitor, though Buckley (1983) and others (Kojima, 1978; Kumar and McLeod, 1981) have suggested that the growing internationalisation of business introduces a limit to this process as oligopoly power and the comparative advantage of firms in particular locations are eroded over time.

Another interesting extension of the Hymer-Kindleberger hypothesis is that of Aharoni (1966) who puts forward a behavioural hypothesis of why large firms engage in foreign production. Drawing on the work of Cyert and March (1963), he examines the process of decision making within firms, dropping

the assumption of profit maximisation and adopting satisficing criteria as his explanation for the motivation behind FDI. He argues that the implementation of a foreign project depends on the commitment and persuasive capability of the 'search team' in removing the natural pessimism (associated with higher risk) of top management. Partly because his analysis does not lead to testable empirical hypotheses and partly because the methodology behind his generalisations is inadequate, his views have not won wide acceptance (Agarwal, 1980).

2.3 A General Theory? : The Eclectic Approach

The existence of ownership-specific advantages and the motivation to internalise are, however, still insufficient explanations for why a firm should choose foreign production over foreign licensing or exporting. It is in this connection that host country conditions exert an influence. For example, a firm may choose to service a foreign market via FDI because the possibility of licensing advanced technology may not exist in many host countries owing to the unavailability of the necessary skills among indigenous firms. Those locational factors that are relevant include labour costs, marketing factors, trade barriers and general government policy (Hood and Young, 1979). One or a combination of these factors, may tip the balance and encourage a firm to locate production abroad rather than export or licence.

The way in which the relative importance of location-specific factors changes over the life cycle of any product has been

highlighted by Vernon (1966, 1971, 1977, 1979) who has developed a product cycle model of FDI known as the "product cycle hypothesis". In its original version, the life cycle is divided into three stages. In the first stage, when the product is new, it is produced by the innovating firm in its home market, i.e. the U.S. because of the need for close contact between customers and suppliers to overcome any teething problems, as well as the proximity of local customers with high per capita incomes. The second stage is characterised by the maturity and export of the product to countries having the next highest level of income. Expansion of demand and growing competition in these markets lead eventually to foreign production. The third stage is characterised by a complete standardisation of the product as well as its production technique, which by this stage is widely used, forcing the firm to seek cost advantages (especially on labour) in developing countries.

Although the early work on the product cycle hypothesis (PCH) has been criticised for being overdeterministic (Buckley, 1985) and over-simplified (Buckley and Cason, 1976), it was never intended as a general theory of FDI. As Vernon (1971:657) has himself pointed out, it was merely a framework to explain the early post-war expansion of US investment into Europe. The scope and complexity of the PCH has been significantly extended by Vernon (1971, 1977, 1979) himself, as well as Hirsch (1976) and Agmon and Hirsch (1979) but they fail to counter the main

criticism of the PCH that its emphasis on locational factors is not a sufficient explanation for FDI.

However, Dunning (1977, 1979, 1980, 1981, 1988) has suggested an all-embracing approach based on the necessary conditions of ownership, location and internalisation. This approach is known as the eclectic or OLI approach for obvious reasons. Firstly, it applies these three conditions; secondly, it is relevant to all types of FDI; and thirdly, it explains which of the three main vehicles of foreign involvement by enterprises, namely, direct investment, exports and licensing is likely to be preferred. The alternative ways of servicing foreign markets are summarized in the matrix below.

		Advantages		
		Ownership	Internalisation	Location
Route of servicing Market	FDI	Yes	Yes	Yes
	Exports	Yes	Yes	No
	Licensing	Yes	No	No

Source: Dunning, 1981:30

According to Dunning (1981:32):

"In each case, the possession of ownership advantages is a necessary pre-requisite for foreign involvement. But the presence of internalisation advantages suggests that enterprises will exploit these advantages by way of exports or foreign direct investment rather than by contractual resource exchanges (licensing); whereas the

equity investment route, rather than exports, will be chosen where locational advantages favour a foreign rather than a domestic production base".

Critics of the OLI approach allege that on close examination it does not appear to be a distinct theory at all, but rather a loose association of the three main elements on which it is based (Chen, 1983). Buckley (1985) maintains that the relationship between these three elements and their development over time is unclear, and that the existence of separate (and separable) ownership advantages is doubtful and logically redundant because internalisation explains why firms exist even in the absence of such advantages. However, Buckley (1983:42) has elsewhere acknowledged that the absence of locational factors renders the transactions approach tautological. It is, he says, "a concept in search of a theory".

Dunning (1988:41) has responded to these and other criticisms (Aliber, 1983; Kojima, 1978, 1982; Rugman, 1979) of the eclectic theory in the following manner:

"It is accepted that, precisely because of its generality, the eclectic paradigm has only limited power to explain or predict particular kinds of international production; and even less, the behaviour of individual enterprises. But this deficiency, if it is a deficiency, which some critics have alleged, could no less be directed at attempts to formulate a general but operational (sic) testable, paradigm of international trade".

As he points out, the eclectic approach assumes that market imperfections are endogenous to MNC's, unlike the internalisation paradigm which assumes them to be exogenous

(Buckley, 1987). This is a crucial distinction because it implies that there are significant differences between the two approaches in terms of their general applicability, and that they are not substitutes for each other as some writers imply (Rugman, 1981; R. Jenkins, 1987). The internalisation approach views MNC's as an efficient response to exogenous market imperfections, whereas the eclectic approach recognises that MNC's are potentially important creators of market imperfections. Penrose (1988), argues that the eclectic approach provides the better explanation for FDI, whilst Grubel (1988) believes that neither approach has been widely accepted, probably because the phenomenon is too complex to be captured adequately by the theory of internalisation, whilst the eclectic theory is too broad because it includes all the many driving forces behind FDI.

3. WELFARE EFFECTS OF FDI ON HOST COUNTRIES

3.1 Measurement of Costs and Benefits

The effects of foreign public and private investment on host countries, especially in the developing world, comprise a subject on which there is considerable controversy, confusion and seemingly endless debate. A large part of the apparent failure to reach an acceptable consensus resides in a failure to find mutually acceptable definitions of just what constitutes welfare. Lall and Streeten (1977:47) express this point rather succinctly when they write: "Not only does endless

debate take place about the existence and magnitude of the various costs and benefits, but there is also fundamental disagreement about what constitutes 'cost' or 'benefit'". When discussing the welfare effects of MNC's, each writer implies that his own approach is more scientific, less subjective, than competing paradigms. But the truth is that no branch of applied economics based on normative analysis of what constitutes a "cost" or "benefit" can be value free.

Although this problem arises with all forms of applied economics, analysis of the effects of MNC's on host countries has become an "ideological football" in the North-South "game", and on a more theoretical plane, a useful camouflage for hidden academic agendas. Writing in 1984 (p.339) Meier argued that:

"Criticism of the MNE is but the latest attempt to dispel complacency over the relevance of the neoclassical theory of international trade for development problems... critics of the neoclassical trade theory first attempted to discredit the theory's power to explain historical development by arguing that international trade had actually operated historically as a mechanism of inequality. After the establishment of the post war international economic institutions, the argument shifted to a criticism of the alleged biases and deficiencies of the international institutions comprising the Bretton Woods system. And now the MNE has become the object of criticism, with pessimistic warnings about future detriment to the developing countries if the MNE is not sufficiently regulated".

Whilst the contemporary debate may not be cast in quite such stark relief, there are several additional reasons why analysis of the effects of MNCs raises specific problems for welfare analysis which compound the situation. Firstly, there are large gaps in our knowledge about their activities. This is

partly related to the dearth of satisfactory empirical analysis of FDI in general owing to conceptual difficulties in quantifying its effects - what Frank (1980) calls the "imputation problem" - and partly related to the unavailability of reliable data in less developed countries (LDCs) in particular. Secondly, as Streeten (1974:257) has opined: "A major difficulty in assessing these contributions (of MNCs) is that far from being able to quantify precisely these effects, we do not even know, in general, their direction." In other words, there is *a priori* no way of knowing whether these contributions will be positive or negative.

Thirdly, assuming that the costs and benefits can be quantified and their direction established, whatever the contribution made by MNCs, it must be considered what would have occurred under a feasible alternative. This 'alternative situation' is a hypothetical situation where foreign investment is assumed absent, against which its costs and benefits in the actual case can be gauged. This is conceivably the greatest problem,

"With some analysts taking only marginal changes in foreign investment into account, some thinking in terms of nationally-owned private firms replacing large areas of foreign investment, and other considering a totally different political-economic structure, with no role for private investment at all" (Lall and Streeten, 1977: 48).

The criteria used to determine this 'alternative' or 'shadow' position crucially determine the assessment of FDI. Very few studies have attempted to tackle this particular problem, with

the notable exception of Lall and Streeten (1977) who apply the Little-Mirlees technique to measure the effects of FDI on host countries.

As Streeten (1972:211) makes clear, the relevant comparison is between the following possibilities:

- "(i) to raise the capital and other resources domestically and set up an indigenous (cement) plant;
- (ii) to borrow money abroad, hire engineers and managers and buy the know-how through a licensing arrangement;
- (iii) any partial combination between (i) and (ii), including joint ventures with foreign firms, management contracts, etc;
- (iv) to import the finished product, and
- (v) not to carry out the investment now nor to import the product, but to do without it for the time being".

Fourthly, presuming that these problems can be overcome, there still remains the policy question of whether, and in what form, FDI should be encouraged; and, more fundamentally, whether the policy makers are capable of acting in the interests of society.

Considering all these complications, some of which are intrinsically insoluble, it is hardly surprising to find large differences in opinion about the role of MNCs in host countries. At the same time, sensible economic analysis is not possible without taking some position in relation to the

definition of welfare. This action is quite defensible as long as the premises are clearly outlined and understood, and no claim to the "moral high ground" of superior objectivity is made. Whatever analytical paradigm is chosen, the discussion of MNC's must be judged on its own merits.

Generally speaking, the orthodox neoclassical view of foreign investment is that it always raises incomes and social welfare in host countries unless market imperfections are present. This conclusion is implicit in the assumptions and methods of conventional welfare theory which assumes that there is a basic harmony of individual interests in society, that individuals know best how to maximise their own welfare, that the state is the repository of 'social welfare' or the best interests of the community, and that the ideal conditions or *optimum optimorum* are those that obtain under perfect competition.

In contrast, arguments along Marxian lines stress that there is a basic disharmony of group interests in society between those who own the means of production and those who do not. This radical dialectic of group interests is diametrically opposed to the liberal philosophy underlying the neoclassical emphasis on individualism. It often arrives at opposite conclusions to neoclassical theory in respect of the impact of MNC's on host countries because it identifies the former with the "haves" and the latter with the "have nots" who occupy a subordinate rather than benign role in the world system of capitalism (Griffin and Gurley, 1976). Once again, however, its conclusions are

largely predetermined by the nature of the premises and method used.

Conventional welfare economics also faces the problem of being unable to evaluate any situation that involves altering the distributional *status quo*. Keeping to strict Paretian rules thus implies that many otherwise sensible judgements about distribution cannot be made, other than the fact that the status quo distribution is preferred to any other (Peacock and Rowley, 1975). Such "political" or "moral" judgements are left to the government, acting as "benevolent despot". But if this conceptualization of the role of government is challenged, and a utility-maximizing theory of the state introduced, it is an open question just whose interests are being pursued.

These limitations have been aired at some time or other by most economists, especially those working on development problems (Lall, 1976), and few economists today would accept uncritically the conclusions of conventional neoclassical economics. Nevertheless, neoclassical tools do have an important role to play in clarifying the various issues, several of which have already been identified, bearing in mind that given the underlying premises on which they are constructed, there is often 'another side to the story'. This situation is summed up well by Caves (1982:252), when he writes that:

"Economic analysis has played no great part in resolving disputes between critics and defenders of the MNEs' role in development processes. Nevertheless, economics has

an important role to play because MNCs' allocative decisions affect existing imbalances and distortions in host economics. There is, after all, a much greater degree of concurrence that key markets in developing countries are malfunctioning, or important prices are misaligned to their shadow equivalents, so that saving and investment, the foreign-exchange rate, wage rates, returns to human capital, and other such important magnitudes may be far off the mark".

In South Africa the debate about the costs and benefits of foreign capital in the development process has been a particularly lively one (Legassick and Hemson, 1976; Lipton, 1976; Rogers, 1976; Suckling, 1975; United Nations Centre Against Apartheid, 1978, 1980; Leape, 1991) because of its centrality to the wider debate on the relationship between the institutions of apartheid and capitalism which has dominated the post-war history of South African political economy (Lipton, 1986). Broadly speaking, it is possible to identify two views of this relationship; a conventional or liberal view which construes "irrational" apartheid policies as dysfunctional to capitalism (Butler, Elphick and Welsh, 1987; Moll, 1991), and a revisionist or marxist view which construes apartheid policies and capitalism to be mutually reinforcing (Murray, 1988).

Depending on which view one subscribes to, foreign capital is thus seen as either improving welfare or increasing labour repression and exploitation. Taking advantage of widespread international concern about racism, marxist commentators in particular have used opposition to apartheid as a form of camouflage to disguise their attack on capitalism in South Africa. The effect of this has been to retard flows of capital

to South Africa and to increase pressure for disinvestment, irrespective of a growing realisation that this was inimical to development. In many respects the debate about the role of foreign capital in South African development is mirrored in the broader "dependency" debate about the merits of capitalist development itself, and this issue is taken up again in Chapter 2 below.

3.2 Neoclassical Analysis

Much of the early research on the welfare effects of FDI was in the neoclassical tradition, broadly defined. In an influential early treatment, MacDougall (1960) analyses the static effects of capital flows on host and home countries in terms of marginal productivity theory (see also Kemp, 1962a, 1962b). Based on the capital-arbitrage concept of FDI, he assumes that foreign capital increases the host country stock of capital and reduces the home country's stock on a simple one-for-one basis. He also assumes that the perfectly competitive economic system is in long run full employment equilibrium; that the balance of payments is in equilibrium; that there are no terms of trade effects; that returns to scale are constant; that there is no taxation; and that both the size of the labour force and the stock of domestically owned capital are independent of the stock of foreign capital.

MacDougall's methodology can be examined with the help of Figure 1.1, where the marginal productivity and quantity of capital are indicated along the vertical and horizontal axes

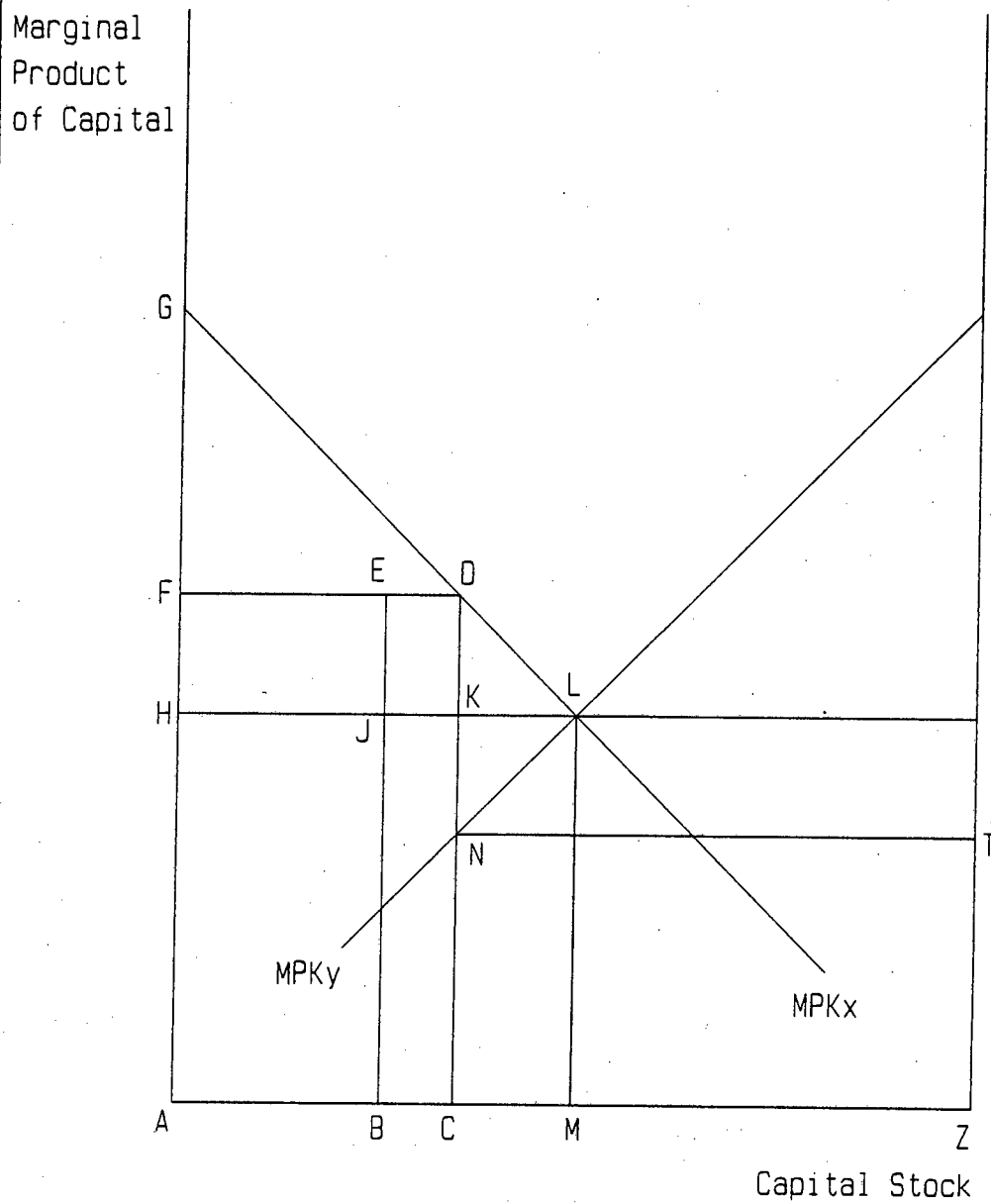


Figure 1.1
 Static Neoclassical Analysis of the
 Welfare Effects of Capital Flows

respectively. We assume that the world capital stock consists of the quantity AZ , and that there are two countries, X (host country) and Y (home country). Their marginal productivity schedules are shown originating on the left and right hand sides of Figure 1.1 respectively. In the initial equilibrium, AC of capital is held in country X of which AB is domestically-owned and BC foreign-owned. Total output in country X is $GDCA$, of which $FEBA$ is profits on domestic capital, $EDCB$ is profits on foreign capital and GDF represents wages. Capital (both domestic and foreign-owned) in country X has a yield of AF . In country Y there is no foreign capital and the yield is ZT .

Assuming that the restrictions limiting foreign capital in country X to BC are removed, and that the owners of capital in country Y invest CM there, these investments reduce output in Y and increase it in X by the amounts $CMLN$ and $CMLD$ respectively. As a result, rates of return are equalised in the two countries at ML and the total productivity of the world's capital stock is increased by the area NLD , irrespective of what form the capital movement takes. From the host country's point of view, foreign profits become $JLMB$, a net gain to foreign investors of NLK . Since the marginal product of capital, and hence the profit rate, has fallen, total profits on host country domestic capital decline to $HJBA$. In contrast the relative yield on labour has increased by $FDLH$, although $FEJH$ is merely a transfer from domestic capitalists. The host country as a whole gains $EDLJ$, part of which (DLK) represents pure

productivity gains, and part of which (EDKJ) represents the transfer of foreign profits to domestic real wages. The extent of this redistribution depends, of course, on the elasticities of the respective marginal productivity schedules.

From similar, if simpler, analysis, McDougall concluded that host country gains would be small relative to the profits accruing to the new foreign capital (KLMC). Though not stressed by him, it is also clear that the capital inflow causes a redistribution of income from both domestic and foreign capital to labour, something that labour unions in host countries such as South Africa conveniently overlook. Similarly, it can be seen that world welfare is increased by the reallocation of resources (see also Caves, 1982:231), though such efficiency implications are beyond the scope of the present discussion.

MacDougall then enriches his static framework by gradually relaxing certain of the assumptions and tracing the implications of taxation, external economies, increasing returns, and imperfect competition. He finds that the most important direct benefits from FDI come via higher tax revenues, unless the introduction of tax reduces the rate of return on capital to such an extent that capital inflow ceases. Suppose, for example, that a rate of tax is imposed by the host country on foreign profits. Then the profits accruing to the owners of the extra foreign capital decline from $KLMC - EDKJ$ to $1-t (KLMC - EDKJ)$. A high foreign profits tax clearly makes a significant difference to the gains derived by the host

country. Tacit recognition of this is given by the eagerness with which double taxation agreements are entered into by trading partners because tax revenue accruing to the host government represents a loss of potential revenue to the home government (see Caves, 1982:229f.). The issue of an appropriate FDI-tax policy for South Africa is taken up in Chapter 5 below.

Another source of benefit to the host country occurs when external economies are introduced as a result of the public good nature of certain aspects of the FDI package. According to Parry (1980), these can take the form of either direct or indirect benefits. The direct efficiency gains created by the superior know-how of the MNC, manifest themselves in higher marginal productivity of foreign capital. This is represented in Figure 1.2 by the twisting of MPK_X (as opposed to a shift of the entire curve) on the assumption that MNC's retain some control over their technological advantages because of imperfections in the market for knowledge. In other words, the marginal productivity of foreign capital is greater than that of the domestic equivalent. The relevance of this higher productivity for the pattern of South African economic development is examined in Chapter 3 below.

In Figure 1.2 AB represents domestic capital, BD foreign capital, MPK_X the marginal productivity of domestic capital, and MPK'_X the marginal productivity of foreign capital. Assuming that capital responds to inter-country return

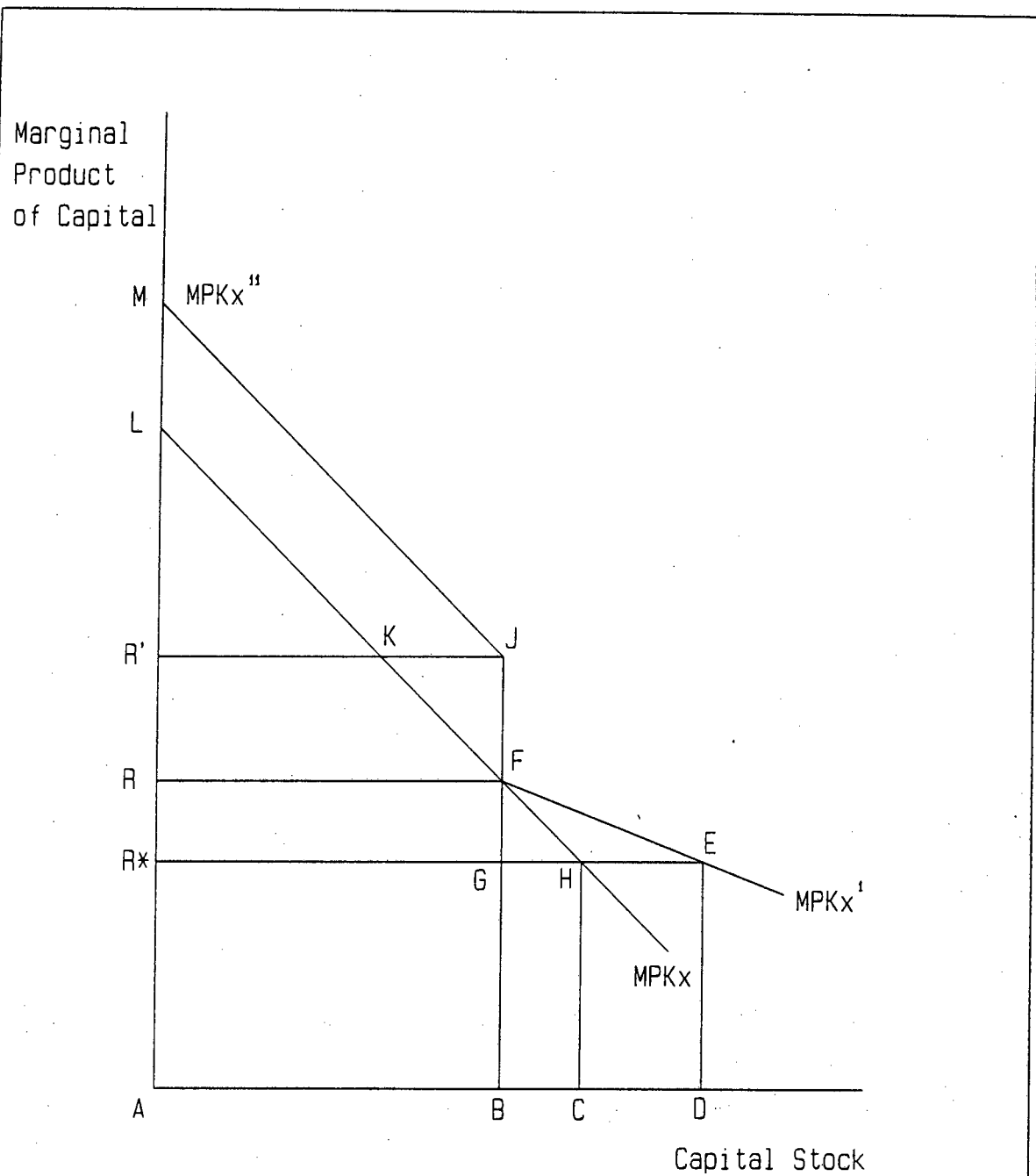


Figure 1.2
The Impact of Capital Flows with External Economies
on Host Country Welfare

differentials, the inflow of foreign capital will cease at R^* when they are equalized. Domestic output will increase by BDEF, of which BDEG is the return to foreign capital and GEF is the net gain to domestic factors. On the other hand, if domestic capital had expanded instead, the increase in output would only be BCHF of which GHF is the net gain to domestic factors.

Since the net gain to domestic factors owing to the presence of foreign capital (GEF) is greater than that owing to increases in domestic capital (GHF) in Figure 1.1, we must conclude that such direct efficiency gains constitute an important added benefit of FDI that accrues to domestic labour not domestic capital (Bhagwati and Srinivasan, 1981).

Indirect efficiency gains are associated with the spread of MNC technology and know-how (as distinct from economies of scale) to indigenous firms. They include manpower training of MNC employees who are later hired by domestic firms, managerial, technical and scientific skill development, and demonstration and competition effects in domestic firms. The importance of these gains in South African manufacturing is examined in Chapter 3 below. They reflect themselves in increased productivity for domestic firms, resulting in an upward shift of the MPK_x curve to MPK_x'' in Figure 1.2. The increased efficiency of domestic capital results in increased returns to both domestic capital and labour. The gain to domestic capital is given by $RFJR'$, and the gain to labour is LKJM.

The net gain to the host country is LFJM, which, depending on the extent of the indirect benefits, can be considerable, depending on the elasticities involved, as can be seen in Figure 1.2.

MacDougall (1972:142) does point out, however, that if the improvement in technology was heavily biased towards labour saving as opposed to capital saving, this may enable domestic firms to produce the same output with their existing capital but with less labour while the marginal product of labour at full employment was reduced. Under these circumstances it is possible that the host country may lose if the economies caused an absolute loss to labour that was greater than the gains to capital and tax. Whilst there is no obvious *a priori* reason to expect such economies to be biased in favour of either factor, at least under the assumption of perfect competition, this possibility does have implications for wages and employment in South Africa where there has been a noticeable deepening of capital in the manufacturing sector in recent years. These implications are examined in Chapter 3 below.

A further source of benefits may occur through internal economies of scale owing to a greater capital stock and higher output. In this case, the proportionate growth in output is greater than the proportionate increase in labour and capital inputs, irrespective of ownership. The marginal product of both domestic and foreign capital will increase, shifting the curve MJFE outwards in Figure 1.2. This again seems likely to bring a gain to the recipient country. There could conceivably

be a loss for reasons similar to those discussed above, but this seems to be even more improbable, because an increase in scale is less likely to cause changes in production methods than the presence of additional FDI *per se*. Obviously the reverse is also possible, which in the context of disinvestment in South Africa, is likely to compound the situation.

Obviously not all the effects of foreign investment are beneficial. The relaxation of the assumption of perfect competition can lead to a range of possible outcomes. For example, if such relaxation leads to labour saving techniques of production as might be expected when the market for technology is imperfect, owing to, say, "technological dualism" (Singer, 1970-71) and "inappropriate" technology (Leibenstein, 1960), then as MacDougall points out, it is possible that the host country might suffer a loss of welfare (see also Streeten, 1974). Cost advantages may also not be passed on to consumers through lower prices or to workers in higher wages, but rather accrue to the MNC as profits. Moreover, fluctuations in the net inflow of capital and the fact that part of foreign earnings will be remitted to the home country, may create balance of payments difficulties which require deflationary measures that impact adversely on domestic employment and growth. The implications of these problems for South African economic development are dealt with in Chapters 3, 4 and 5 below.

The conclusion derived from the standpoint of host country welfare is that foreign investment is beneficial only as long as the consequent increase in real income is greater than the concomitant appropriation of profits by the foreign investor. As long as foreign investment increases productivity and this increase is not wholly absorbed by the investor, domestic factors must benefit. These benefits can accrue to domestic labour in the form of higher wages, to consumers by way of lower prices and to the government through higher tax revenue. They are more likely to be realised when external economies and economies of scale are present.

Against these benefits must be set the costs of foreign investment to the host country. Such costs may arise from a deterioration in the terms of trade, problems of balance of payments adjustment, and from the introduction of monopoly elements into the economy. The problem, as MacDougall admits, is that partial equilibrium analysis is an unsatisfactory method for dealing with such issues. In total, therefore, the predictions of the model are fairly ambiguous, even though it has been extended to account for growth (Pitchford, 1970; Brems, 1970) and comparative-static methodology (Pearce and Rowan, 1966).

The main criticisms levelled at this approach arise from limitations associated with the use of a comparative static framework to analyse dynamic capital flows (Balogh and Streeten, 1960), and from the assumption of perfect competition (Hymer, 1976; Kindleberger, 1969; Caves, 1971). The Post-

Keynesian school also argues that the neoclassical technique of aggregating the capital stock is analytically incorrect, because, they argue, capital simply cannot be aggregated (Harcourt, 1972; Richardson, 1981/2). In general, the neoclassical approach tends to emphasize the benefits of foreign investment because analysis of its costs is difficult whilst the assumption of perfect competition is retained. Although no direct attempt is made to quantify these costs and benefits, they are examined in the context of post-war South African economic development in the chapters below.

3.3 The Heckscher-Ohlin-Samuelson Model

3.3.1 Capital Inflow and Technology

Despite the criticisms levelled at the view of FDI as capital arbitrage, several authors doing general equilibrium work on FDI adopt this approach in order to apply conventional international trade theory to the question of how MNC's affect resource allocation (e.g. Bhagwati, 1973; Hamanda, 1974; Brecher and Diaz-Alejandro, 1977; Bhagwati, 1979; Markusen and Melvin, 1979).

The advantage of using such general equilibrium (GE) analysis is that, unlike partial analysis, it simultaneously allows the examination of employment, distribution, allocation and real income effects in a host country. Most of the model building that accounts for MNC activity in a GE framework is derived directly from the standard Heckscher-Ohlin-Samuelson (HOS) model, which has the great advantage of concentrating on

the interrelationship between a nation's pattern of international trade and its endowment of factors of production (including capital). By equating the MNC's transfer of capital with changes in factor endowments and factor productivity it is thus possible to trace the effects of FDI and arrive at some important conclusions in regard to host country welfare.

In its simplest form, the HOS model assumes

- i) two countries with identical production functions
- ii) two traded commodities, produced under conditions of constant returns to scale, nonreversability of factor-intensity ranking, and with different production functions
- iii) two factors of production, fixed in supply and internationally immobile
- iv) perfect competition
- v) balanced trade (Corden, 1974).

The theory predicts that a country will have a comparative advantage and therefore will export those products in which its most abundant factor is used relatively intensively; conversely it will import commodities embodying factors with which the country is poorly endowed (Chacholiades, 1981). Extensions of the basic model to incorporate FDI involve modification of assumption three, so that capital is mobile internationally.

Allowing for such factor mobility, Rybczynski (1955) has shown that if the goods-price and factor-price ratios are fixed, then an increase in the endowment of capital with a constant labour supply, will shift labour to the capital-intensive industry, resulting in a drop in capital employment in the labour-intensive industry. This causes a more than proportionate increase in the output of the capital-intensive commodity, and an absolute decline in the output of the other commodity. For a country with a comparative advantage in the production of capital-intensive commodities, capital accumulation will have what Krauss and Johnson (1967:298) call an ultra-pro-trade biased production effect, i.e. more than the whole increase in national income is devoted to the purchase of imports so that the demand for home-produced goods actually falls and the country becomes absolutely less self-sufficient at constant terms of trade.

In other words, if the capital inflow can be absorbed without diminishing returns, the resulting change in the factor-endowment ratio will bring about a relative and absolute increase in the output of the capital-intensive good, Y, and a similar decline in the output of the labour-intensive good, X (Rybczynski, 1955). Under such circumstances the Stolper-Samuelson theorem (1941) predicts that there will be no decline in the reward to capital, which is equivalent to assuming a constant marginal product of capital (Bhagwati and Srinivasan, 1983). In this case, all returns to capital inflows accrue to the owners of foreign capital and its

presence, or absence, is therefore a matter of indifference to host countries, assuming full employment *ex ante*.

But keeping a constant goods-price ratio is unrealistic because it ignores the impact of demand, and results in a movement of the equilibrium from P_0 to P_1 in Figure 1.3 which implies that the labour-intensive good X is an inferior good because less of it is produced despite the higher income (Sodersten, 1980). In order to examine the welfare effects of capital inflow on host countries it is therefore necessary to rule out the possibility that one of the goods is inferior, hence dropping the overly restrictive assumption of a constant capital:labour ratio. In terms of the Krauss and Johnson classification given in Figure 1.3, capital accumulation cannot have an ultra-pro-trade-biased or an ultra-anti-trade-biased production effect.

Keeping a constant goods and/or factor price ratio, the new equilibrium will be at point P_1 in Figure 1.3, but excluding inferior goods, the new equilibrium can only lie on T_1T_1 somewhere between the dotted lines P_0A and P_0B . The precise point will be determined by demand factors in the form of indifference curves, which are not shown. The slope of any price line tangent to this segment will be steeper than f_0 or f_1 , which implies that the relative price of the import-competing good, Y, will be lower in the new equilibrium situation. Because the import-competing sector, Y, is the capital-intensive one, the inflow of capital causes an

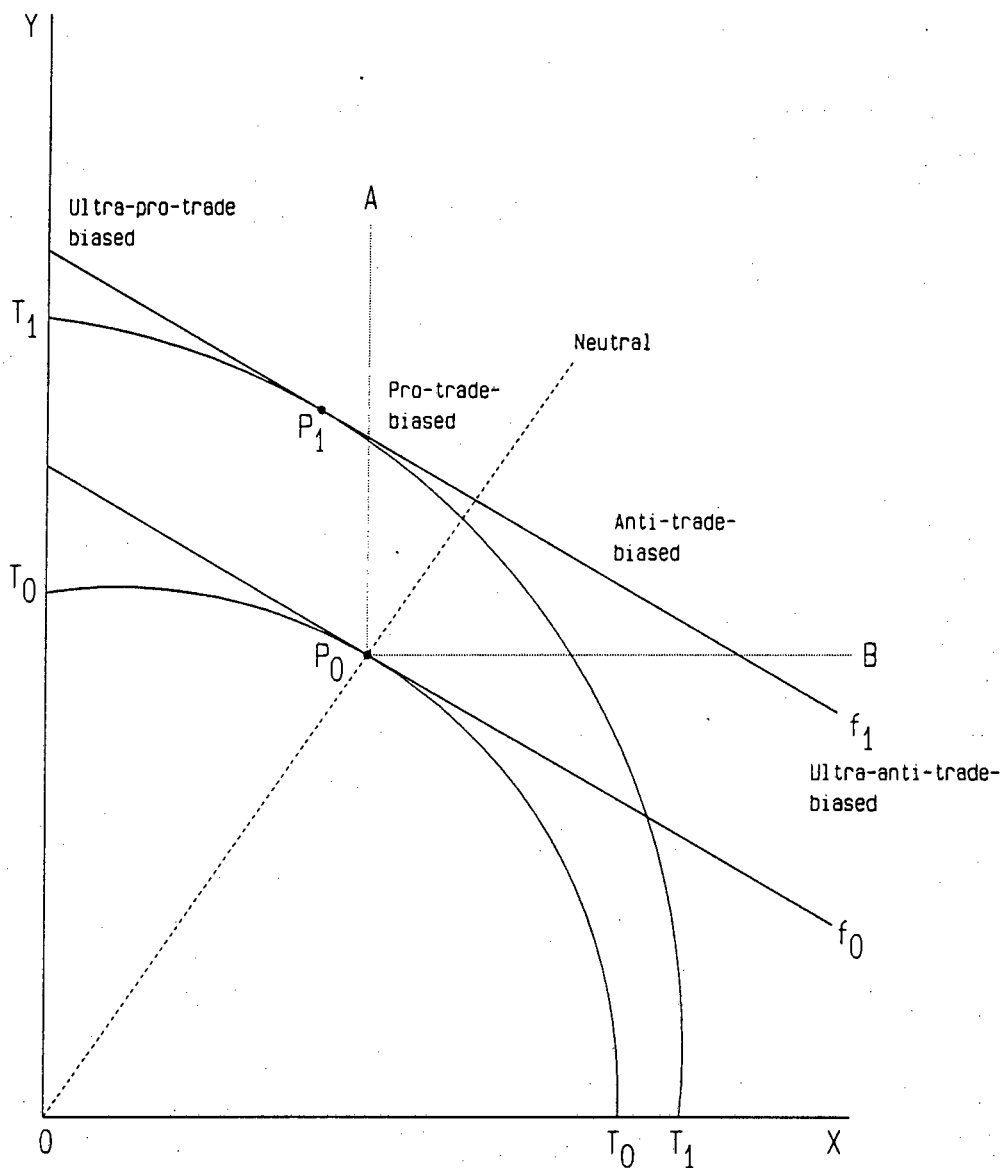


Figure 1.3
Capital Accumulation, Production and Welfare

improvement in the country's terms of trade and potential welfare. However, had we assumed that the export sector, X, was more capital-intensive, a capital inflow would have caused a deterioration of the terms of trade and potential welfare. The implications of this for the pattern of FDI in South Africa are examined in Chapter 2 below.

Gains in productive capacity represented by outward shifts of the production possibility curve can, of course, be caused by increases in factor endowments or factor productivity or both. Without going into the detailed consequences of technical improvements on the pattern of economic growth, the HOS model provides a convenient way of summarizing the combined effects of capital inflow and technological improvements. This is particularly relevant to the analysis of FDI where both are involved.

FDI can have either a positive or a negative effect on a country's terms of trade depending on whether it takes place in the export or import-competing sector, and on whether technical progress is Hicks-neutral, capital- or labour-saving. It is rather surprising that given the nature of the FDI "package" more attempts have not been made to model it in terms of technical progress (but see Minabe, 1974), especially since so many commentators maintain that technology, not movement of capital, is at the heart of FDI (Johnson, 1970; Lall, 1978; Hood and Young, 1979). Perhaps one of the notable exceptions to this is Vernon's (1966, 1974) product cycle theory, but it

is difficult to see how this can be integrated into standard GE analysis, if it is possible at all.

According to Sodersten (1980), neutral technical progress will always have a negative effect on the relative price of the good produced in the innovating sector. In this case FDI in the export sector will always lead to a deterioration in a country's terms of trade; and FDI in the importables sector to an improvement.

The effects of biased innovations are similar. Capital-saving technical progress in the capital-intensive sector, and labour-saving progress in the labour-intensive sector also have the effect of reinforcing the impact of capital inflows into these sectors. Hence if the import-competing sector is capital-intensive, and capital-saving technical progress takes place in this sector, the terms of trade will deteriorate. And if importables are labour-intensive and labour-saving technical progress occurs in this sector, the terms of trade will improve.

But when labour-saving innovations occur in the capital-intensive industry and capital-saving innovations in the labour-intensive industry the results are ambiguous because we cannot tell *a priori* whether the price of the innovating product will increase or decrease. The effects of the capital inflow may thus be counteracted by the nature of the associated technical progress. Perhaps because of such ambiguity, there have been few attempts to equate FDI with combined capital

inflow and technical progress. With the exception of the latter ambiguous case, the effect of technical progress is to reinforce the impact of capital inflow irrespective of which sector it goes to.

In the case of developing countries the existence of a limited number of production processes - the "factor-proportions problem" - as well as the "inappropriateness" of the technology transferred by MNCs constitute major limitations on potential welfare gains and employment (Eckhaus, 1955; Leibenstein, 1960; Singer, 1970/1; Black, 1983). The transfer of capital-intensive technology to labour-surplus economies exacerbates the factor proportions problem and may even reduce labour absorption. More information on the role of technology in South Africa is contained in Chapters 3 and 5 below but the impact of "inappropriate" technology on welfare and employment is demonstrated in Figure 1.4 by dividing the typical less developed country (LDC) economy into two sectors, an industrial sector (Y) and an agricultural sector (X).

In the industrial sector (Y) there are (or entrepreneurs perceive there to be) fixed technical coefficients of production, giving a fixed-proportions production function. In the agricultural sector (X) production techniques are assumed to be variable but only within a limited range of factor proportions, which means that its factor absorption capacity is constrained. These production functions are shown in the Edgeworth box diagram in Figure 1.4, where the ridge lines

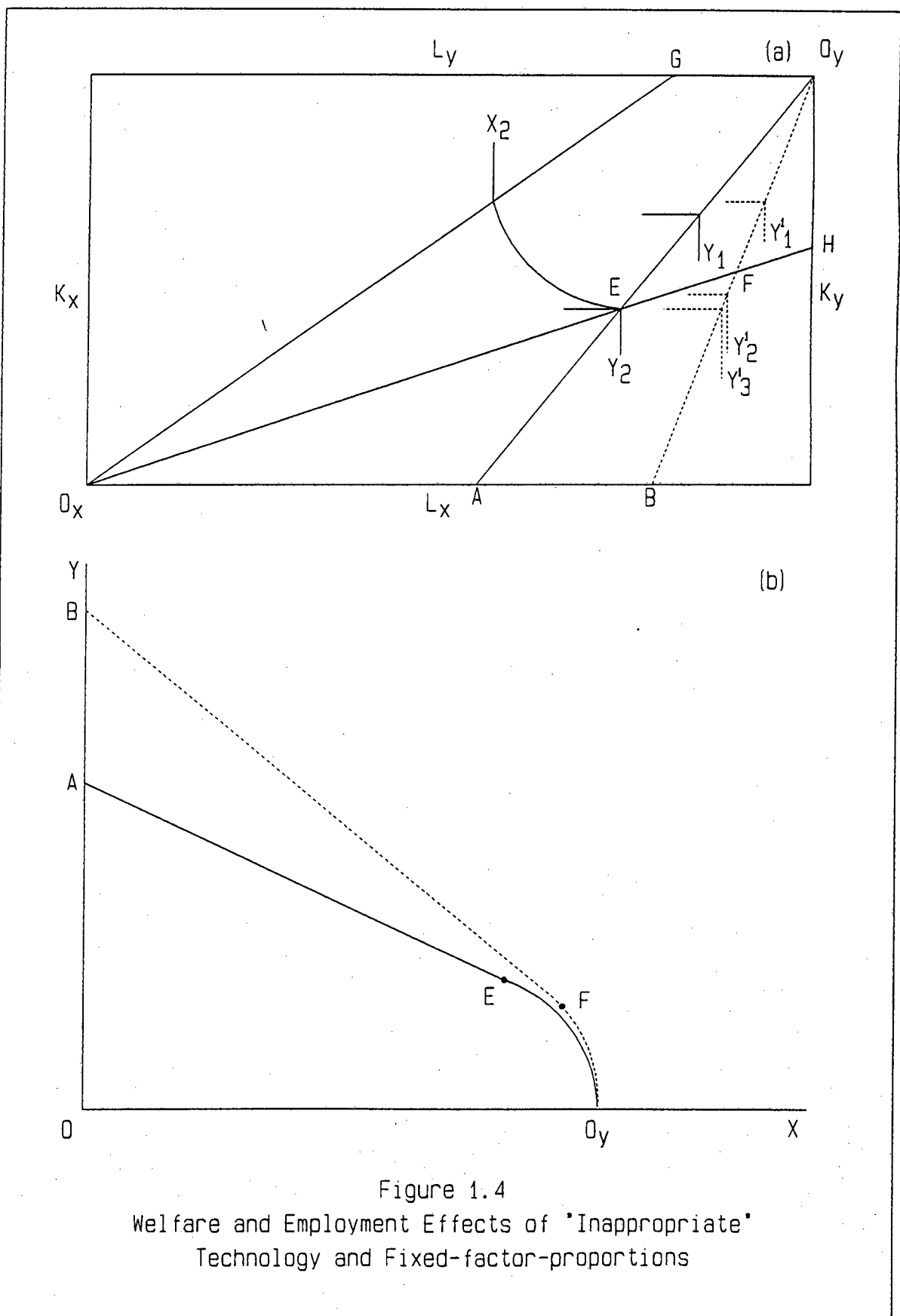


Figure 1.4
Welfare and Employment Effects of 'Inappropriate'
Technology and Fixed-factor-proportions

representing the economic limits of production in sector X, the agricultural sector, are given by O_XG and O_XH . The Leontieff production function for sector Y, the industrial sector, is given by O_YA . The efficiency locus or contract curve maximising total output can be derived by finding the maximum output of X, for every given level of Y's output: for example, if the output of Y is at level Y_2 , then the maximum attainable output of X is given by level X_2 along the ridge line O_XH . Applying this procedure to each level of output Y, we obtain the efficiency locus, O_XE cum AE and EO_Y . This information may be used to trace out the corresponding transformation curve AEO_Y in Figure 1.4. Output combinations along EO_Y indicate full employment of both factors, and output combinations along AE represent some degree of labour unemployment.

The implications for labour unemployment of the transfer of inappropriate technology can now be explained under the assumption that it causes capital-using technological progress in the capital intensive sector of the economy (see Leibenstein, 1960). This enables sector Y to employ fewer units of both capital and labour in the production of any given level of output Y, at the same time that it uses a more capital intensive production technique than before. The Y-isoquants accordingly shift from Y_1 and Y_2 to Y'_1 and Y'_2 causing a shift in the efficiency locus because production process O_YB "dominates" process O_YA . For example, if sector X produces the output levels X_2 , then the maximum attainable Y

output is given by Y'_3 along ray O_YB , rather than by Y_2 along ray O_YA . Repeating this process yields a new efficiency locus, O_XF cum BF and FO_Y . This implies a shift in the transformation curve from AEO_Y to BFO_Y , effectively lengthening the labour-unemployment segment from AE to BF . This example illustrates how the transfer of inappropriate technology by MNCs can potentially aggravate the factor proportions problem, thereby having a deleterious effect on employment and underemployment.

In the case of South Africa, the trend towards capital-deepening during the recent past is a worrisome feature in the context of growing unemployment. However, as we point out in Chapters 2 and 3 below, there is no evidence that MNCs are the cause of this capital-deepening, and they are more likely to make adaptations to imported technology than local firms. Whilst it is declining, South Africa's dependence on foreign technology is still disturbingly high and is likely to remain so until (and if) domestic capital goods production is rapidly expanded. This dependence reflects the way in which the world-wide technology market operates (see Chapter 3) but the transfer of capital-intensive production techniques to developing labour-surplus countries is not necessarily undesirable if it lowers costs of production.

There is a growing awareness that the "appropriateness" of foreign technology should be judged on the basis of unit costs of production rather than in relation to factor endowments

(Meth, 1990). In South Africa, for example, the trend towards increasing capital-intensity is a rational response to higher labour costs (see Chapter 3). Whilst this may not greatly improve the unemployment situation in the short term, competitiveness is crucial to the success of current efforts to penetrate export markets, the trade strategy which offers the most hope for long term development (see Chapter 5).

The analysis above establishes that capital accumulation is not unambiguously beneficial. When the importables sector is capital-intensive, an inflow of capital improves the country's terms of trade and welfare, but when the exportables sector is capital-intensive, an inflow of capital causes a deterioration in the terms of trade and level of welfare. Increases in factor productivity via the transfer of technology are likewise not always beneficial. This depends on the nature of the technical progress and on the sector in which it occurs. In developing countries the existence of a "factor proportions problem" combined with the "inappropriateness" of foreign technology, are added complications, especially in the presence of surplus labour. Chapter 3 below examines these complications in the South African situation.

There exist, then, a large number of cases where capital accumulation and/or technical progress reduce potential welfare in the presence of market distortions. The introduction of demand factors into our analysis, in the form of indifference curves, allows us to examine the welfare

implications of these distortions in more detail. It is usual to distinguish between foreign and domestic distortions, and it is to the analysis of these that we now turn.

3.3.2. Foreign Distortions and Immiserizing Growth

Based on the observations of Edgeworth (1894), Prebisch (1950) and Singer (1950), Bhagwati (1958) has shown that it is theoretically possible for the terms of trade to deteriorate to such an extent that the welfare of a "large" host country, i.e. one with a degree of monopoly/monopsony power, actually declines as a result of trade- or resource transfer-induced growth (Chacholiades, 1981:151). This possibility is illustrated in Figure 1.5, assuming that X is the capital-intensive export sector, where the initial production equilibrium is at P_0 , on the production possibility curve T_0T_0 , and consumption occurs at C_0 , where the indifference curve W_0 , is tangent to the world price f_0 . Capital accumulation is assumed to expand the production frontier non-parametrically to T_1T_1 . As a result of the decline in the relative price of exports, the terms of trade deteriorates to f_1 and production moves to P_1 and consumption to C_1 . As can be seen, this implies a lower level of welfare W_1 .

This GE analysis demonstrates that it may be misleading to rely on MacDougall-type partial analysis because factor growth may not be synonymous with welfare improvements. According to partial analysis, capital inflow always increases host country welfare when diminishing returns to capital operate, because

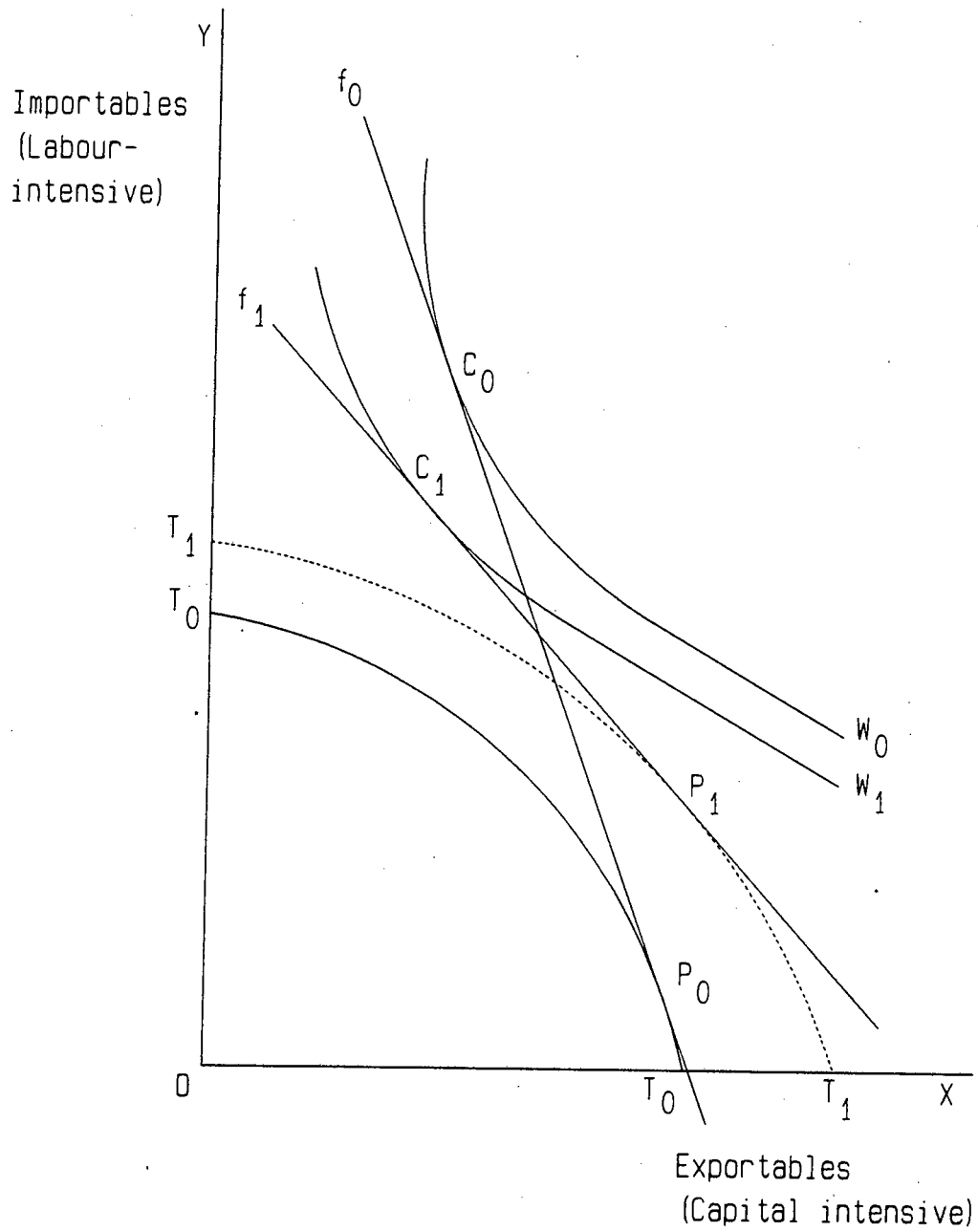


Figure 1.5
Foreign Distortions and Immiserizing Growth

its contribution to the national income of the host country exceeds its return, leaving an intra-marginal surplus that accrues to labour (Bhagwati and Srinivasan, 1981). In contrast, the analysis of capital inflow in a two-sector, two-factor, two-commodity framework, that incorporates demand as well as supply, reaches a more qualified conclusion. Diminishing returns on the supply-side combined with demand-side preferences will determine the extent of relative price changes, which may or may not result in an improvement in welfare, and in the large country case, will always cause a deterioration in the terms of trade when capital accumulation takes place in the capital-intensive export sector.

Ironically, if the effects of the capital inflow are offset by the nature of the associated technical progress, this may prevent immiserizing growth in the large country case where the capital inflow goes into the capital-intensive export sector. The pattern of FDI in South Africa and the impact of the associated transfer of technology is examined in Chapters 2 and 3 below. However, it seems plausible to argue that South Africa is largely a price taker in world markets (Lawrence and van der Westhuizen, 1990) and that the large country case analysed in this section is therefore inapplicable, although this may not be true of certain mineral exports like coal.

Immiserizing growth only occurs because of the existence of a distortion (either foreign or domestic) that is not offset by an optimal policy (Chacholiades, 1981:216). In the foreign

distortion case above, the country is implicitly a large one with monopoly-monopsony power in international trade, and it does not pursue an offsetting optimal tariff policy. However, immiserization is also possible when domestic distortions are present, even in the case of a "small" country.

3.3.3 Domestic Distortions and Immiserizing Growth

The theory of immiserizing growth is usually associated with the large country case described above where foreign distortions are present. It is less well known that domestic distortions may also cause immiserizing growth (Johnson, 1967). Although domestic distortions can occur in countries of any size, it is usual to examine their impact on welfare in the small country case, in order to exclude foreign distortions by assumption. There is a large class of situations where capital inflows may cause immiserization because of domestic distortions (Bhagwati and Brecher, 1980, 1981; Bhagwati and Tironi, 1980; Brecher and Findlay, 1983; Neary and Ruane, 1988; Sechzer, 1988; Tsai, 1987). Arguably the most important cause of domestic distortions (Chacholiades, 1978), and one that is particularly relevant to this study, is that of tariff protection.

As Johnson (1967:153) points out, as a result of a tariff, additional factors of production (especially capital, which is more mobile internationally) are attracted to the sector in which the host country does not have a comparative advantage. This misallocation causes additional welfare losses over and above those directly associated with tariff-induced distortions

under initial free trade conditions. If this waste of resources is greater than the increase in potential output per head, immiserizing growth will occur.

In general, this possibility depends on the tariff rate, the nature of the factor used intensively in the protected sector, and the elasticities of substitution between factors. Capital inflows into capital-intensive protected sectors are a particular problem because as Corden (1974:334) points out, in the simple Heckscher-Ohlin-Samuelson model, with no factor or trade reversals, a country that is a net capital importer must have capital-intensive importables so that protection will induce capital inflow. The reason for this is that a country is likely to import that product which is intensive in the country's relatively scarce factor, and if the country imports capital, then, presumably, its scarce resource is capital.

This situation can be analysed with the help of Figure 1.6. Before the capital inflow, the "small" country, which provides tariff protection to its capital-intensive import-competing industry, produces at P_0 and consumes at C_0 . The domestic (tariff-inclusive) terms of trade (given by the absolute slope of parallel broken lines, d_0 , d_1 , d_2 and d_3) is lower than the fixed world terms of trade (given by the absolute slope of unbroken parallel lines f_0 , f_1 , f_2 and f_3). The capital inflow causes the transformation curve to shift outwards to T_1T_1 . Production shifts to P_1 , where the real value of production at fixed world prices is lower than at P_0 . Consumption shifts to

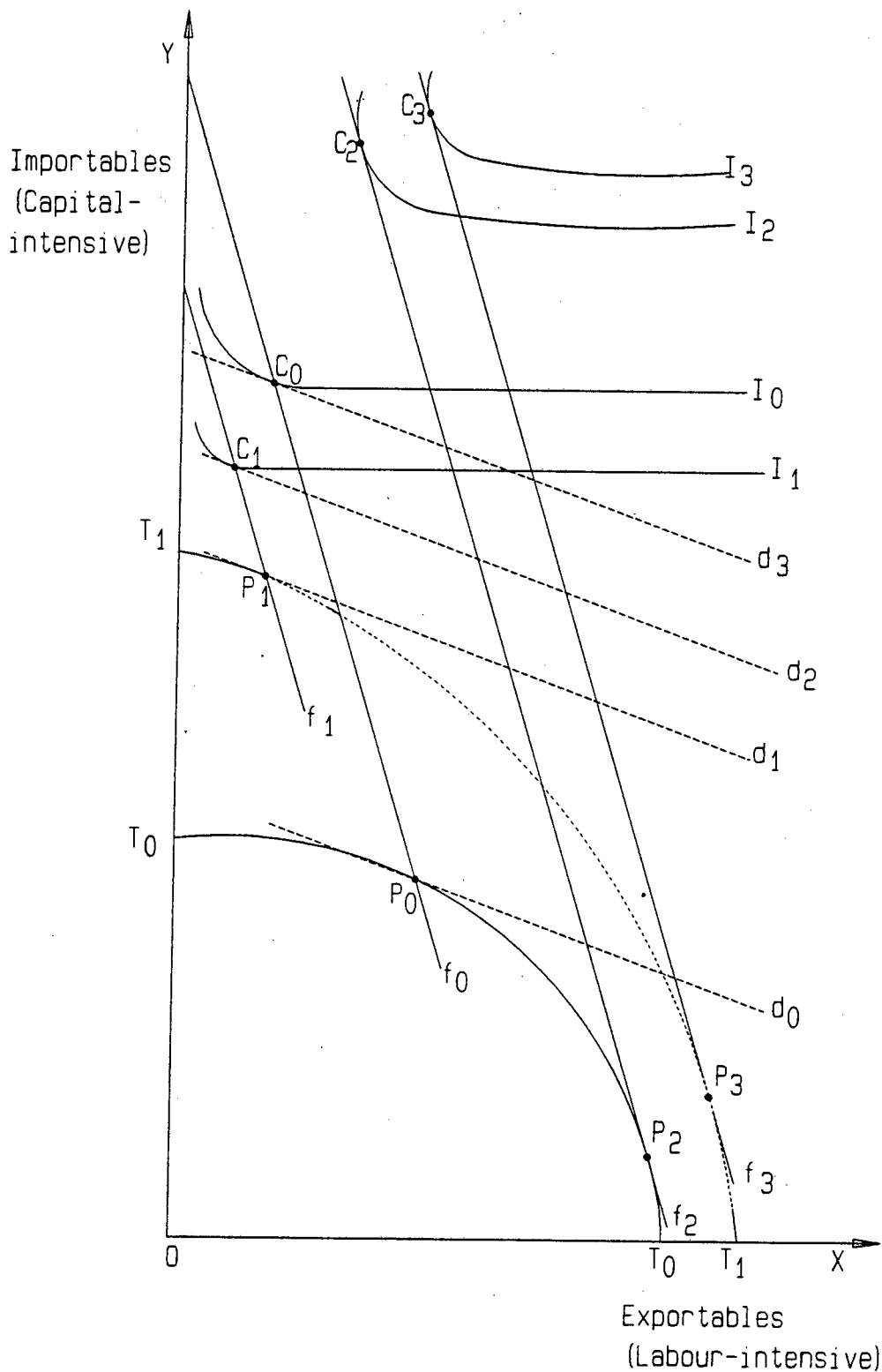


Figure 1.6
Domestic Distortions and Immiserizing Growth

C_1 , which lies on a lower community indifference curve than C_0 . If the tariff did not exist, production and consumption would have occurred at P_2 and C_2 , respectively, before the capital inflow, and at P_3 and C_3 , respectively, after the capital inflow. As a result of the tariff-induced distortion, capital accumulation reduces welfare.

When this capital accumulation comes from foreign sources, Brecher and Diaz Alejandro (1977) argue that under these conditions immiseration is the only outcome that can result from a tariff-induced inflow of untaxed foreign capital. They distinguish (for comparative static purposes) the following three contributing effects:

- "(1) the well-known loss due to tariff-created distortions in consumption and production, given only the initial factor endowments;
- (2) the loss or gain that would result even from accumulation of nationally owned capital in the presence of a tariff, for reasons expounded by Johnson (1967) and further explored by Bertrand and Flatters (1971) and Tan (1969); and
- (3) the loss arising when foreign profits are subtracted to determine national income" (Brecher and Diaz Alejandro, 1977:17).

Ignoring effect (1) which is always negative, they concentrate on (2) and (3), which they call the 'net inflow-impact'. They show that this impact is also negative on balance even before effect (1) is added to it. Adding effect (1) merely reinforces the conclusion that immiseration is the only possible outcome that can result from a tariff induced inflow of untaxed capital from abroad.

In Figure 1.7, the country produces initially at P_0 on the production possibility curve T_0T_0 . The domestic (tariff-inclusive) price ratio is given by the slope of the line d_0 , tangent to T_0T_0 at P_0 . The world price ratio, reflecting the small country assumption, is given by the slope of line f_0 . Consumption occurs at C_0 , where f_0 intersects line OO , which is the income-consumption curve corresponding to domestic prices. The community indifference curves from which line OO is taken are not drawn.

The capital inflow shifts T_0T_0 outwards (not shown) and, at constant prices, production moves from P_0 to P_1 which lies northwest of P_0 according to the Rybczynski Theorem. Both points lie on RR the Rybczynski line corresponding to the (fixed) ratio of domestic prices (Krauss and Johnson, 1974). The Rybczynski line is defined as the output expansion (contraction) locus as the endowment of one factor is changed (the other remaining fixed) with constant prices. Its slope is negative; linearity follows from the assumption of linearly homogenous production functions in both sectors. Since RR is steeper than the world-price line f_0 in this case, the real value of total output increases at international prices, consumption increases from C_0 to C_1 , and welfare improves. If RR was flatter than f_0 welfare would decrease.

However, when effect (3) is incorporated, the net outcome is always negative irrespective of the welfare effects of (2). Effect (3) involves subtracting foreign profits to leave only

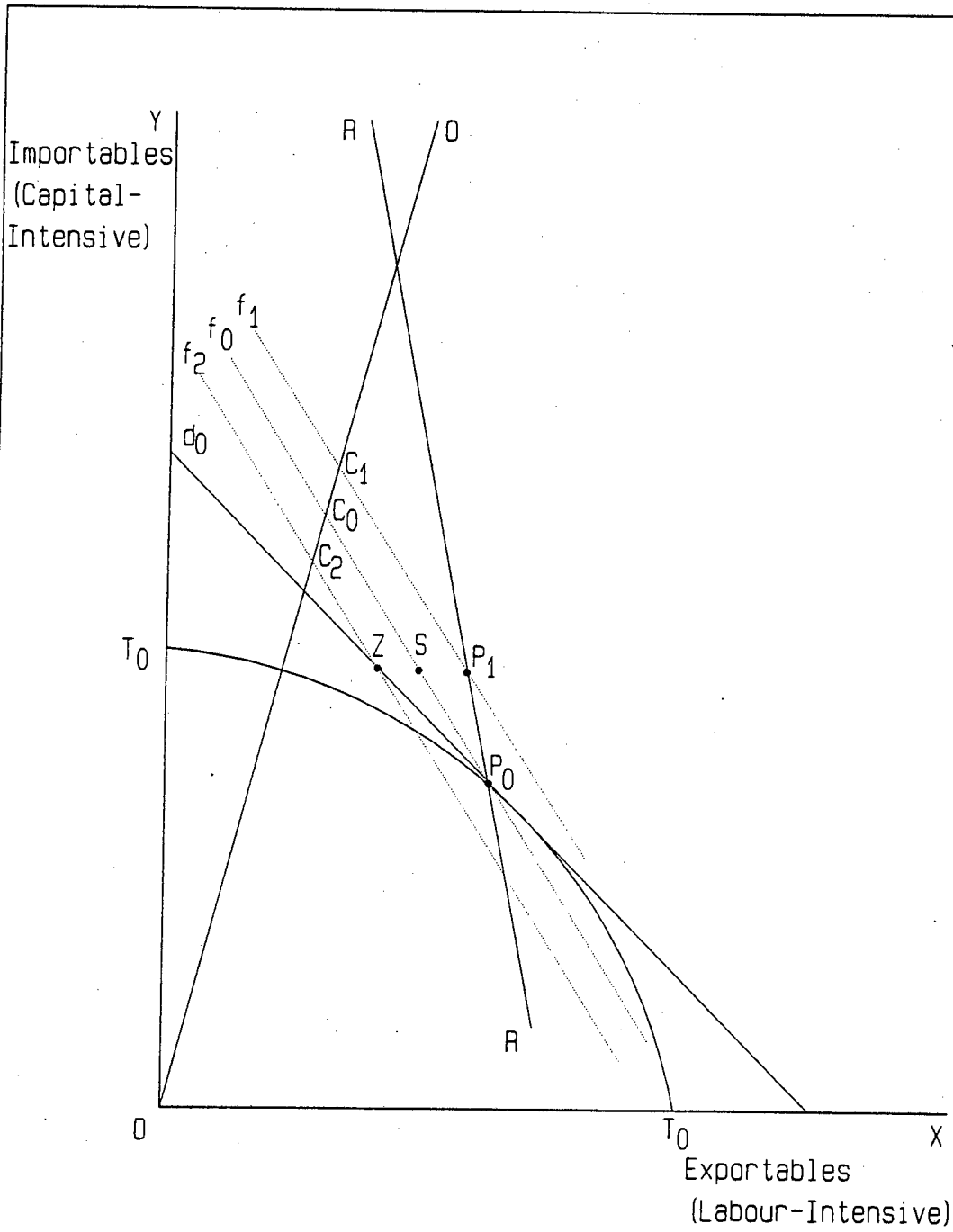


Figure 1.7
Foreign Capital, Tariffs and Host Country Welfare

national income. Brecher and Diaz Alejandro (B and D) assume that foreign capital receives the full (untaxed) value of its marginal product, so that foreign profits absorb the entire increase in total output valued at domestic prices a' la Mundell (1957).

Foreign profits expressed in exportables are equal to P_1Z , the horizontal distance between P_1 and d_0 . The host country is left with commodity bundle Z , which can be exchanged internationally along the world-price line f_2 to achieve consumption at C_2 . Since C_2 must lie southwest of C_0 , the capital inflow clearly reduces the level of welfare. The same result is obtained *mutatis mutandis* if foreign profits are expressed in importables.

Thus, even if capital accumulation increases national welfare in terms of effect (2), the "net inflow impact" must be negative when foreign investment receives the full value of its marginal product. This result can only be reversed if (i) host country importables are labour intensive (the Rybczynski line having a flat negative slope), in which case the net inflow impact will be positive; (ii) a trade subsidy is imposed instead of a tariff (assuming importables are capital-intensive); or (iii) if the host country taxes foreign profits.

This result can also be reversed or at least ameliorated if the implicit assumption that the government redistributes the tariff revenue to private consumers is dropped. If this

revenue is returned to producers of exportables in the form of a production subsidy, this may prevent immiserization if it reduces the tariff-induced production distortion (see Appendix 1). Even so, the pre-tariff welfare level is not attainable because effect (1) is always negative, at least until the attainment of a Mundell (1957) tariff-induced (post-inflow) equilibrium at which point the domestic product-price ratio equals the international ratio of commodity prices.

The theory of immiserizing growth and domestic distortions has important implications for policy formulation since it implies that foreign investment is likely to impoverish a host country if it goes to the capital-intensive tariff protected sector. Although we have only examined the small country case in order to exclude foreign distortions by assumption, this is a problem faced by all countries. As we pointed out above (see also Corden, 1974), the theory of comparative advantage suggests that countries that import capital intensive goods are also likely to be net capital importers. Since domestic distortions, especially tariff protection, are widespread in capital-poor developing countries, this suggests that immiserizing growth is not an obscure analytical possibility but a real practical problem, especially where foreign investors have been given some form of exemption from taxation. Host countries may therefore need to examine whether alternative development strategies are not more appropriate to their needs.

In the case of South Africa, the evidence contained in Chapter 2 below suggests that although most foreign investment has been in capital-intensive industry, on the whole these industries have received less effective protection than labour-intensive ones. Consequently, it is not clear whether protection combined with foreign investment has caused immiserizing growth. However, this seems unlikely to have occurred because foreign profits have always been taxed, often more heavily than local ones (see Chapter 5 below).

3.4 Specific Factor Model

Although the incorporation of technical progress, tariffs and the like into the HOS framework is an improvement over simple capital arbitrage as an explanation of the welfare effects of FDI, the gap between the MNC and GE analysis still persists. Some economists attempting to push the two closer together have seized on the horizontal or multi-plant form of foreign investment, in which the firm based in a specific source country's industry transplants its capital to that same industry in the host country (Caves, 1971; Krugman, 1980). This has given rise to a more sophisticated model with sector-specific capital that may move from country to country, but does not move between industries in either country (Jones, 1971; Caves, 1971; Corden, 1974; Burgess, 1978; Batra and Ramachandran, 1980; Das, 1981; Brecher and Findlay, 1983; Srinivasan, 1983; Mendez, 1983; Markusen, 1984; Helpman, 1984; Batra, 1986; and Tsai, 1987).

The model is based on the assumption that there are two countries, capable of producing two products. Each country is endowed with a labour supply that is homogenous and perfectly mobile between industries but does not move across national boundaries. Symmetrically, stocks of capital are potentially mobile across national boundaries but specific to the two respective industries. If the usual assumptions about production functions and trade barriers are kept, then factor prices will be equalized as long as one type of sector-specific capital is perfectly mobile; and a tariff still serves to attract foreign investment by enhancing sector-specific factor returns (Jones, 1967).

An interesting and relevant version of the model comes from Batra, who assumes that global firms transmit technology but relatively small amounts of capital to less developed countries, a practice which has the effect of "generating or accentuating severe imperfections in local capital markets" (1986:343). The model assumes that the host country is a small country, with a capital-poor labour-rich economy, divided into two sectors, one wherein MNCs compete with each other and the other comprising local firms only, and that labour is unemployed because of an institutionally fixed real wage. The emergence of technologically more efficient MNCs leads to a shift of capital from the local to the multinational sector as the marginal products of capital and labour rise in the multinational sector. As a consequence, employment and output rise in the multinational sector and decline in the local

sector. If the multinational sector is the relatively capital-intensive sector, then the emergence of the MNCs causes a decline in total employment in the labour-surplus host country. In addition to this employment or technology effect, if local capital markets show a preference for MNCs, an expansion of the multinational sector will cause a decline in the real income of underdeveloped host countries when their capital transfer is not sufficient to offset this preference. A geometrical exposition of these effects is provided in Figure 1.8.

In the case where total employment is constant, then for any given level of employment we can construct a transformation curve, T_0T_0 , for the host country. The initial production point P_0 is obtained where the given international price line, f_0 , touches T_0T_0 . The superior technology brought into the multinational sector, X , causes the country's transformation curve to shift outwards to T_0T_1 . If the local capital markets show no preference for the global firms, i.e. no capital market imperfections are present, the new production point will be at P_1 and GNP in terms of X will rise by P_1Q or RT . But assuming that the total value of untaxed profits are repatriated, the net national product will be unchanged, distance P_1Q representing these profits. If the capital market imperfection does occur, then T_0T_1 shrinks to the dotted curve and the production point only shifts to M . The rise in gross national product is then RM , but since repatriated earnings equal P_1Q or RT , net national product actually declines by MT , which

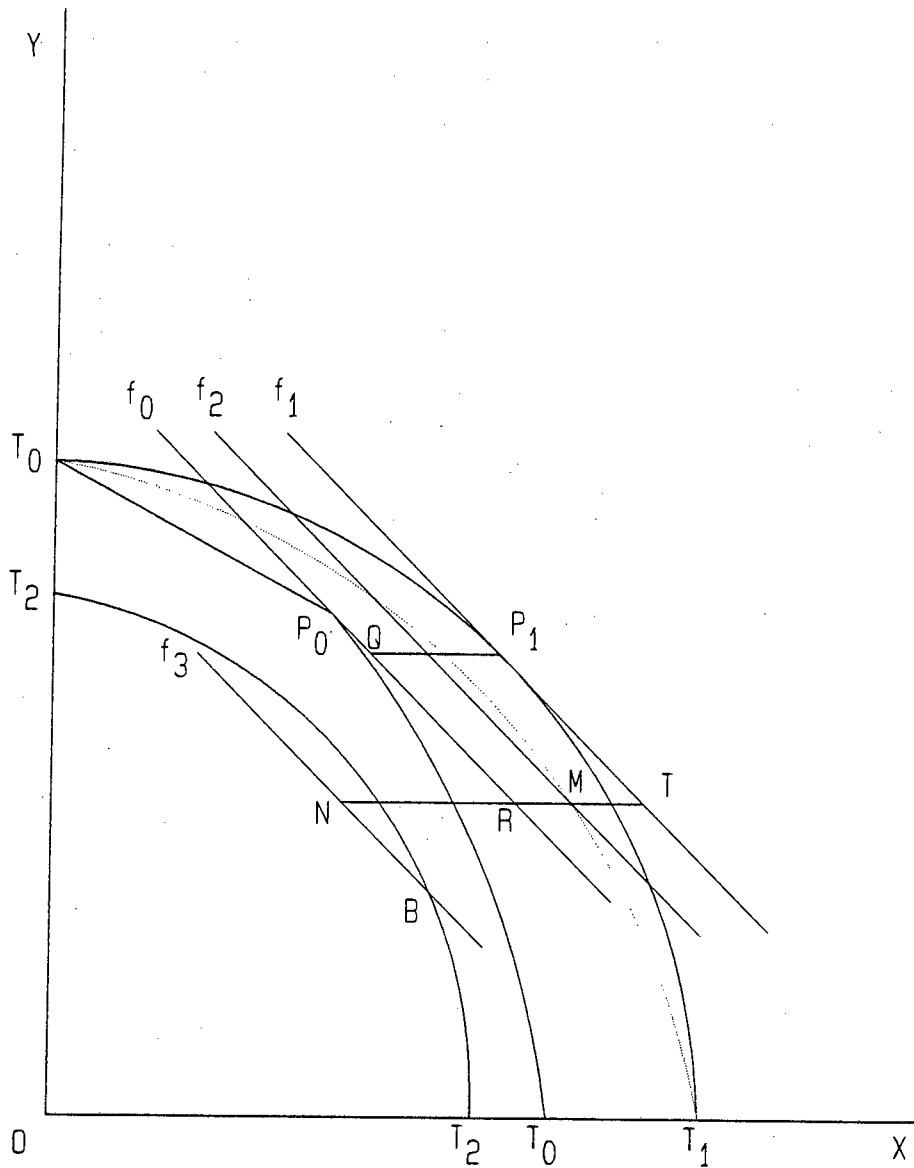


Figure 1.8
 Specific Factors, Capital Market Imperfections,
 and Host Country Welfare

represents the cost of multinational firms in the presence of capital market imperfections. If total employment also declines, then the dotted transformation curve T_0T_1 shifts inwards towards the origin, say, to T_2T_2 , and the final production point is B and net national product has declined by RN plus MT.

In order to overcome the adverse economic impact of MNCs, Batra suggests that an appropriate income tax on them can reverse, if not completely eliminate, many of their harmful effects (see also Mendez (1983)). If the host country imposes a pure profits tax it has no effect on resource allocation because its effects are identical to a lump sum tax. Thus although it may prevent the full repatriation of MNC profits it does not improve the allocational defect caused by discrimination in the banking sector. On the other hand, a Harberger (1962) tax on non-wage income earned by MNCs is more appropriate because it causes a rise in the employment of capital and labour in the local sector and a fall in their employment in the multinational sector. This first-best tax then corrects the resource misallocation caused by capital market imperfections, ensuring that FDI causes total employment and national income to rise. This effect is explained geometrically in Figure 1.9.

In Figure 1.9, T_0T_0 is the host country's transformation curve, for a given level of employment, prior to the tax on non-wage income earned by MNCs. Since capital market imperfections are present, the actual production point is on the dotted curve at

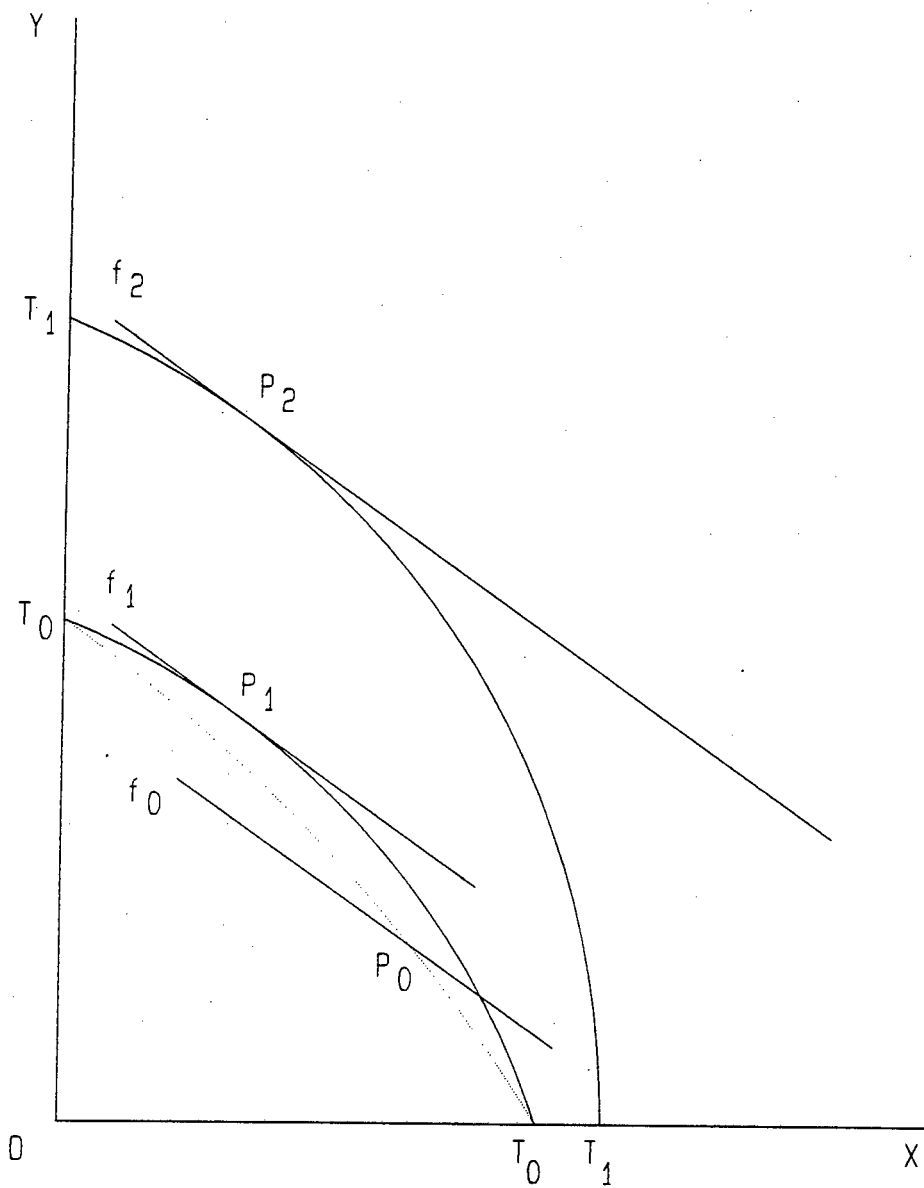


Figure 1.9
 Specific Factors, Capital Market Imperfections,
 Taxation and Host Country Welfare

P_0 . The imposition of the tax raises the gross (tax inclusive) cost of capital to MNCs causing the dotted transformation curve to shift upwards. The optimal tax is therefore the one that completely eliminates the capital cost differential between the two sectors. Holding the total level of employment constant, the production point moves to P_1 . If we then allow the employment level to rise, the transformation curve moves to T_1T_1 and the production point to P_2 . The level of real gross national product also rises to the level given by the price line f_2 .

This analysis suggests that there is an optimum income tax which eliminates the capital-market imperfection, where the optimum is defined in terms of eliminating such distortions only. This tax need not drive out the MNCs, which still retain their technological superiority, because all it does is to deprive MNCs of the advantage of relatively lower interest rates. The analysis also suggests that if the developing host country wishes to avoid the real-income losses implied here, it should insist that the transfer of technology is accompanied by substantial capital transfer in order to combat local capital market imperfections. Otherwise, as Batra (p.353) concludes, "The emphasis of some underdeveloped countries on attracting technology at the expense of multinational capital is self-defeating and may cause losses of jobs as well as national income."

This conclusion has some important implications for the current world trend towards joint ventures and 'new forms' of FDI in which technology is often licensed out to local firms but little or no equity investment takes place. In recent years this has also been a fairly common *modus operandi* of MNCs in South Africa, largely because of political pressure in favour of capital disinvestment (see Innes, 1990 and Chapter 4 below). It is also likely that, in the short term at least, joint ventures of this nature may offer local manufacturers in South Africa the best chance of acquiring foreign technology. Local capital markets do not, however, favour MNCs, which face some important constraints on borrowing in local capital markets (see Chapter 5 below). The capital-market imperfection effect does not therefore seem particularly relevant to South Africa. But the employment effect may be more relevant, not because foreign firms are more capital-intensive (which they are not - see Chapter 3), but because most FDI has taken place in relatively capital-intensive sectors within manufacturing, which is itself more capital-intensive than, say, mining or agriculture. On the other hand, as we have already stated, foreign profits are taxed in South Africa, so that the net national product may still increase as long as the increase in unemployment is small.

4. CONCLUSION

Even in its simplest form, trade theory provides useful predictions about how inflows of capital are likely to affect the welfare of capital-recipients via relative price changes. The introduction of technology, the factor proportions problem, foreign and domestic distortions, and specific factors add to its predictive capacity and bring about a more realistic representation of the FDI "package". As Helleiner (1989: 1451), writing in the Handbook of Development Economics, says: "It is noteworthy ... that this (GE) analysis has uncovered circumstances in which capital inflows may reduce welfare in the capital-importing country - via domestic "distortions" or rigidities that limit income gains to less than the cost of external capital (or even render them negative), negative terms of trade effects, etc."

In general, capital inflows will raise output and employment in the capital-intensive industry by a greater proportion than they are lowered in the labour-intensive industry, from which it may be inferred that FDI improves potential levels of welfare in the country as long as it is not attracted by protectionist measures to a capital-intensive import-competing sector, and as long as it does not create or exacerbate host country factor- and capital-market imperfections.

The specific measurement of the costs and benefits of FDI to host countries is more problematic since measurement cannot

escape being based to a greater or lesser extent on normative analysis. Economic development involves a complex interaction of social, cultural and political changes as well as economic ones, and the activities of MNCs will have an effect on all these factors. In this connection the role of the state is important because the contribution of FDI to social welfare can be significantly altered by the ability and willingness of the host government to pursue "appropriate policies". For example, the stance taken in regard to the taxation of foreign investment has a pivotal role to play in capturing the benefits of FDI (see Chapter 5 below).

Likewise, many of the costs associated with "multinationality" - such as external decision-making, tax and monetary policy evasion, and superior bargaining strength - can be ameliorated by appropriate policy intervention. Furthermore, if the nation-state fragments the world economy by restricting commodity and factor movements, an interpretation of the MNC as an efficient unit of allocation implies that it is a means of pursuing the principle of comparative advantage that is to the economic benefit of all, including those in the host country. On the other hand, the economic benefits outweigh the non-economic costs is an open question that lies beyond the parameters of economic analysis.

Endnotes:

1. The distinction between FDI and the MNC is in many instances not an easy one to draw (see Caves, 1971). Nevertheless, there are some obvious differences. Firstly, FDI can be made by non-MNC's, though in practice the amounts involved are very small (Dunning, 1971). Secondly, it incorporates foreign investment by all firms, irrespective of the extent to which they are involved in foreign (or domestic) activities. Thirdly, MNC's may have the option of raising capital in the host economy or of reinvesting retained earnings, thereby avoiding international capital transfers.
2. The proportions of ownership that define "largely" vary from country to country. For the United States 10 per cent ownership by the investing firm suffices as an official definition of FDI. The comparable figure for South Africa is 25 per cent (see Chapter 4). FDI includes any investment, whether new ownership or simple lending, as long as the investing firm owns over 25 per cent (in the South African case) of the foreign firm being invested in. It also includes any lending to, or purchase of stock in, firms owned in greater proportion by other parties in the investor's home country, even if the individual investor does not own 25 per cent of the firm being invested in.
3. Alternative terms to "multinational corporation" include "multinational enterprise" (MNE), "transnational corporation" (TNC), "international firm" and so on. The United Nations adopted the term TNC with the creation of the UN Centre on Transnational Corporations (UNCTC) in 1974. The choice of "transnational" as opposed to "multinational" reflected the insistence of certain Latin-American and Caribbean states who wished to distinguish between foreign-owned MNC's and joint ventures of two or more participating countries established as part of regional integration schemes (UNCTC, 1978:159). Notwithstanding the efforts of the UNCTC, the term "multinational corporation" has passed into common usage (Lumby, 1989).

CHAPTER 2

THE HISTORICAL ROLE, COMPOSITION, DISTRIBUTION AND PENETRATION OF FOREIGN DIRECT INVESTMENT IN POST-WAR SOUTH AFRICA

1. INTRODUCTION

This chapter presents a broad overview of the South African experience of FDI since the war, with the emphasis falling on the contemporary period partly because of its relevance for policy and partly because of the availability of data. In general, when examining such issues as the composition, distribution and penetration of FDI, either official data sources published by the South African Reserve Bank or those constructed by the author (see section 4.3 below) have been used. There is some controversy about the accuracy of official figures (Kahn, 1991b; Smit and Mocke, 1991) but they remain a valuable time series and are more comprehensive than other sources such as International Finance Statistics published by the I.M.F.

In keeping with this broad-based approach, the chapter starts with an historical summary of the role played by FDI flows in South African economic development till 1988. Focusing on the post-war period, the next section analyses the composition of the various flows of aggregate foreign investment in order to distinguish FDI from non-FDI and examine how it has altered

over time. The section following this investigates the distribution of FDI according to various criteria such as geographical origin, location, and manufacturing industry group. This is followed by a discussion of the meaning and extent of penetration and of the significance of the underdevelopment of the capital goods industry (which is a theme we return to in Chapter 3 when dealing with the question of foreign technology in more detail). The chapter ends with a summary and conclusion.

Drawing from the theory in Chapter 1 above, an important consideration is whether the pattern of FDI and factor intensities has resulted in immiserizing growth as a result of the policy of tariff protection pursued as part of a wider policy of import substitution since before the war. Likewise, the impact of FDI on the international terms of trade is examined for evidence of immiserizing growth. Unfortunately, the conclusions reached about this issue in section 4.4 are ambiguous because of the numerous factors which impinge on growth and which one cannot hold constant empirically. Nevertheless, at face value it appears that immiserizing growth owing to domestic distortions may well have occurred, particularly during the era of "strategic industries" and economic sanctions when comparative advantage was deemed by the government to be less important in the allocation of resources. Given South Africa's relative insignificance as a price-setter in world markets, it is much less likely that immiserizing growth has occurred owing to foreign distortions.

2. THE HISTORICAL ROLE OF FOREIGN INVESTMENT

Prior to the "discovery"¹ of diamonds in 1867 and gold in 1886, what is today South Africa was a geographically isolated, pre-industrial society, relying almost exclusively on agriculture as a means of subsistence. The lack of markets and inadequate transport facilities militated against the accumulation of surplus wealth for investment purposes, and in the absence of easily exploitable natural resources there was little to attract capital from abroad². This situation was rapidly reversed by the discovery of diamonds and gold, the immediate effects of which have been described by Houghton (1964:13) as follows:

"Gold and diamonds between them brought about an economic revolution in the sub-continent which, both for the speed with which it was accomplished and for its far-reaching consequences upon the whole character of the country, is without parallel elsewhere in the world except perhaps where a backward country has struck oil. The patriarchal subsistence economy was suddenly drawn into the full stream of world economic development. Southern Africa became one of the major investment areas of the world".

The inflow of large amounts of private and public investment, labour, skills and enterprise which followed the discoveries, led to a rapid increase in the rate of economic development: South Africa joined the world economy and began to make use of foreign resources to further its economic development. Although the profitability of the diamond mines enabled the industry to self-finance all but an investment of about 20 million pounds (Frankel, 1938:75), the development of gold

mining required large outside capital investment. Frankel estimates that between 1887 and 1932, 60 per cent of the approximately 200 million rand invested, came from foreign sources, a figure accounting for nearly one-half of private foreign investment at that time.

According to other estimates by Frankel (1938:158), South Africa had received a gross amount of about R1046 million from foreign sources by 1936. Gilbert (1933:64), on the other hand, believes that an estimated inflow of R800 million between 1886 and 1910 might be conservative; and Sadie (1949:41) estimates a gross inflow of R432 million between 1937 and 1946. Accepting the estimates of Frankel and Sadie of gross inflows of capital between 1870 and 1946, it appears that private capital represented almost 70 per cent of total foreign investment over this period (Van der Suy Heyns, 1967:23). Clearly, before the Second World War, foreign investment played a major role in the development of the mining sector, especially if public investment in mining-related infrastructure, such as the railways, is taken into account. On this broader definition, Frankel believes that more than half of the gross foreign investment before 1932 was in those extractive industries that lay the foundations for the rapid growth of secondary industry in the post-war period.

The diversification of the economy through the expansion of the manufacturing sector has been the most important structural change of the twentieth century. This growth has occurred in

several distinct phases, as first agriculture, and then mining have been eclipsed as the largest single component of National Income. Prior to the Second World War mining was still dominant though manufacturing had expanded considerably, principally as a result of the deliberate strategy of tariff protection introduced by the PACT government in 1924.

No figures appear available on the specific contribution of FDI to this expansion, but the number of resident establishments grew from 3638 in 1915/16, when the first industrial census was taken, to 9642 in 1945/6 (Lumby, 1983:202,224). Part of this growth was probably owing to the "natural" protection afforded by the First and Second World Wars, but as domestic markets grew, manufacturing was encouraged, and a gradual shift of private foreign investment from primary to secondary industry occurred. In addition, the policy of tariff protection followed since the 1920's had the effect of encouraging foreign companies to establish local branches and subsidiaries (Sadie, 1949:47). Manufacturing as a share of National Income grew from 6,7 per cent in 1912 to 9,8 per cent in 1918, 11,9 per cent in 1925 and 17,7 per cent in 1939 (Lumby, 1983:220). As a result of the foreign investment in mining and manufacturing before 1945 outlined above, the country entered the post-war period in a situation of international indebtedness.

Following the Second World War, the pattern of foreign investment began to change, with a growing emphasis on investment in manufacturing. As before the war, the expansion of secondary industry was dependent on the prosperity of gold

mining, and manufacturing continued to be a large net user of foreign exchange. Notwithstanding this structural deficiency in the economy, the sophistication of industry increased considerably after 1945, with production passing through the first phase of producing consumer goods on to the more complex phase of producing intermediate and capital goods. In this manufacturing investment, as in the continuing investment in mining, foreign capital continued to play an important role by supplementing domestic savings, transferring advanced technology and easing the balance of payments constraint.

Frankel estimates that of the total amount of R600 million invested in the private sector between 1870 and 1936, 67 per cent was in mining, 13 per cent in commerce, agriculture and industry, and 20 per cent in real estate, financial and investment companies (1938:76), whilst Sadie estimates that the major share of private investment between 1937 and 1946 was in gold mining, with no more than R60 million being invested in manufacturing. However, by the early 1970's, 40 per cent of foreign investment was in manufacturing and 25 per cent in the financial and business service sector, whilst only 15 per cent was still invested in mining (Nattrass, 1988:85).

It is difficult to be certain of any changes in the sectoral distribution of foreign investment that may have occurred since then because the basis on which the Reserve Bank compiles the figures was altered in The Third Census of Foreign Transactions, Liabilities and Assets (1982). The effect of

this alteration is to increase the share of the financial and business service sector by including in it the figures for financial holding companies, which were previously classified according to the activities of subsidiaries. According to this census, in 1986 32 per cent of total foreign investment was in finance and business services, 21 per cent in manufacturing and only 7 per cent in mining. The corresponding figures for direct investment only, give a different picture however: 38 per cent in finance and business services; 37 per cent in manufacturing; and 5 per cent in mining.

A further complication is that the growing politicisation of foreign investment³, accompanied by disinvestment in the 1980's, makes it difficult to keep track of capital stocks and flows owing to official suppression of the relevant statistics and evasion of exchange control regulations. This obstacle can be overcome by consulting alternative sources, although these may not always be so reliable or consistent (Kahn, 1991; Smit and Mocke, 1991).

From the end of 1956, when comprehensive data first became available, the country's net international indebtedness, i.e. the difference between its foreign liabilities and foreign assets, increased steadily at an average annual rate of about 10 per cent (in nominal terms) from R2067 million to R22224 million at the end of 1981 (van der Merwe and Bester, 1983: 24). This trend continued up to 1985 but was reversed in 1986 when net international indebtedness fell by 8 per cent. More recent figures are not available, although Leape (1991) and

Garner and Leape (1991) have produced more recent estimates of South Africa's borrowings abroad after the debt crisis in August 1985.

It appears then that, historically speaking, secular changes in the pattern of economic activity have been accompanied by changes in the pattern of foreign investment. The remainder of this chapter discusses post-war changes in the composition, distribution and penetration of foreign investment, especially FDI, against the background of the international economy and of economic development in South Africa.

3. THE POST-WAR COMPOSITION OF FOREIGN INVESTMENT

3.1 Growth and Fluctuations in Net International Indebtedness

The inflow of capital during the first decade after the Second World War increased sharply as compared with pre-1946 inflows. For example, du Plessis (1958:61) has estimated a net inflow of private capital between 1910 and 1945 of R453 million, whilst combining Frankel and Sadie's estimates for the period 1870 to 1946 gives a figure of R1030 million. In comparison, a net inflow of R1528 million was recorded between 1946 and 1955 (S.A. Reserve Bank), and although these figures do not take into account changes in the value of money, it is clear that the rate of absorption of private foreign investment increased in the decade after the War.

From the end of 1956, when comprehensive data first became available, it has been possible to establish far more accurately the magnitude and composition of foreign capital flows. Table 2.1 indicates the magnitude, annual changes and relation to GNP of South Africa's real (rand value) net international indebtedness, i.e. foreign liabilities less foreign assets in rand and adjusted for inflation, for the thirty-three years 1956 to 1988. Gold reserves are excluded from net international indebtedness figures, because they distort comparisons over time owing to fluctuations in gold valuation. From the end of 1956, the country's real net international indebtedness increased from R8202 million to R29508 million in 1985, an increase of 360 per cent. Since 1985 there has been a sharp decline in real indebtedness. Decreases were recorded in nine out of thirty years, predominantly in three periods, the early 1960's, the late 1970's, and the period following the so-called "debt crisis" in the late 1980's. The decline in the early 1960's is reflected in the lower annual percentage growth rates of real GDP in the late 1950's and early 1960's associated with the downward phases of the business cycle between February 1958 to March 1959, and May 1960 to August 1961 (Smit and van der Walt, 1982:44).

The declines in the 1970's and 1980's, though complicated by politically-induced capital flight, are also a reflection of the structural imbalances in the South African economy that emerged after 1972. For example, between 1956 and 1971 the

TABLE 2.1

SOUTH AFRICA'S REAL NET INTERNATIONAL INDEBTEDNESS1956 - 1988⁴

At the end of	Rm (excluding gold reserves) in Constant Prices (1980=100)	Real Annual Percentage Growth of Indebtedness	Percentage of GNP	Annual % Growth Rates of Real GDP
1956	8202	-	50.4	5.0
1957	8471	3.3	50.4	3.8
1958	8764	3.4	52.4	3.1
1959	8478	-3.2	48.5	4.4
1960	8822	4.0	47.9	5.2
1961	8311	-5.8	43.7	4.2
1962	7944	-4.4	39.6	5.6
1963	7976	.4	35.9	7.3
1964	8342	4.6	35.0	6.7
1965	8918	6.9	35.6	6.0
1966	9587	7.5	36.4	4.3
1967	9829	2.5	34.4	6.8
1968	11741	19.4	38.7	4.3
1969	12682	8.0	38.4	6.1
1970	14227	12.2	41.4	5.2
1971	16561	16.4	46.2	5.4
1972	17042	2.9	44.8	2.2
1973	16926	-.7	39.4	3.5
1974	18852	11.4	39.9	6.8
1975	21415	13.6	46.2	-.4
1976	23986	12.0	50.9	.3
1977	23288	-2.9	49.8	-.1
1978	21773	-6.5	44.4	4.4
1979	20781	-4.5	35.3	5.0
1980	17516	-15.7	28.7	10.7
1981	19646	12.2	33.0	1.4
1982	21596	9.9	32.1	-.4
1983	22191	2.7	33.2	-.1
1984	28660	29.1	45.4	5.4
1985	29508	2.9	47.6	.1
1986	19602	-33.6	31.6	.6
1987	12919	-34.1	19.8	2.4
1988	12333	-4.0	18.0	3.4

Sources: C. Jenkins (1986:70); South African Statistics 1986; SA Reserve Bank, Quarterly Bulletin, September 1990.

average annual growth rate of real GDP was 5,2 per cent, whereas between 1972 and 1986 it was 2,8 per cent, record gold prices notwithstanding. As can be seen in Figure 2.1, fluctuations in real net indebtedness have increased markedly, with movements of more than 25 per cent in 1981 and 1984, and nearly 35 per cent in 1986 and 1987. These wide fluctuations were a response to changes in the regulations governing foreign exchange, which were themselves a response to changes in the political climate. For example, it has been estimated that following the abolition of the financial rand in 1983, foreign investments worth some R2.05 billion were liquidated (Razis, 1986:214).

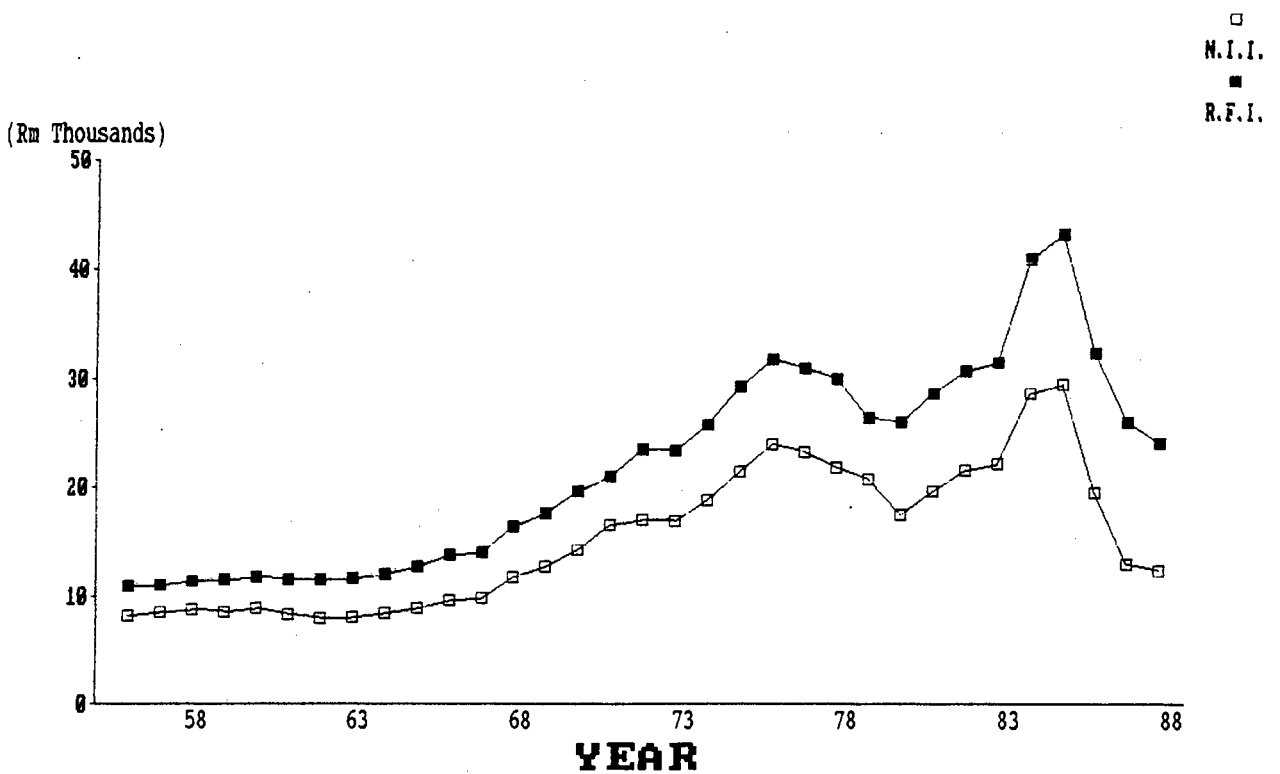
As a ratio of GNP, real net indebtedness fell from 52 per cent in 1958 to 35 per cent in 1964, then rose again to 51 per cent in 1976, before falling to 18 per cent in 1988: the average ratio between 1956 and 1971 was 42,2 per cent, and between 1972 and 1986 37,6 per cent. The sharp drop in the ratio after 1985 was caused by disinvestment and debt repayments on the one hand (Leape, 1991), and increased outward investment on the other (Innes, 1989).

A useful summary of some of the reasons underlying annual fluctuations in net international indebtedness between 1956 and 1981 is given by van der Merwe and Bester (1983:23).

"Annual changes in net international indebtedness were influenced to a large extent by the prevailing rates of economic growth and by the existing overall balance of payments position. During periods of relatively high

FIGURE 2.1

SOUTH AFRICA'S REAL NET INTERNATIONAL INDEBTEDNESS AND
REAL FOREIGN (INWARD) INVESTMENT 1956-1988
 (1980=100)



N.I.I. = Real Net International Indebtedness
 R.F.I. = Real Foreign (Inward) Investment

Source: Tables 2.1 and 2.2

growth in the domestic economy, the net international indebtedness generally increased at a more rapid rate owing to sharp increases in the inflow of capital for the financing of infrastructural development and other forms of fixed investment. Changes in the balance of payments position contributed materially to fluctuations in net international indebtedness, particularly during the nineteen-seventies. At times, the authorities had to borrow substantial amounts of short-term funds abroad to support the level of the foreign exchange holdings, while on other occasions the improvement in the balance of payments position allowed for the repayment of such loans. In addition, exchange control over capital outflows was applied more leniently during periods when the level of the gold and other foreign reserves permitted, and vice versa".

Van der Merwe and Bester omit from this summary the crucial role played by political factors in the determination of the pattern of net indebtedness. The high visibility, and consequent vulnerability of foreign investment to international pressure designed to isolate South Africa, was an overriding factor during the 1970s and (especially) the 1980s, and it is largely responsible for the changes in the direction of capital flows and composition of investment during this time shown in Table 2.2 below.

Whilst real net international indebtedness is a useful measure of all (i.e. inward and outward capital) flows, we need to narrow the focus of our study by concentrating on inward flows, which is the topic of the next section.

3.2 The Changing Composition of Foreign (Inward) Investment

Despite the fact that accurate estimates of the types of foreign investment inflows are not available for the period before 1956, Sadie (1949:47) believes that only about 2½ per

cent of private debt was non-direct, i.e. in the form of interest-bearing securities in 1946. Since the major portion of private foreign investment was in gold mining, which was extensively under foreign control at the time, it seems clear that most of the private foreign investment was of the FDI type prior to 1956. Reserve Bank figures show that direct private investment constituted 61,7 per cent and indirect private investment 38,3 per cent in 1956 respectively. On the other hand, it is not clear how concentrated the ownership of direct investment was, given the method of raising equity for the gold mines on the London Stock Exchange at the time.

From 1956 to 1972, foreign liabilities were defined by the Reserve Bank as all investment by foreigners in organisations in South Africa in which control was exercised from abroad; and vice versa for foreign assets. This definition was changed in 1973 to bring South Africa into line with I.M.F. practice. From 1973 direct investment was defined as (a) the total investment by foreigners in organisations in South Africa in which they have a controlling interest and the investment in these organisations of their affiliates and allied organisations or persons in foreign countries; and (b) vice versa for outward investment. The term direct investment from 1973 is, therefore, limited to investment of the controlling person or organisation, its affiliates and allied organisations or persons in their own South African operations. The ownership of 25 per cent or more of total issued voting stock,

or comparable ownership, or voting rights, is regarded as a controlling interest.

As can be seen in Figure 2.1, real foreign investment since the war has more than doubled. At the same time this has been accompanied by some marked changes in its composition (see Table 2.2 and Figure 2.2). The ratio of direct investment to total foreign investment increased uninterruptedly from 49,6 per cent at the end of 1956 to 61,1 per cent at the end of 1969. After that it declined to 33,5 per cent at the end of 1985, as the result of a combination of factors - the substantial increase in non-FDI, the slow down in the rate of economic growth, and the increased political and social pressures on MNC's in South Africa to curtail their direct investment activities, which were more visible.

C. Jenkins (1986:86) has argued that FDI, unlike non-direct investment, is insensitive to political factors, and depends on the perceptions of long-term business prospects. However, when net capital flows are considered (see Chapter 4), it emerges that FDI is also sensitive to political factors in the short-term.

Short term fluctuations and longer term changes in the composition of foreign investment must be seen against the background of both national and international trends. Internationally, FDI has been rising and falling, mainly rising, throughout the twentieth century. Its fastest period of growth

TABLE 2.2

REAL FOREIGN (INWARD) INVESTMENT STOCK :TOTAL, GROWTH RATES AND COMPOSITION, 1956 - 1988

(1980 = 100)

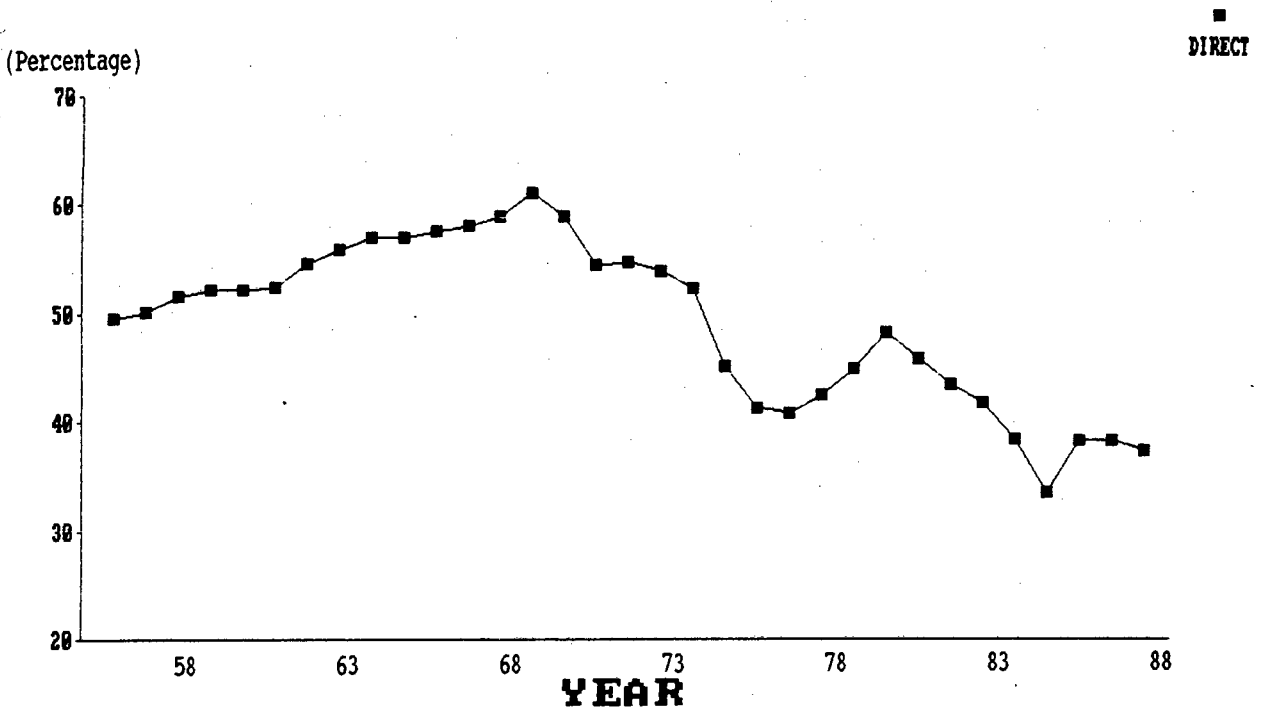
At the end of	Total Foreign Investment Rm	Growth Rate of Total Foreign Investment %	Direct Investment %	Indirect Investment %
1956	10,897	-	49.6	50.4
1957	11,011	1.0	50.2	49.8
1958	11,347	3.0	51.6	48.4
1959	11,533	1.6	52.2	47.8
1960	11,720	1.6	52.2	47.8
1961	11,485	-2.0	52.5	47.5
1962	11,501	.1	54.6	45.4
1963	11,653	1.3	56.0	44.0
1964	11,939	2.4	57.0	43.0
1965	12,725	6.6	57.0	43.0
1966	13,807	8.5	57.6	42.4
1967	14,079	2.0	58.1	41.9
1968	16,405	16.5	59.0	41.0
1969	17,606	7.3	61.1	38.9
1970	19,648	11.6	59.0	41.0
1971	20,993	6.8	54.5	45.5
1972	23,502	11.9	54.8	45.2
1973	23,324	-.7	53.9	46.1
1974	25,723	10.3	52.4	47.6
1975	29,300	13.9	45.2	54.8
1976	31,750	8.4	41.4	58.6
1977	30,921	-2.6	40.9	59.1
1978	29,972	-3.1	42.5	57.5
1979	26,338	-12.1	44.9	55.1
1980	26,008	-1.2	48.3	51.7
1981	28,634	10.1	45.9	54.1
1982	30,738	7.3	43.5	56.5
1983	31,570	2.7	41.8	58.2
1984	41,074	30.1	38.5	61.5
1985	43,334	5.5	33.5	66.5
1986	32,404	-25.2	38.3	61.7
1987	26,007	-19.7	38.4	61.6
1988	24,143	-7.2	37.4	62.6

Sources: "Statistical Presentation of South Africa's Foreign Liabilities and Assets, 1956 to 1981"; Supplement to SA Reserve Bank, Quarterly Bulletin, June 1983; SA Reserve Bank, Quarterly Bulletin, September 1990.

FIGURE 2.2

THE COMPOSITION OF REAL FOREIGN (INWARD) INVESTMENT STOCK1956-1988

(1980 = 100)



Source: Table 2.2

was in the postwar period dating roughly from the Korean War (1950-53) to the first oil price shock (1973-74) (Lindert, 1986:564). Since the early 1970s FDI has grown more slowly, being eclipsed by two waves of portfolio lending - firstly, the ill-fated surge of lending to developing countries in 1974-81 that followed the relaxation of exchange rates and the emergence of private sources of international capital, and secondly, the surge of lending to the United States in the 1980s⁵. FDI has also changed direction, moving away from the Third World, where it met with resistance and expropriations climaxing in the 1970s, towards the United States which changed from being the largest exporter of FDI to the largest recipient in the 1980s.

Although the collapse in commodity prices and large debt overhang in many developing countries which gave rise to the debt crises of the 1980s has seen some revival of interest in FDI along the lines of debt for equity (or indirect for direct investment) swaps (Stewart, 1985), the sheer volume of outstanding debt and the much smaller capitalisation value of LDC stockmarkets are major obstacles to this solution (UNCTC, 1988:25). Debt-into-equity proposals have also met with overwhelming hostility from host countries for political as well as economic reasons. Third World countries have in fact switched from taxing and nationalizing FDI, to wooing it with special tax breaks.

From Figure 2.2 we can see that FDI in South Africa grew as a proportion of total foreign investment until 1969, and started to decline more rapidly in the post-Bretton Woods era, in common with the experience of other developing countries. A more detailed look at the South African pattern of FDI, such as that in Chapter 4, reveals that it has been sensitive to political events in the country, with clear benchmarks in 1960/61, 1976 and 1986. Relatedly, since 1957 the growth rate of real GDP has exceeded that of FDI by some 2,5 per cent (Table 4.5 q.v.), reflecting a trend towards "indigenisation" rather than "denationalisation", as has occurred in Latin America and elsewhere. This process is exemplified by the experience of the motor industry, the leading manufacturing sub-sector (Black, 1991). According to Bell (1990:63), unlike experience elsewhere in other low-volume motor vehicle producing countries, such as Argentina, Brazil and Australia, local capital has dominated the motor industry since the early 1960s.

The international trend towards "new forms" of FDI, such as joint ventures, licensing agreements etc, has also had a significant impact on FDI in South Africa (see Chapter 4), especially as pressure to disinvest has escalated and it has become politically expedient for MNCs to replace capital investment with less visible means of foreign investment (Innes, 1989:229). Thus whilst the capital inflow has slowed down or even turned negative, FDI penetration levels (defined broadly) have not necessarily fallen proportionately. This trend is illustrated by what Bell (*op cit*) has called the

"Japanification" of the South African motor industry, which dates from 1962. The prevention of outward investment from Japan by the Japanese government until the 1980s, resulted in the drawing up by South African owned firms of licensing agreements with Japanese firms, which were the precursors of latter-day "disinvestment".

Another international trend that has affected South African FDI is the declining share of Africa as a whole in the world stock of FDI. According to the United Nations Centre on Transnational Corporations (1988:25) this share has dropped from 6,7 per cent in 1975 to 3,5 per cent in 1985. Although these figures do not include FDI in South Africa - South African figures are assumed away for political reasons - they do show that the continent is becoming marginalised, and now that new investment opportunities are available in Eastern Europe, there is no reason to believe that this trend will be reversed.

Whereas long term capital predominated in the period up to the early 1970's, the increase in public sector final expenditure and borrowing requirements in the 1970's and 1980's, as well as outflows of short term capital, led to the increase in so-called "liabilities related to reserves" or compensating finance, and thus to greater reliance on short term borrowing. Consequently the shift from direct to indirect investment was accompanied by a shift towards short-term liabilities, which is what one would expect *a priori*.

The declining importance of private sector borrowing since the early 1970's, is related to the declining levels of profitability of direct investment. In Table 2.3 the average rate of return on foreign investment in South Africa is shown for different periods. This rate refers to the ratio of non-residents' dividend and interest receipts plus their share in branch and partnership profits, to total foreign investment in South Africa, before providing for non-residents' tax (van der Merwe and Bester, 1983:30). These figures are not without some controversy (see Chapter 4 below), and other estimates, including those of the author, give much higher pre- and post-tax rates of return. It is not clear why van der Merwe and Bester's figures are so low, especially since they represent pre-tax rates of return.

According to Table 2.3, the average rate of return on total foreign investment remained relatively constant from 1957 to 1981, fluctuating between 6 and 7 per cent. The rate of return on direct investment reached a peak in the period 1967-71, dropping during the 1970s and 1980s. Declining levels of profitability (Nattrass, 1990) help to explain why the level of FDI has fallen during this period. The bracketed figures for FDI are based on the author's estimates of the rate of return to FDI contained in Table 4.4. These give a somewhat different picture for 1977-1981 when rates of return were at record levels, probably owing to a high average gold price.

TABLE 2.3

AVERAGE PERCENTAGE RATE OF RETURN ON FOREIGN INVESTMENT
IN SOUTH AFRICA, 1957 TO 1981

Period	Direct Investment	Indirect Investment	Total Investment
1957-61	6,5 (12,8)	6,5	6,5
1962-66	6,3 (15,5)	6,6	6,4
1967-71	7,1 (16,7)	6,7	6,9
1972-76	5,5 (14,1)	7,4	6,5
1977-81	5,6 (17,8)	8,2	7,0
1982-88	- (15,8)	-	-

Source: Van der Merwe and Bester (1983:31); author's Table 4.4.

From a foreign investor's viewpoint, it is also important to distinguish between those rates of return expressed in foreign currency and those expressed in rand because of the difference between the external value of the commercial and financial rands. The financial rate might be termed the risk adjusted rate of return, where the premium reflects (a lack of) foreign confidence in South Africa. There has effectively been a dual exchange rate mechanism in operation since the early 1960s, so that from the foreign investor's viewpoint the rate of return includes a premium.

One also has to bear in mind the difference between nominal and real rates of return, an added complication when inter-country comparisons are made because of different domestic inflation rates. Inter-country comparison of rates of return is therefore problematic because it is not clear whether the domestic (rand) or external (risk-adjusted) rate of return is the appropriate means of comparison, nor whether the rates have been adjusted for inflation differentials.

The average annual difference between the external price of the commercial and financial rands as a percentage of the commercial rand for the period 1974 to 1990 is given in Table 2.4.

As a result of the changing composition of foreign investment, the risk rate has also changed over the years. In the 1960's more risk capital in the form of direct dividend yielding

TABLE 2.4

ANNUAL AVERAGE COMMERCIAL RAND PREMIUM, 1974-90

YEAR	%
1974	31.8
1975	10.9
1976	42.3
1977	37.7
1978	43.9
1979	26.5
1980	30.2
1981	23.4
1982	18.7
1983	- *
1984	-
1985	30.2
1986	52.9
1987	38.1
1988	37.9
1989	28.9
1990	24.3

Source: SA Reserve Bank, Quarterly Bulletin, various issues

* During 1983 and 1984 the rand was unified.

investments was attracted, whereas in the 1970's and early 1980's loan capital was relatively more important. The trend towards interest-bearing liabilities is clearly illustrated by comparing interest payments accruing to foreigners to the total dividend outflow. This debt-service ratio increased from an average of 17 per cent between 1965 and 1969, to 174 per cent for the period 1980-1988 (S.A. Reserve Bank).

4. THE DISTRIBUTION OF FOREIGN INVESTMENT

4.1 Geographical Origin⁶ and Type of Investment

With the exception of Japan, the countries of origin of foreign investment have been those with whom trade links have been maintained⁷. Since 1956, the major source has been the European Economic Community (EEC), followed by the Americas and the other European nations. However, the EEC share has been steadily falling from 71,3 per cent in 1956 to 49,4 per cent in 1988, as indicated in Table 2.5. This relative decline can be attributed to the rapid increase in the share of the Americas from 14,3 per cent in 1956 to 26,9 per cent in 1988.

A more detailed breakdown of the geographical origin by country is difficult to compile since the relevant official statistics were published only until 1960. The most up to date, complete and consistent figures are probably those contained in Spandau (1979:115), and these only go up to 1976, apart from which some figures are open to question, having been "calculated" with

TABLE 2.5

DISTRIBUTION OF FOREIGN INVESTMENT IN SOUTH AFRICA
BY GEOGRAPHICAL AREA OF ORIGIN AS AT SELECTED
YEAR-ENDS, 1956-1983 (%)

	1956	1961	1966	1971	1976	1981	1986	1988
EEC Countries	71.3	68.3	65.5	63.8	57.2	55.1	50.2	49.4
Rest of Europe	4.9	5.8	7.1	9.1	9.7	12.9	12.8	11.6
N & S America	14.3	13.8	16.3	17.5	24.0	23.1	25.1	26.9
Africa	2.6	3.8	4.9	3.8	2.6	2.4	2.3	1.8
Asia	.9	1.0	1.4	1.9	2.0	3.6	3.5	4.5
Oceania	.5	.6	.7	.7	.4	.7	.7	.6
International Organisations	4.8	5.9	3.3	2.4	3.2	1.6	4.4	4.0
Unallocated	.7	.8	.8	.8	.9	.6	1.0	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: "A statistical presentation of South Africa's foreign liabilities and assets, 1956 to 1981", Supplement to SA Reserve Bank, Quarterly Bulletin, June 1983; SA Reserve Bank, Quarterly Bulletin, September 1990.

the least square method, using an exponential growth function. According to these figures, reproduced here as Table 2.6, substantial changes took place in the country-of-origin pattern between 1956 and 1976. Britain's share decreased from 62 per cent to 37 per cent, whilst the U S A's share increased from 12 to 21 per cent, and the unallocated share from 13 to 20 per cent. Both Tables 2.5 and 2.6 support the conclusion that the geographical origin of total foreign investment has become more diversified since the war.

As far as FDI is concerned, changes in the area-of-origin pattern are less marked than in total foreign investment, at least when looking at Reserve Bank figures. Table 2.7 shows that the share of the EEC countries decreased from a high of 77,5 per cent in 1961 to a low of 62,6 per cent in 1981, thereafter rising slightly to 67,8 per cent in 1988. The share of the Rest of Europe increased from 3,0 per cent in 1956 to 8,6 per cent in 1986, dropping marginally to 7,9 per cent in 1988. The share of North and South America is more or less the mirror image of the EEC countries, rising from 15,8 per cent in 1961 to 25,5 per cent in 1981, and declining thereafter to 20,5 per cent in 1988. The share of the other geographical areas has remained largely static at about 4 to 5 per cent of total FDI.

A more detailed FDI country-of-origin pattern can be ascertained by looking at the work done by Rogerson (1982a, 1982b) and the author on patterns of indigenous and foreign

TABLE 2.6

SOUTH AFRICA'S FOREIGN LIABILITIES, BY CREDITORS,
1956 TO 1976 (RM)

PERCENTAGE VALUES IN BRACKETS

Year	Great Britain	USA	France	Switzerland	Germany	International Organizations	Others	Total
1956	1731 (62)	342 (12)	147 (5)	88 (3)	-	134 (5)	348 (13)	2790 (100)
1960	1815 (60)	347 (11)	168 (6)	97 (3)	-	203 (7)	394 (13)	3024 (100)
1965	2100 (62)	454 (13)	200 (6)	150 (4)	-	125 (4)	369 (11)	3398 (100)
1970	3202 (55)	812 (14)	442 (8)	337 (6)	339 (6)	123 (2)	563 (9)	5818 (100)
1971	3696 (53)	1033 (15)	454 (6)	402 (6)	382 (5)	215 (3)	851 (12)	7033 (100)
1972	4126 (53)	1348 (17)	467 (6)	480 (6)	433 (6)	235 (3)	697 (9)	7786 (100)
1973	4545 (44)	1687 (16)	507 (6)	572 (6)	500 (5)	208 (2)	2361 (22)	10380 (100)
1974	5062 (40)	2429 (19)	551 (4)	683 (5)	1088 (8)	205 (1)	2761 (23)	12757 (100)
1975	6490 (39)	3121 (19)	691 (4)	939 (6)	1631 (10)	230 (1)	3348 (21)	16450 (100)
1976	7470 (37)	4200 (21)	795 (4)	1080 (5)	1877 (9)	797 (4)	3710 (20)	19929 (100)

Source: Spandau, 1979:116.

TABLE 2.7

DISTRIBUTION OF FOREIGN DIRECT INVESTMENT BY
GEOGRAPHICAL AREA OF ORIGIN AS AT SELECTED
YEAR-ENDS, 1956-1983 (%)

	1956	1961	1966	1971	1976	1981	1986	1988
EEC Countries	76.3	77.5	71.8	70.0	63.8	62.6	66.3	67.8
Rest of Europe	3.0	3.8	5.7	6.3	7.8	8.3	8.6	7.9
N & S America	18.7	15.8	19.2	20.8	24.4	25.5	21.5	20.5
Africa	1.0	1.8	2.0	1.7	1.7	1.5	1.2	1.3
Asia	.3	.3	.4	.4	1.3	1.0	1.2	1.4
Oceania	.7	.7	.8	.7	.8	1.0	.8	.9
International Organisations	-	-	-	-	-	-	-	-
Unallocated	-	.1	.1	.1	.2	.1	.4	.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: "A statistical presentation of South Africa's foreign liabilities and assets, 1956 to 1981", Supplement to SA Reserve Bank, Quarterly Bulletin, June 1983; SA Reserve Bank, Quarterly Bulletin, September 1990.

control of South African (and Namibian⁸) manufacturing. Leaving aside problems associated with the type of research methodologies necessary to establish foreign ownership and foreign-controlled employment in an environment where official data is not available⁹, Rogerson finds, not unexpectedly, that the United Kingdom and the United States were the two leading sources of FDI in 1978. As we see in Table 2.8, measured either in terms of the number of firms or by employment, these two countries account for an 80 per cent share of FDI in manufacturing in 1978, with West Germany in third place.

The country-of-origin distribution for 1990 reveals that whilst the United Kingdom is still the dominant foreign investor, (with 47,3 per cent of firms and 59,9 per cent of foreign-controlled employment), the United States (13,0 and 9,8 per cent respectively) has been overtaken by West Germany in terms of employment (11,4 and 11,7 per cent respectively). This is not particularly surprising in view of the greater pressure for disinvestment in the United States during the 1980's (C. Jenkins, 1985, Chapter 1). Whereas Rogerson found 17 French manufacturing firms in 1978, we found that French FDI was insignificant in 1990 and did not warrant separate treatment in the data base for 1990. On the other hand, it was decided to separate out the figures for Taiwan, whose share of foreign-controlled employment in manufacturing has expanded rapidly during the 1980's (Pickles and Wood, 1989:509), and constituted 3,3 per cent of the total in 1990.

TABLE 2.8

FOREIGN-CONTROLLED MANUFACTURING IN SOUTH AFRICA
BY COUNTRY OF ORIGIN, 1978, 1990¹⁰

Country	1978				1990				
	Firms		Employment		Firms		Employment		
	No.	%	No.	%	No.	%	No.	%	
381/1 United Kingdom	551	59.2	210,186	55.7	87	47.3	139,550	59.9	1506
420 United States	228	24.5	95,818	25.4	24	13.0	22,960	9.8	956
387 West Germany	67	7.2	25,932	6.9	21	11.4	27,330	11.7	1301
456 Switzerland	21	2.3	9,583	2.5	14	7.6	8,920	3.8	637
420 France	18	1.9	7,575	2.0	-	-	-	-	
693 Netherlands	15	1.6	10,409	2.8	6	3.2	5,570	2.4	928
Taiwan	-	-	-	-	9	5.0	7,740	3.3	860
Others*	30	3.3	17,596	4.7	23	12.5	21,070	9.1	916
Total	930	100.0	377,099	100.0	184	100.0	233,140	100.0	

* including Taiwan in 1978 and France in 1990.

Source: Rogerson, 1982a; author's data bank.

Although definitional discrepancies between Rogerson's data base and those of the author are, at face value, minimal, the unexpectedly large difference in the number of foreign-controlled firms identified in the manufacturing sector in 1978 and 1990 makes one cautious about the comparability of the data sets, according to which foreign-controlled employment declined by 37,2 per cent between 1978 and 1990. Nevertheless, it is clear that as far as the distribution by country-of-origin of FDI in the manufacturing sector is concerned, the field remains dominated by the United Kingdom.

For the remainder, it appears that the distribution is gradually diversifying with the drawing down of United States involvement. Broadly speaking, the country-of-origin distribution mirrors international experience, with the major industrial countries being the chief sources of capital. The predominance of the U.K. is a little unusual but this simply reflects the strong historical ties between the two countries. According to Dunning (1988:80), during the early post-war period, first South Africa and Australia and then Canada attracted the bulk of new UK direct investment, whereas US firms were focusing attention on Canada and Western Europe.

4.2 Location of FDI in South Africa

Research into the spatial distribution of FDI in South Africa is in its infancy. Only Rogerson (1982a, 1982b) has directly addressed this issue. He found (1982a:200) that over half of all foreign-controlled employment occurs in the Pretoria-

Witwatersrand-Vereeniging area; and that secondary nodes of concentration exist in the metropolitan Cape Town, Durban and Port Elizabeth regions. Taken together these four regions accounted for 83 per cent of foreign-controlled employment in 1978. This figure is greater (87 per cent) for heavy industry (fabricated metals, machinery and equipment; and chemicals, rubber and plastics) and smaller (65 per cent) for light industry (food, beverages and tobacco; and textiles, clothing and leather). According to Rogerson, there seems little evidence to support the view that the factors which determine the location of FDI are in any way different to those affecting locally-owned firms (Yannopoulos and Dunning, 1976:389). Statistical tests done by him show that in South Africa the spatial distributions of foreign-controlled and indigenous employment are remarkably similar. Nor does there appear to be any great locational variation between foreign firms of differing nationalities (1982a:215).

An interesting exception to this is Taiwanese investment in South Africa. As part of the government's regional economic policy, industrial incentives have been given to firms located in designated decentralization areas (for example, Rosslyn near Pretoria, East London, Brits, Rustenberg, Pietersburg and Ladysmith). As relative latecomers, the Taiwanese have been able to avail themselves of these benefits to a greater extent than traditional investing countries. Furthermore, the refusal of the authorities to grant permanent resident status to Taiwanese nationals until very recently, led many of them to set up operations in the homelands, especially those such as

Ciskei and Transkei, where economic incentives were also available (Rogerson, 1986; Pickles and Woods, 1989). As a result, virtually all Taiwanese investment is in the homelands, and particularly in Transkei, Bophuthatswana, Venda and Ciskei.

A further reason why the relatively footloose Taiwanese firms have set up operations in the homelands is that they benefit from the low wages paid in these areas. High levels of unemployment, the absence of trade unions, and repressive labour legislation mean that wage levels are as much as a third and commonly a half of those in the metropolitan areas. In the early 1980's, unskilled wages for men in the homelands averaged R107 per month, compared with R285 in urban areas. For unskilled women the disparity was even greater: R94 per month in the homelands and R279 per month in the urban areas (Dewar, Todes and Watson, 1984:81). Even without the decentralization incentives, labour remains extremely cheap in the homelands, though whether this will remain so in the future is an open question with the recent legalisation of trade unions in Transkei and Ciskei, and mooted changes in the South African tax code which will treat trade across the frontiers of the TBVC states as exports and imports from South Africa. Should the homelands be incorporated into South Africa this tax position will presumably fall away.

4.3 Distribution of FDI by kind of Economic Activity

Data on the distribution of FDI by kind of economic activity has been published by the Reserve Bank for 1980 and 1986 and is shown in Table 2.9. From the table it is evident that the majority of FDI occurred in manufacturing, finance, insurance and business services, wholesale and retail trade and mining and quarrying¹¹. An interesting feature is the fall in the relative importance of both mining and quarrying, and of manufacturing, and the rise in relative importance of insurance and business services between 1980 and 1986.

Historically, in other middle-income LDCs like Brazil, Turkey and Mexico, over 75 per cent of FDI has been in manufacturing, but in general this proportion is much lower in other developing countries, where extractive industry is more important (Reuber, 1973:4; Erdilek, 1982:254-6). However, a major change occurred during the 1980s, with a substantial worldwide shift in the composition of both the stock and flow of FDI towards services. By the mid-1980s, about 40 per cent of the world stock and half annual flows were in services (UNCTC, 1988:4). Whilst most of the growth in services FDI has been confined to the developed market economies, some LDCs are now participating, especially those offering offshore financial havens or flags of convenience. Broadly speaking, Asian countries have higher shares of services in total FDI than do countries in Latin America. Thus the switch to services in South Africa is mirrored in the recent experience of several

TABLE 2.9

DISTRIBUTION OF FOREIGN DIRECT INVESTMENT BY KIND OF
ECONOMIC ACTIVITY FOR 1980 AND 1986

SECTOR	1980		1986	
	(Rm)	%	(Rm)	%
Agriculture, Forestry and Fishing	103	.8	131	.5
Mining and Quarrying	1001	8.1	1484	5.4
Manufacturing	5046	41.0	10150	36.8
Electricity, Gas and Water	9	.0	11	.0
Construction	90	.7	82	.3
Wholesale and Retail Trade	2058	16.7	4535	16.5
Transport, Storage and Communication	122	1.2	180	.6
Finance, Insurance and Business Services	3802	30.9	10571	38.4
Community Services	6	.0	13	.1
Other	187	.7	569	.4
TOTAL	12313	100.0	27551	100.0

Sources: SA Reserve Bank, Quarterly Bulletin, various issues; "Third Census of Foreign Transactions, Liabilities and Assets, 31 December 1980", supplement to SA Reserve Bank, Quarterly Bulletin, December 1982.

other developing countries as indicated in Table 2.10. It is also interesting to note that the absolute share of services FDI in South Africa lies about mid-way in the spectrum of service sector shares amongst LDCs.

In general, the attitude of host country governments towards services FDI is one of caution because it is perceived as contributing little to the local economy in terms of exports, import substitution and technology transfer. Whether this attitude will change in view of the growing awareness of the role of modern services in development, is an open question. Certainly, there is no doubt that services FDI runs a poor second to manufacturing FDI in terms of direct employment creation. For example, 1982 data for US outward investment indicates that, on average, 2,3 jobs were created for every \$100,000 invested in services, whilst in manufacturing, the coefficient was 5,3. Although the situation is obviously much more complex than such a crude comparison may suggest (owing to variations in individual components), both theory and evidence support this general conclusion (UNCTC, 1988:454).

The employment intensity of different types of economic activity has implications for the measurement of the importance of FDI. For example, the conventional method of measuring FDI in terms of stocks and flows can give a totally different picture to one that uses assets or output or even employment. In the case of the US, the use of assets as a yardstick raises the share of services FDI from 37 per cent to 69 per cent,

TABLE 2.10

SHARE OF SERVICES IN TOTAL FDI AMONGST
SELECTED LDCS FOR VARIOUS YEARS

COUNTRY	YEAR	% SHARE
Argentina	1981	25
	1985	26
Brazil	1971	16
	1985	22
Chile	1973	27
	1983	33
Mexico	1971	19
	1981	23
Hong Kong	1981	55
Indonesia	1977	11
	1985	10
Korea	1980	23
	1986	27
Malaysia	1972	37
	1984	40
Singapore	1970	55
	1981	51
Taiwan	1985	23
	1986	23
Egypt	1979	57
	1984	45
Morocco	1975	48
	1982	54
Nigeria	1975	20
	1982	37
Zimbabwe	1982	34
South Africa*	1980	31
	1986	38

Source: UNCTC (1988:380/1)
* see Table 2.9

almost double: the use of employment, on the other hand, drops it to 26 per cent (UNCTC, 1988:371). Measurement, therefore, becomes quite arbitrary, and can lead to some confusion (R. Jenkins, 1987:10).

In the case of South Africa, we have chosen to focus attention on the manufacturing sector despite the fact that in terms of financial stocks it was slightly smaller than services in 1986 - 37 as opposed to 38 per cent - partly because the theory suggests manufacturing FDI is more important to development, and partly because there is far more information both nationally and internationally on manufacturing. Furthermore, manufacturing is the most highly penetrated kind of economic activity (21 and 12 per cent in 1980 and 1986 respectively) as compared with services (11 and 8 per cent) (see Table 2.11). Analytically, it does not matter which sector is the larger because the issues are, to a greater or lesser degree, the same for each: Manufacturing and services combined received 75 per cent of all inward FDI by value in South Africa in 1986.

4.4 Distribution of FDI by Manufacturing Industry Group

More detailed information on manufacturing for 1978 and 1990 is shown in Table 2.11 which is constructed from Rogerson (1982b) and the author's data base. It shows the industry breakdown of foreign-controlled employment according to Standard Industrial Classification (SIC) group.

TABLE 2.11

THE DISTRIBUTION OF FOREIGN-CONTROLLED EMPLOYMENT
BY INDUSTRY GROUP, 1978 AND 1990

SIC Group	1978		1990	
	Employment	%	Employment	%
Food, beverages and tobacco	42,637	11.3	14,060	6.0
Textiles, clothing and leather	33,092	8.8	38,790	16.6
Wood and wood products	5,468	1.5	1,470	.6
Paper and paper products	16,298	4.3	3,450	1.5
Chemicals, rubber and plastics	70,100	18.6	69,020	29.6
Non-metallic minerals	20,570	5.5	21,350	9.2
Basic Metals	18,263	4.8	4,500	1.9
Fabricated metals, machinery and equipment	169,076	44.8	80,200	34.4
Other Manufacturing	1,595	.4	300	.1
TOTALS	377,099	100.0	233,140	100.0

Source: Rogerson (1982b); author's data base

Although there may be problems comparing the absolute employment figures because of variations in the data bases, the industrial mix of foreign-controlled employment in 1978 and 1990 is not dissimilar. Foreign control is concentrated in the heavy industrial sectors of chemicals, rubber and plastics, and fabricated metals, machinery and equipment. In 1978 these two accounted for 63,4 per cent of total foreign-controlled employment, and in 1990, 64 per cent, although the respective shares of the two sectors differ considerably. In the light industrial sectors it is noticeable that foreign-controlled employment has become more concentrated in textiles, clothing and leather, which has increased from 8,8 per cent to 16,6 per cent. One suspects that this is largely owing to the increase in Taiwanese investment in South Africa since 1978 (see Table 2.8). In general, the distribution of FDI by industry group is uneven and highly concentrated in three or four sectors.

This matches international experience elsewhere, although country specific factors also play a role. For example, between 1953 and 1976, 83 per cent of FDI in Greek manufacturing occurred in heavy industry (Parris, 1981:99). It also corroborates the theory that FDI will be concentrated in oligopolistic industries characterized by differentiated technology-intensive products and economies of scale. The increase in FDI in textiles is probably related to low labour costs, tariff protection and government subsidies during the 1980s.

According to the theory outlined in Chapter 1, in the case of domestic distortions, foreign investment is likely to be immiserising if it goes to capital-intensive tariff-protected industries. From Table 2.11 we can see that FDI has unquestionably flowed to capital-intensive industry, but, interestingly, studies of effective rates of tariff protection in South Africa (Holden, 1974; Holden and Holden, 1978), show that these industries have received less effective protection than more labour-intensive ones. "An early study of effective tariff protection (Holden, 1974) shows an average level of 15 per cent on goods for domestic consumption, 6 per cent on intermediate goods and 2 per cent on capital goods in 1963/64" (Holden, 1990a:262).

On the other hand, a more recent study done by the Bureau of Economic Policy Analysis (see Holden, 1990a) reaches less clear cut conclusions for 1984/5. According to their calculations of effective rates of protection (see Table 2.12) those industries with the highest rates were synthetic resins, plastics and man-made fibres, other manufacturing, paint and other chemical products, other plastic products, rubber products and footwear. These industries are principally of intermediate capital intensity. The lowest rates of effective protection occurred in tobacco products, machinery, printing and publishing and other transport equipment; a decidedly mixed bag in terms of capital intensity.

TABLE 2.12

EFFECTIVE RATES OF PROTECTION IN SOUTH AFRICA FOR 1984/85 (%)

Meat, Dairy Products and Fish Processing	32.3
Grain, Sugar and Animal Feeds	43.5
Other Processed Food	30.5
Beverage Industries	19.7
Tobacco Products	-6.9
Wool Scouring, Cotton Ginning and Dyeing	27.9
Spinning, Weaving and Knitting of Textiles	40.1
Clothing	39.3
Leather and Leather Products	39.2
Footwear	51.1
Wood and Wood Products	19.5
Furniture	49.7
Pulp, Paper and Paper Board	22.9
Printing and Publishing	2.8
Fertilizers and Pesticides	12.7
Synthetic Resins, Plastics and Man-Made Fibres	143.2
Other Basic Chemicals	8.6
Medicinal and Pharmaceutical Preparations	14.0
Soaps and Toiletries	41.6
Paint and Other Chemical Products	63.9
Rubber Products	53.2
Other Plastic Products	53.6
Glass and Glass Products	28.5
Other Non-Metallic Products	12.9
Iron and Steel Basic Industries	10.7
Non-Ferrous Metal Basic Industries	25.5
Other Fabricated Metals	21.6
Machinery other than Electrical	-1.0
Electrical Machinery	46.2
Motor Vehicles and Parts	16.3
Other Transport Equipment	4.0
Other Manufacturing Industries	92.2

Source: Bureau of Economic Policy Analysis, Pretoria, in Holden (1990a).

It is thus difficult to generalize with any great confidence about the relationship between capital intensity and effective tariff protection. Nevertheless, McCarthy (1988) estimates that the effective protection afforded manufacturing averages 30 per cent - much higher than Holden's estimate - and it is accurate to say that manufacturing as a whole is more capital- and import-intensive than either agriculture or mining (see Table 2.9). This increases the likelihood that immiserizing growth owing to the presence of domestic distortions in the form of tariffs could have occurred. Fortunately, foreign profits have generally been taxed (see Chapter 5) which reduces this probability, though the scope for transfer pricing suggests that taxation of (reported) foreign profits is a less important factor than it might otherwise be. The increased reliance on export subsidisation is also a potential source of immiserization as it imposes an implicit tax on imports. Thus both import substitution and export promotion are potentially suspect trade strategies given capital-intensive importables, at least where import tariffs and export subsidies are present.

In the pre-war period when most FDI went into mining, it (FDI) resembled the typical vertically integrated, export based "extractive" model of FDI, with no forward and few backward linkages. Since the war, however, FDI has resembled much more the "tariff-jumping" type, with MNC's opting to serve local markets rather than exporting, though with the decline in the value of locational advantages in the post 1976 era, the trend has rather been to replace production with licensing. It is

not clear why FDI is more prominent in heavy industry, which is less protected than light industry, but this may be related to the need for sophisticated technology and skills, in which MNC's have a comparative advantage over local firms.

As far as foreign distortions (only possible in the large country case) are concerned, whether FDI has caused the terms of trade to deteriorate sufficiently to cause immiserization is an empirical question which calls for further research, but the initial impression is that this has not occurred to any great degree because the FDI-dominated sectors (see Table 2.15) are relatively unprotected, and trade policy is now applied more selectively to allow large reductions in import tariffs to export-oriented firms. This reduces the distinction between import and export sectors (Holden, 1990b), and, therefore, the effect of FDI on the terms of trade is less clear cut.

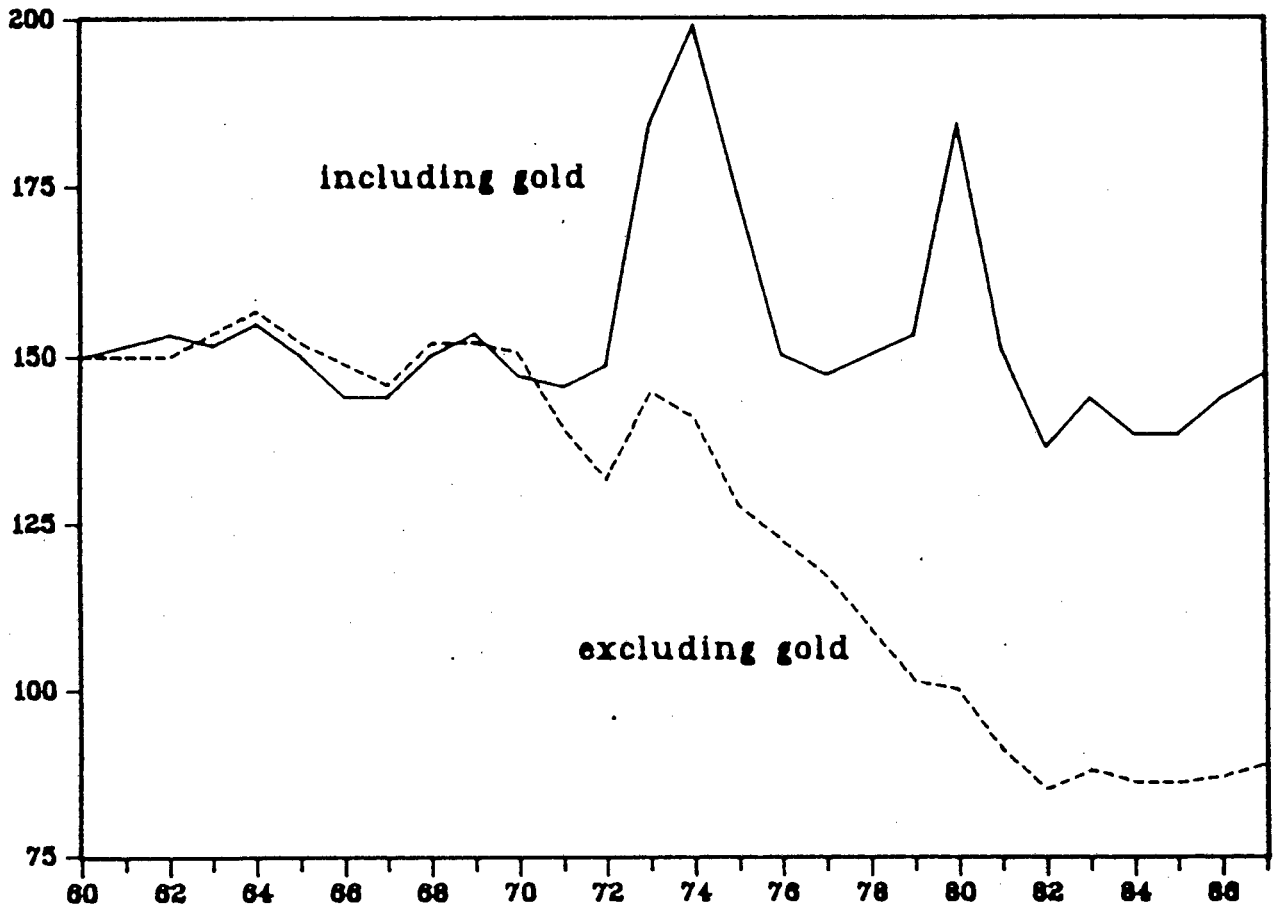
In practice, governments often (and perhaps unwittingly) take action to ameliorate any adverse movements in the terms of trade, through import restrictions, taxation, exchange control regulations and so forth. Furthermore, the measurement of the terms of trade is ambiguous (Helleiner, 1972). At least three different terms of trade (commodity, factor and income) are commonly identified, each method of measurement giving a different result. The problem of isolating foreign investment from other influences affecting the terms of trade is an added complication.

Notwithstanding these difficulties, the movement of the terms of trade remains important to South Africa, especially because the single most important export is gold, the price of which is significantly influenced by both economic and political considerations, and which is consequently prone to unpredictable fluctuations. The importance of the gold price is illustrated in Figure 2.3 which shows the terms of trade including and excluding gold. As can be seen, the effects of the gold price have masked the underlying decline in the economy's competitiveness. In particular, it has masked the accelerating rise in the cost of imported capital equipment, which has increased fivefold since 1966 (Gelb, 1991:20).

Although the Reserve Bank now publishes annual figures for the terms of trade, this data is insufficient to isolate the effect of foreign investment. The evidence from Figure 2.3 for the period 1960 to 1987 supports Marais' (1960) conclusion that movements in the terms of trade are influenced mainly by changes in export prices. Foreign investment, and especially FDI, has been a peripheral influence only. As van der Spuy Heyns (1967:159) comments:

"The effect of foreign investment on South Africa's terms of trade is, therefore, uncertain and cannot be assessed quantitatively. For even if there is an adverse movement in the commodity terms of trade, the factoral or income terms of trade may show off-setting improvements."

FIGURE 2.3

SOUTH AFRICA'S TERMS OF TRADE

Source: Kahn (1991:61)

Although it may not be possible to isolate the effect of tariffs and FDI on the terms of trade, Holden (1989:17) has estimated that over the period 1978 to 1987 the terms of trade effect on economic welfare (as measured by changes in GDP) was 0,81 per cent per annum, which is a relatively insignificant magnitude compared with, say, movements in the gold price or real exchange rates (see Holden, 1989).

4.5 Distribution of FDI in Manufacturing by Employment

Group

The sectoral distribution of foreign-controlled employment by employment group is given in Table 2.13. It is clear from these figures that foreign-controlled employment is concentrated in large firms: for example only 3 720 people were employed in the 51-100 group whilst 63 000 people were employed in the 1001-3000 group. This accords with the theory that MNC's will be large oligopolistic structures, and corroborates Rogerson's (1982a:202) findings that:

"the smallest foreign enterprises, those employing less than 250 workers, account for 59 per cent of all (foreign) enterprises but provide only 12 per cent of total (foreign-controlled) employment. Medium-sized enterprises, in the range 250-999 employees, contain one-third of enterprises and 36 per cent of (foreign-controlled) employment. The greatest proportion of foreign-controlled employment occurs in the top 9 per cent, or largest enterprises, those employing over 1000 workers."

TABLE 2.13

FOREIGN-CONTROLLED EMPLOYMENT BY SECTOR AND
EMPLOYMENT GROUP SIZE, 1990

SIC Group	Employment Group Size							Total FE
	51- 100	101- 300	301- 500	501- 1000	1001- 3000	3001- 5000	5000+	
Food, beverages and tobacco	160	3,800	800	1,800	7,500	-	-	14,060
Textiles, clothing and leather	240	1,350	500	5,200	1,500	10,000	22,000+	38,790
Wood and wood products	-	520	450	500	-	-	-	1,470
Paper and paper products	100	1,050	800	-	1,500	-	-	3,450
Chemicals, rubber and plastics	2,220	9,700	7,500	12,600	12,000	20,000	5,000+	69,020
Non-metallic minerals	-	750	900	7,200	7,500	-	5,000+	21,350
Basic Metals	100	400	-	1,000	3,000	-	-	4,500
Fabricated metals, machinery and equipment	900	6,300	7,600	15,400	30,000	15,000	5,000+	80,200
Other Manufacturing	-	300	-	-	-	-	-	300
Total Foreign Employment	3,720	24,170	18,550	48,700	63,000	45,000	35,000+	233,140
FE/DE%	2.5	7.4	9.5	18.7	42.2*	-	-	21.3

Source: Author's data bank; Census of Manufacturing, 1985

* The Census of Manufacturing does not break down employment groups above 1000 employees. This figure thus represents all employment in firms of 1000 employees or more.

This is further illustrated by comparing foreign-controlled employment (FE) with domestic- (or indigenous) controlled employment (DE). In the smallest employment group, firms employing between 51 and 100 workers, FE is only 2,5 per cent of DE. This proportion steadily increases, and in the largest group, firms employing more than 1000 workers, FE constitutes 42,2 per cent of DE. For the manufacturing sector as a whole, 21,3 per cent of total employment in 1990 occurred in foreign-controlled enterprises. This proportion is significantly less than Rogerson's (1982b:125) estimate that "28 per cent of all manufacturing employment in the country occurs in foreign-controlled enterprises".

The sectoral distribution of foreign-controlled employment by country of origin is shown in Table 2.14, where some striking differences in the country pattern of sectoral investment emerge. It is noticeable, for example, that the distribution between countries in the leading sector, fabricated metals, machinery and equipment, is relatively normal, compared to the second biggest sector, chemicals, rubber and plastics, where 77 per cent is concentrated in UK firms. British investment as a whole is uniformly distributed across all sectors, compared with, say, German investment where 89 per cent of foreign-controlled employment is in fabricated metals, machinery and equipment; or compared with Taiwanese investment where 95 per cent of foreign-controlled employment is in textiles, clothing and leather.

TABLE 2.14

FOREIGN-CONTROLLED EMPLOYMENT BY SECTOR AND
COUNTRY OF ORIGIN, 1990

SIC Group	U.K.	U.S.	Germany	Switzer- land	Nether- lands	Taiwan	Others	Total
Food, beverages and tobacco	9,210	1,850	-	-	-	-	3,000	14,060
Textiles, clothing and leather	25,450	-	-	-	-	7,340	6,000	38,790
Wood and wood products	1,370	-	-	100	-	-	-	1,470
Paper and paper products	1,550	1,600	-	-	150	-	150	3,450
Chemicals, rubber and plastics	52,880	8,780	2,950	1,420	1,500	-	1,490	69,020
Non-metallic minerals	12,000	8,400	150	800	-	-	-	21,350
Basic Minerals	1,500	-	-	3,000	-	-	-	4,500
Fabricated metals, machinery and equipment	35,290	2,330	24,230	3,600	3,920	400	10,430	80,200
Other Manufacturing	300	-	-	-	-	-	-	300
Total	139,550	22,960	27,330	8,920	5,570	7,740	21,070	233,140

Source: Author's data bank.

Similarly, in 1990, US firms controlled nearly 4 times as much employment in chemicals, rubber and plastics, and in non-metallic minerals than in the most heavily penetrated sector, fabricated metals, machinery and equipment. German, Swiss and Dutch investment is concentrated in heavy industry, Taiwanese in light industry, and the remainder (France and Spain, amongst others) shows no industrial bias. The sectoral specialisation of various countries reflects the international pattern of comparative advantage, though as one would expect, the exogenous political factors of disinvestment and sanctions have distorted this pattern. This helps to explain why the US has only got 10 per cent of its investment in the broad engineering sectors as of 1990. Other studies (Watts, 1980; Rogerson, 1982a) confirm that enterprises of particular countries tend to specialise in characteristic industrial groups.

5. THE PENETRATION OF FOREIGN DIRECT INVESTMENT

The question of foreign penetration is a complex one. Although relatively easy to measure, the extent of FDI stocks and flows is not necessarily a reliable indicator of foreign domination (see Section 2.3.3 above). Even when there is little FDI in the economy, a country may be dependent on external forces, and vice versa. This ambiguity must be seen against the background of the broader dependency debate, a concern no longer confined to developing countries¹². Related issues that arise include the host country's potential loss of sovereignty and autonomy

and technological dependence. How one defines foreign penetration is crucial to the outcome of the debate about dependency. Even so, precisely what constitutes an undesirable level of foreign penetration is an open question. Economic analysis has contributed little to such shifting, nebulous concepts, though that is not to say they do not exist. We will return to these issues in Chapter 5 below. Our concern for the moment is to outline the extent of FDI in the South African economy.

One way to measure the penetration of FDI is to compare it with the value of gross domestic fixed capital stock. Unfortunately we lack a detailed breakdown of data on the value of FDI at the industry group level for manufacturing. We only have data on this at the broad level of kind of economic activity for the whole economy, and only for 1980 and 1986. This information is conveyed in Table 2.15 which shows that the level of FDI penetration in 1980 was greatest in manufacturing (21,0 per cent); wholesale and retail trade (18,2 per cent); and finance, insurance and business services (11,3 per cent); with mining and quarrying (8,7 per cent) occupying fourth place.

The same sectors show the greatest FDI penetration in 1986, but more interestingly, all sectors show a much lower degree of FDI penetration. The overall level of penetration for the whole economy drops from 6,5 per cent to 4,1 per cent. Manufacturing nearly halves to 12,0 per cent; wholesale and retail trade drops by nearly a third to 13,0 per cent; and finance,

TABLE 2.15

FIXED CAPITAL STOCK AND FOREIGN DIRECT INVESTMENT
BY ECONOMIC ACTIVITY ; 1980 AND 1986

Economic Activity	1980			1986		
	Fixed Capital Stock (Rm)	FDI		Fixed Capital* Stock (Rm)	FDI	
		Rm	%		Rm	%
Agriculture, Forestry and Fishing	9,419	102	1.1	21,626	116	.5
Mining and Quarrying	10,934	953	8.7	35,209	1,420	4.0
Manufacturing	20,555	4,308	21.0	56,104	6,708	12.0
Electricity, Gas and Water	14,641	9	.1	46,632	11	.0
Construction	1,392	74	5.3	3,042	45	1.5
Wholesale and Retail Trade	8,238	1,503	18.2	21,289	2,762	13.0
Transport, Storage & Communication	25,726	88	.3	66,409	141	.2
Finance, Insurance & Business Services	31,007	3,510	11.3	88,531	7,218	8.2
Community Services	42,456	76	.2	114,593	83	.1
Total	164,367	10,623	6.5	453,436	18,504	4.1

* In constant 1985 prices adjusted by the average annual percentage change in prices.

Source: C. Jenkins (1986:97); "Third Census of Foreign Transactions, Liabilities and Assets, 31 December 1980", supplement to SA Reserve Bank Quarterly Bulletin, December 1982.

insurance and business services are down by a quarter, to 8,2 per cent.

In other words, the level of FDI penetration across the whole economy declined sharply in the early 1980's, presumably owing to disinvestment. There is no evidence to suggest that this trend has been reversed since then. In any event, none of the figures suggests that FDI in any sector is great enough to secure foreign domination or to induce foreign "dependence". Even if this were so, disinvestment would paradoxically prove to be beneficial in the long run, at least in terms of dependency arguments.

Another way to measure the penetration of FDI is to take the number of foreign firms relative to the total number of firms (Parris, 1981:121). This works best when done on a disaggregated level where it is possible to control for exogenous factors, such as size, labour intensity, etc. On the whole, however, the actual number of firms is a poor yardstick, and better proxies can be found at the firm level as long as the data is available. Such proxies include comparisons of foreign and indigenous net worth, assets, net income and employment. Of these, employment is the only real variable, the others being expressed in changing money values. Furthermore, owing to the natural reluctance of firms to disclose financial information about their activities, statistics relating to these nominal measures are more likely to be unreliable. This is an academic issue in the case of

South Africa, because data that would allow financial comparisons does not exist. Fortunately, though, we can use employment as our proxy, along the lines indicated by Rogerson (see Section 2.3 above).

On this basis, Table 2.16 has been constructed for the manufacturing sector, differentiating between foreign- and domestic-controlled employment by industry group for 1978 and 1990. Given the differences in the data bases for 1978 and 1990 alluded to above, comparisons must be treated with caution. Nevertheless, both sets show that FDI penetration is greatest in the sectors chemicals, rubber and plastics, and fabricated metals, machinery and equipment, information which is corroborated by Venter (1989:150). The overall level of FDI penetration is lower in 1990, a finding that broadly corroborates the inferences drawn from Table 2.15 above for the economy in general, and manufacturing in particular. Also noticeable is the large drop in penetration in food, beverages and tobacco, and in paper and paper products. Textiles, clothing and leather, on the other hand, showed an increase of nearly one fifth from 12,6 per cent in 1978 to 15,0 per cent in 1990.

It is difficult to be precise about the causes of the general decline in average penetration levels but this period has, of course, been characterised by disinvestment and the growth of joint ventures including new forms of FDI that involve little or no original capital investment, which would partly account

TABLE 2.16

FOREIGN-CONTROLLED AND DOMESTIC-CONTROLLED EMPLOYMENT,
BY INDUSTRY GROUP, 1978 AND 1990

SIC Group	1978			1990		
	Foreign	Domestic	% of Total	Foreign	Domestic	% of Total
Food, Beverages and Tobacco	42,637	159,317	21.1	14,060	211,518	6.2
Textiles, Clothing and Leather	33,092	230,281	12.6	38,790	219,497	15.0
Wood and Wood Products	5,468	73,594	6.9	1,470	55,781	2.6
Paper and Paper Products	16,298	59,633	21.5	3,450	83,555	4.0
Chemicals, Rubber and Plastics	70,100	56,359	55.4	69,020	94,964	42.1
Non-Metallic Minerals	20,570	64,942	24.3	21,350	64,459	24.9
Basic Metals	18,263	94,270	16.3	4,500	105,603	4.1
Fabricated Metals, Machinery & Equipment	169,076	229,340	42.4	80,200	237,568	25.2
Other Manufacturing	1,595	16,004	9.1	300	20,320	1.4
Total	377,099	982,840	27.7	233,140	1,093,265	21.3

* Figures refer to 1985 employment levels.

Source: Rogerson, 1982b; author's data bank; Census of Manufacturing, 1985, Table 4.1.

for the drop in the proportion of foreign-controlled employment from 27,7 per cent in 1978 to 21,3 per cent in 1990.

Information on licensing agreements, which may give some indication of the extent to which joint ventures have grown, is extremely hard to come by. The Department of Trade and Industry, which vets the transfer of technology, does not keep useable statistics on the number of patents, trade marks, designs and copyright agreements taken out from foreign sources. In general, studies of FDI penetration ignore this aspect when making inter-country comparisons (see Table 2.17). One possible proxy for the extent of technology transfer, and consequently an indicator of "dependence", is the value of annual royalty payments, as reflected in Reserve Bank figures (see Table 4.3). A possible complication in the use of these figures as a measure of technology transfer, is the current incentive that foreign-controlled firms have to load the payments of royalties, etc. in lieu of capital disinvestment at the lower financial rand rate, in cases where they wish to run down their South African assets.

Although the Department of Trade and Industry (DTI) sets strict guidelines for the payment of royalties¹³, and monitors firms' compliance with these guidelines for the Reserve Bank, royalty payments have escalated rapidly in nominal terms, especially in the 1980s, and have increased as a proportion of total profits (see Table 4.3 columns 1 and 2). Whilst this escalation may be the result of increased technology transfer, it is impossible

to be sure. Venter (1989:149) reports that of the 245 United States MNCs commercially active in South Africa at the end of 1987, over 30 per cent were involved only through contracts, licensing or distribution agreements, and franchising or other arrangements. However, it is difficult to place this in perspective without cross-sectional and time series data.

The figures for the proportion of FDI in fixed manufacturing capital stock and of foreign-controlled employment in total manufacturing employment can be compared with those in Table 2.17 which gives the share of manufacturing industry controlled by foreign firms in selected Third World countries. South African manufacturing is decidedly less penetrated by FDI than any country in Latin America or Africa. It is more comparable with Asian countries, where penetration levels are much lower on the whole. On the basis of these figures, allegations that South Africa is in danger of becoming a "branch plant" economy (Rogerson, 1982b:133) seem misplaced, especially given the trend of FDI penetration over the last fifteen years.

On the other hand, in the South African situation where the existing pattern of FDI shows relatively strong penetration of the intermediate and capital goods sector, this increases the country's dependence on foreigners, especially in the field of technology.

In much of the literature on economic development, domestic production of capital goods is seen as a basis for the

TABLE 2.17

SHARE OF MANUFACTURING INDUSTRY CONTROLLED BY FOREIGN
FIRMS IN SELECTED THIRD WORLD COUNTRIES

Country	Year	Foreign Share %	Basis of Calculation
Latin America:			
Argentina	1972	31	Production
Brazil	1977	44	Sales
Central America	1971	31	Production
Chile	1978	25	Sales
Colombia	1974	43	Production
Ecuador	1971-3	66	Assets of public corporation
Mexico	1970	35	Production
Peru	1974	32	Production
Venezuela	1975	36	Value added
Trinidad and Tobago	1968	40	Employment
Africa:			
Ghana	1974	50	Sales
Kenya	1976	30-35	Employment
Nigeria	1968	70	Assets
South Africa	1980	21	Capital Stock
	1986	12	Capital Stock
	1978	28	Employment
	1990	21	Employment
Zaire	1974	30-35	Employment
Asia:			
Hong Kong	1971	11	Employment
India	1975	13	Sales
Iran	1975	10-15	Employment
Malaysia	1978	44	Value added
Philippines	1970	7	Employment
Singapore	1978	83	Output
South Korea	1975	11	Sales
Thailand	1970	9	Employment

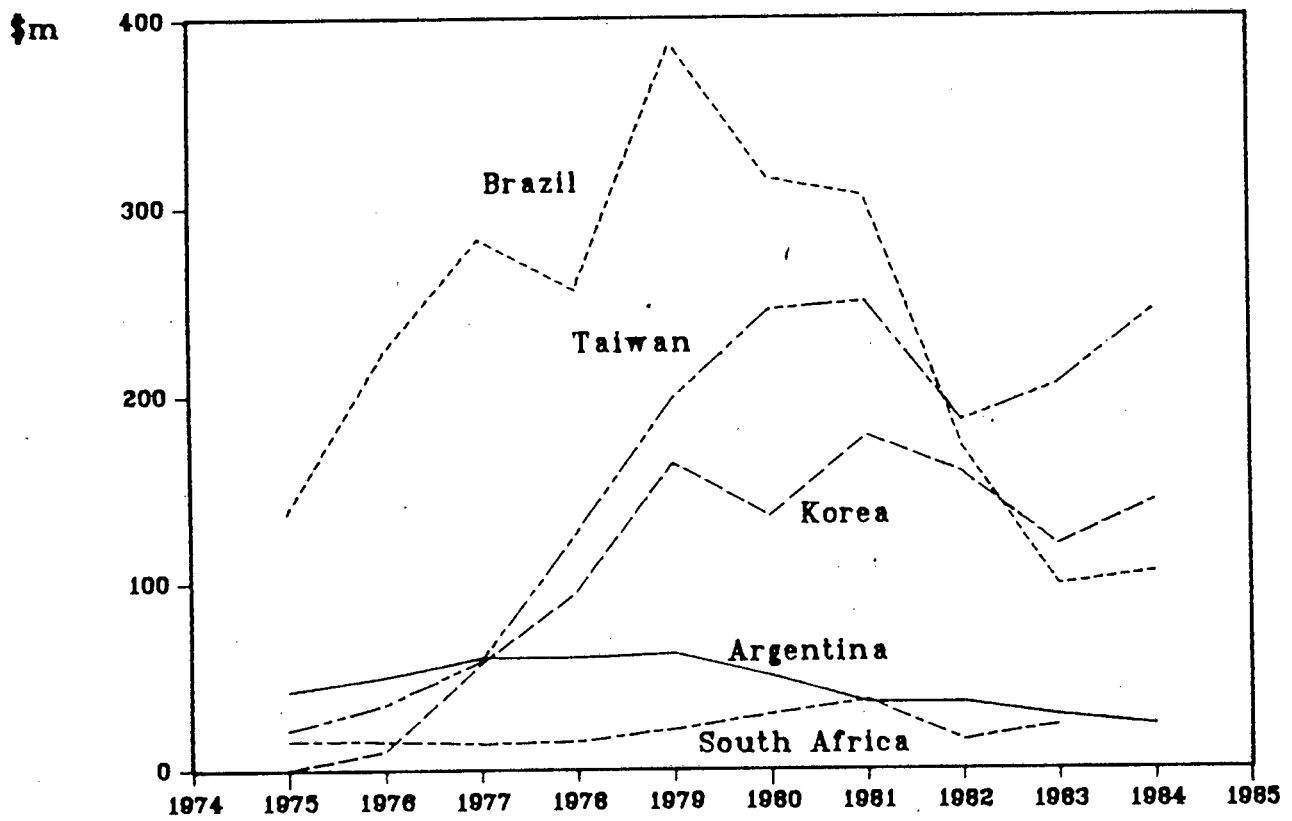
Source: R. Jenkins (1987:10); Tables 2.15 and 2.16

establishment of indigenous technological capabilities in developing countries (Stewart, 1977; Coleman and Nixon, 1986). Production, and in particular, exports of capital goods from developing countries are therefore frequently interpreted as an indication of the growing technological capability of the Third World (Fransman, 1986; Baark, 1991). However, empirical research conducted during the last two decades has called into question the classic view that dependence on foreign technology is one of the principal restraining factors on development. This research has focused attention on the economic and technological feasibility of domestic capital goods production in developing countries. The emerging consensus is that the viability of such production is circumscribed by global technological imperatives (Kaplinsky, 1985), and that more emphasis needs to be put on the diffusion and acquisition of foreign technology (Amsden, 1991).

This suggests that foreign technology can play a vital role in expanding domestic capital goods production via what Amsden refers to as the learning and assimilation process. Although the production of machine tools in South Africa was comparable in terms of volume of output and product range with, for example, Taiwan and South Korea in the early 1970s, since the mid-1970s output growth has been far slower in South Africa than in any of the NICs, particularly those in Asia (Kaplan, 1991:182). This is illustrated in Figure 2.4. As a consequence of this, the import penetration of machinery is at

FIGURE 2.4

MACHINE TOOL PRODUCTION : SOUTH AFRICA AND
SELECTED COUNTRIES



Source: Kaplan (1991:182)

a high level and has shown no tendency to decline over the past two decades (Kahn, 1991:68).

According to the figures in Table 2.18, over half of South Africa's domestic expenditure on machinery is devoted to imported machinery, and this proportion is also high in the category motor vehicles and transport equipment. When this high level of import penetration is considered alongside the high expenditure elasticity of imports (see Table 2.19), it is obvious that capital goods and domestic investment are extremely sensitive to the business cycle. At the same time, the very low price elasticity of machinery imports demonstrates a high dependence on foreign technology. While a 1983 survey indicated that South African manufacturing was becoming less reliant on foreign technology, the extent of dependence remains considerable and no less than 84 per cent of new technology embodied in machinery is imported (Black, 1991a:161).

This high level of penetration cannot be easily reduced unless the local production of capital goods can be increased, but this is not possible without access to the necessary technology, which is owned and controlled by MNCs. On the other hand, according to Kaplan (1987, 1991), the lack of state support for the machine tool industry and the character of the South African business cycle are the major factors constraining its development, rather than technological weakness or limited market size. He argues that increased state aid to the capital

TABLE 2.18

IMPORT PENETRATION RATIOS (SIC CATEGORIES)

	1965	1970	1975	1980	1985
Food	9.7	11.3	12.7	6.0	7.7
Beverages & Tobacco	4.5	5.3	4.0	2.4	4.9
Textiles	37.8	30.2	20.8	15.8	15.8
Clothing	10.8	14.6	10.1	6.7	7.2
Footwear	3.4	8.4	10.5	8.6	10.4
Wood & wood products	25.0	19.7	18.7	12.0	9.3
Paper & paper products	23.4	24.3	17.9	16.4	13.6
Chemicals	25.0	25.2	16.5	15.1	15.1
Metals & metal products	21.1	17.1	16.5	7.0	11.1
Non-metal mineral products	22.8	17.1	12.6	6.3	20.0
Rubber products	21.4	20.2	19.3	22.8	20.6
Machinery	50.3	57.0	52.3	50.1	52.1
Motor vehicles & transport equipment	37.1	39.2	34.5	31.4	30.0

Source: Kahn (1987).

TABLE 2.19

PRICE AND EXPENDITURE ELASTICITIES OF IMPORT DEMANDS

	Price Elasticity	Expenditure Elasticity
Manufacturing	1.15	2.16
Agriculture	0.79	0.19
Chemicals	1.37	0.70
Machinery and Transport Equipment	0.14	2.96

Source: Kahn (1987).

goods market in the form of direct subsidies, and an end to the recurrent problems on the balance of payments caused by capital flight, are the principle solutions to the retardation of the local capital goods industry. At the same time, the expansion of the domestic market via changes in the pattern of demand, and in export markets via a "niche" approach will enable greater economies of scale to be reaped. This is especially important in the case of such core technologies as microelectronics (Baart, 1991). A strong case can also be made for higher effective rates of protection for local technology-intensive industry and for an end to discriminatory input pricing that subsidizes exports of, for example, quality steels and electronic components, at the expense of local consumption.

The usual measures of FDI penetration, such as those in Table 2.17, are potentially misleading indicators of dependence. A more accurate representation of dependence should also look at the structure of imports, the price and expenditure elasticities of import demand, and the size of the capital goods industry in relation to that found in comparable countries. South Africa is more highly penetrated than is at first apparent, especially if, as Kahn (1991:68) argues, the figures for import penetration understate the true picture because they do not reflect the large proportion of imported inputs in locally produced capital goods.

6. SUMMARY AND CONCLUSION

The growth of the manufacturing sector is the single most important structural economic change to have occurred in South Africa during the twentieth century. After the war, this expansion was financed from a number of sources, of which FDI was a crucial component, providing not only finance but other resources such as technology and skills. Despite fluctuations, total foreign investment continued to grow in real terms until 1985 after which it declined owing to reduced profitability and politically inspired disinvestment.

As far as FDI is concerned, since 1969 it has shown a long-term tendency to decline as a proportion of total foreign investment. The country-pattern of FDI ownership is dominated by South Africa's traditional trading partners, especially the United Kingdom which has over one half of the total. Its spatial distribution is remarkably similar to that of indigenous industry, whilst its distribution according to kind of economic activity shows a shift away from manufacturing towards the financial sector, though there are some discontinuities in the data on financial stocks and flows. In terms of employment in foreign-controlled enterprises, manufacturing is still the largest sector. Within manufacturing we find that FDI is highly concentrated in heavy industry, and that foreign-controlled employment has dropped significantly during the 1980s. There seems some evidence that FDI has been influenced by tariffs, which raises the

possibility that immiserizing growth may have occurred, especially when transfer pricing is included in the equation. Apart from the misallocation of resources implied by such a domestic distortion, movements of the terms of trade have had a strong impact on welfare given the openness of the economy. However, it appears that these movements have been only marginally (if at all) affected by the pattern of FDI.

The level of FDI penetration as measured by employment and as a percentage of gross domestic fixed capital stock declined in the 1980s, but the dependence of manufacturing industry on foreign technology remains unaltered. The underdevelopment of the capital goods industry remains a worrisome feature of the industrial landscape.

But it would be a mistake to believe that this underdevelopment can be remedied overnight by cutting off access to foreign technology. In fact, driven by international technological imperatives, including the erosion of comparative advantage owing to low labour costs (Baark, 1991), the opposite is true. The accumulation and diffusion of technology is a crucial component in the growth and export performance of developing countries. Amsden (1991) argues that late industrialisers are "learners" and "assimilators" rather than technological innovators. This implies that access to foreign technology is critical to development, at least in the initial phases. Obviously domestic capital goods production needs to be increased in order to reduce imports. To this end, FDI needs

to be encouraged, especially joint ventures (appropriately monitored).

The underdevelopment of the capital goods industries in developing countries is a function of the global technology market of which MNCs are merely agents. The lessons of the newly industrialised countries (Black, 1991) suggest that the ability to rectify this problem rests on the capacity to assimilate foreign technology and make efficient use of it. The level of FDI penetration in South Africa is low by international standards, even when technology is included (see Chapter 3). Plenty of scope therefore exists for the promotion of FDI and of technology transfer. Selective protection of infant industries, market augmenting measures, and assistance in technology acquisition appear to be three broad areas where economic policy has met with some success in newly industrialised countries. Whilst not suggesting for a moment that we can replicate the South East Asian experience wholesale in South Africa, the central role accorded technology in late industrialisation is there for all to see.

Endnotes:

1. Whilst there is no evidence that indigenous African miners knew of or exploited the diamond deposits along the Vaal River or at Dutoitspan and Colesberg Kopje (later to become Kimberley), it was the evidence of previous generations of indigenous miners and metal workers which provided the clues as to the presence of gold for European miners to follow (see Webb, 1983:168).
2. Although copper was mined at O'Okiep in Namaqualand in 1852 the returns were insufficient to attract foreign capital. It was locally generated capital which dominated the copper-mining industry in the nineteenth century. (The Newmont Mining Company of America brought a 67 per cent interest in the O'Okiep Copper Company in 1937).
3. It should be noted that the issue of foreign investment in the gold mines of the Transvaal Republic, and the question of political control over the mines, was a major reason for the South African War of 1899 - 1902. Foreign investment in South Africa was also a contentious political issue at the end of the nineteenth century (see du Plessis, 1970:180).
4. "Real", in the sense used here, means adjusted for inflation. Whilst it is recognised that fluctuating exchange rates will affect the rand value of foreign assets and liabilities in different ways, because of the different currencies and stocks of inward and outward investment involved (SARB, Quarterly Bulletin, Dec.1989, p.53), one can still arrive at a common rand value in nominal terms and then deflate it. Indeed, it is difficult to know how else to value foreign assets and foreign liabilities.
5. Under the Bretton Woods system, balance of payments deficits were settled by Central Banks drawing from their dollar reserves. The system's demise in the early 1970s led to the emergence of the private international credit market (Eurocurrency market). Under the new international monetary regime, it became possible for countries with current account deficits to delay the necessary internal macroeconomic adjustments by recourse to this market. This they naturally did - leading to the massive build up of debt and the debt crises that followed.

The surge of lending to the United States in the 1980s had its origin in the twin problems of expanding US budget and current account deficits, and the concomitant high level of US interest rates.

6. Although no attempt is made to do so here (because it is only obliquely relevant to a study of host country interests), it is possible to measure the intensity of outward investment flows by adapting the analysis of trade intensity along the lines suggested by Pangestu (1980, 1985) and used by Hill (1988). The resulting investment intensity index provides a useful means of gauging the relative importance of investment flows. The index measures the share of one country's investment in another as a proportion of the latter's share of total investment in (say) developing countries. Formally, the index D_{ji} is given by

$$D_{ji} = \frac{I_{ji}}{I_j} \cdot \frac{O_1}{O_i} \cdot 100$$

- where D_{ji} = the intensity of direct investment in country j from country i .
 I_{ji} = direct investment in country j by country i
 I_j = total direct investment in j
 O_1 = total direct investment from (developed) source countries to developing countries.
 O_i = total direct investment from country i to developing countries.

An index of 100 indicates that the share of direct investment by country i in country j out of i 's total investments in developing countries. Indices greater (lesser) than 100 illustrate shares that are higher (lower) than would be expected on the basis of the investing country's share of all outflows to developing countries.

7. Until recently, the Japanese government did not permit outward Japanese investment, but Japanese investment in South Africa is also specifically outlawed. However, this ban does not include licensing, franchising and other 'new forms' of joint ventures between Japanese and South African firms.
8. Official Reserve Bank figures for foreign investment as well as those of the major investing nations incorporate data for Namibia with that for South Africa. With the independence of Namibia this practice will presumably cease, but from a South African perspective this will be of little practical significance given the small amounts involved.
9. Measuring foreign ownership and control is a problematic exercise at the best of times. The dynamic nature of commerce, the practice by firms of avoiding official paperwork, and their understandable reluctance to divulge information relating to ownership and control, are some of the obstacles which need to be overcome in measuring FDI. In the end, when trying to find out if a particular firm is indigenous or "foreign" it may be necessary to use "informed guesswork", after having traced ownership

and control, which are themselves nebulous concepts, through the labyrinth of interlocking companies that characterise the structure of modern business. Ultimately, the definition used is perforce arbitrary.

10. Although both Rogerson and the author used the Bureau of Market Research's (unpublished) Industrial Register to provide information on the industrial classification and size of establishments, because this register does not contain information on ownership (only geographical location), it was necessary to merge it with an alternative list of foreign firms known to be operating in South Africa, in order to arrive at a more complete picture of the manufacturing sector. Unfortunately the alternate lists used in 1978 and 1990, whilst they are themselves based on identical primary sources, define a foreign-controlled enterprise in different ways. Rogerson compiled his own list from a number of sources including the Dun and Bradstreet series "Who Owns Whom". The author, on the other hand, relied on lists of foreign firms provided by the Investor Responsibility Research Centre (IRRC) (1877:1988).

Rogerson defines a foreign-controlled enterprise as either a subsidiary or associate of a foreign company, where the terms "subsidiary" and "associate" are based on the Dun and Bradstreet definition used in their series "Who Owns Whom". Subsidiaries are defined as "a company in which another (the parent) either holds more than half in nominal values of the equity share capital or is a member and controls the composition of the board of directors, or one which is a subsidiary within these terms of a company which is in turn a subsidiary of another" (Dun and Bradstreet, 1978/9: xi). Associated enterprises are those "in which another or a subsidiary of that other (the senior associate) holds a substantial interest of not more than half in nominal value of the equity share capital" (Dun and Bradstreet, 1978/9: xi) (emphasis added). It is not made clear what constitutes a "substantial interest". Conceivably the use of these two definitions could cover the entire universe of foreign firms with any contacts in South Africa, i.e. subsidiaries and the rest, which is unsatisfactory and unhelpful. As a working attempt to define FDI this definition is too loose and too vague. C. Jenkins and McGrath (1985:34) are mistaken in believing that this constitutes a "strong definition".

The IRRC (1988:3), on the other hand, define a company "as having direct investment in South Africa if it owns 10 per cent or more of an active South African subsidiary or affiliate", which seems *prima facie* a stronger definition than that used by Rogerson, though we cannot be sure. The IRRC figures for employment are unfortunately incompatible with both the Rogerson figures and those of the author because they only represent those

firms in which the international parent has a majority interest, i.e. only subsidiaries in terms of the Dun and Bradstreet definition.

The South African Reserve Bank definition of FDI (see chapter 4) is considerably stronger than that used by the IIRC or Rogerson: viz, the ownership of 25 per cent or more of total issued voting stock or comparable ownership or voting rights (van der Merwe and Bester, 1983:23).

The IIRC (1988:4) merged all known lists of firms operating in South Africa including the 1987 edition of Dun and Bradstreet Ltd's Principal International Businesses; the Spring 1987 edition of Toyo Keizai Shinposha Ltd's Japan Company Handbook; and the 1987 editions of Dun and Bradstreet Ltd's Who Owns Whom, Australia and Far East, Who Owns Whom, Continental Europe, and Who Owns Whom, United Kingdom and Republic of Ireland. Information on U.S. and Canadian firms with links to South Africa was *inter alia* obtained from Dun and Bradstreet Ltd's Who Owns Whom 1986, North America, the National Register Publishing Co's 1986/87 International Directory of Corporate Affiliations, and the March 1987 update of the Unified List of U.S. Companies with Investments or Loans in South Africa and Namibia, published by The Africa Fund.

11. Comparisons with earlier periods are problematic because the method of classification changed after the Third Census of Foreign Transactions, Liabilities and Assets published in 1982. Since then, financial holding companies have been classified under the financial sector irrespective of the activities of their subsidiaries. Compared with earlier periods, this has the effect of reducing the share of manufacturing and increasing that of finance, insurance and business services (q.v.).
12. Many industrialised nations are today worried about inward foreign investment flows. Countries like Canada (57 per cent) and Australia (36 per cent) exhibit very high FDI penetration ratios (Wheelwright, 1980). In Belgium FDI is responsible for 25 per cent of GDP and total sales, 18 per cent of employment and 30 per cent of exports (Parris, 1981:101). During the 1980s the United States saw its position change from being the leading source of FDI to becoming the largest recipient (UNCTC, 1988:6).
13. Royalty payments are subject to a maximum fee as a percentage of the net ex-factory price of 4 per cent in the case of consumer goods, and 6 per cent in the case of intermediate and final capital goods. These maxima include all payments for know-how, trademarks, etc. The DTI also stipulates that agreements should not unduly restrict the export of licensed products.

CHAPTER 3

FOREIGN DIRECT INVESTMENT IN THE SOUTH AFRICAN
MANUFACTURING SECTOR

1. INTRODUCTION : AN OVERVIEW OF SOUTH AFRICAN
MANUFACTURING SINCE 1945

Historically, the manufacturing sector in South Africa has experienced significant growth relative to the rest of the economy. This is evident from the figures in Table 3.1 below.

TABLE 3.1

PERCENTAGE DISTRIBUTION OF GDP AT FACTOR COST BY
KIND OF ECONOMIC ACTIVITY 1911-1989

Year	Agriculture, Forestry and Fishing	Mining and Quarrying	Manufacturing
1911	21.1	27.6	3.8
1920	22.2	18.3	7.3
1930	14.2	15.6	9.3
1940	12.7	18.8	12.4
1950	17.7	13.5	16.4
1960	12.3	14.2	18.7
1970	8.2	10.2	23.6
1980	6.9	22.9	22.6
1989	5.7	12.3	24.2

Source: Union Statistics for 50 Years and S.A.R.B. Quarterly Bulletin, various issues.

During the post-war period the share of manufacturing in GDP has increased from 16,4 per cent in 1950 to 24,2 per cent in

1989. The growth rate of output and employment has not been constant over this period. Since the early 1970s, the economy has undergone fundamental structural change with major implications for the growth rate of output and employment. It has become usual to divide the post-war period into two sub-periods, the former characterised by steady economic growth, and the latter by economic stagnation. For example, the annual real economic growth rate decreased from 5,5 per cent per annum between 1960 and 1974 to 1,9 per cent per annum between 1974 and 1985. The number of jobs created in the formal sectors of the economy dropped from 157 000 to 64 000 annually in these sub-periods (van der Berg, 1989). Although the strong distinction between these sub-periods has been questioned by T. Moll (1991), all commentators agree that the economy has been underperforming since the 1960s.

In 1986 fewer jobs existed in manufacturing than in 1980. At the same time, the trend towards more capital intensive production techniques reflects the negligible growth in labour productivity, which contributed to the overall decline in multi-factor productivity in manufacturing of 2,4 per cent between 1970 and 1986 (McCarthy, 1988; du Plooy, 1988). According to van der Berg (1989):

"Some of the causes of the increasing capital-intensity in South Africa during the 1970s were factor price distortions, particularly rapid increases in the real cost of labour, low interest rates (cost of capital), the tendency towards overvalued exchange rates favouring capital imports, imports of often inappropriate technology from developed countries, and

an unstable labour force, at least in the perception of management, detracting from the attractiveness of using labour in the production process" (p.194).

Industrialisation in South Africa has followed the conventional pattern of transition from consumer goods to intermediate and capital goods, or from light to heavy industry (Hoffman, 1958; Sutcliffe, 1971). Table 3.2 shows that since the war (1946) the share of light industry (as defined by Chenery and Syrquin (1984) and McCarthy (1988)) in manufacturing value added and employment declined from 55,9 per cent to 36,8 per cent and 54,8 per cent to 48,2 per cent respectively. The smaller decline in employment, reflects the relative labour-intensiveness of light manufacturing.

TABLE 3.2

MANUFACTURING VALUE ADDED AND EMPLOYMENT 1946 - 1982

Year	Light Industry		Heavy Industry	
	Value Added %	Employment %	Value Added %	Employment %
1946	55.9	54.8	44.1	45.2
1960	49.0	53.7	51.0	46.3
1970	42.7	50.2	57.3	49.8
1982	36.8	48.2	63.2	51.8

Source: McCarthy (1988:11).

Table 3.3 gives a sectoral breakdown of the increase in value added and employment in manufacturing from 1970 to 1982. Though the sectors Leather and leather products and Footwear

TABLE 3.3

GROWTH IN REAL MANUFACTURING VALUE ADDED(CONSTANT 1980 PRICES) AND EMPLOYMENT1970-1982

Sector	Average Annual Growth		% Contribution to Increases	
	Real Value Added	Employment	Real Value Added	Employment
Food	4.0	2.9	8.9	11.3
Beverages	7.2	4.0	4.1	2.6
Tobacco Products	-5.7	.0	-.6	.0
Textiles	2.6	1.3	3.0	3.4
Clothing	5.0	3.8	3.3	10.2
Leather and products	13.6	2.0	.1	.4
Footwear	13.5	2.5	.6	1.8
Wood and products	3.7	2.0	1.5	2.5
Furniture	4.3	3.2	1.4	2.4
Paper and products	2.8	1.4	2.0	1.1
Printing and publishing	3.6	3.1	3.0	2.9
Chemicals	5.7	4.2	15.7	8.8
Rubber and plastics	7.9	4.0	6.5	4.0
Non-metallic minerals	2.3	1.2	2.7	2.6
Basic Iron and Steel	2.7	3.0	5.6	6.4
Non-ferrous metals	8.5	4.2	3.0	1.7
Metal products	4.0	3.3	8.6	10.8
Machinery	6.8	4.0	12.7	8.1
Electrical machinery	8.9	5.0	8.5	7.2
Transport Equipment	5.7	4.2	8.3	10.1
Other industries	2.8	2.7	1.0	1.3
Total Manufacturing	4.6	3.1	100.0	100.0

Values deflated with respective production price indices
 Due to rounding, columns do not add up to 100.0

Source: McCarthy, 1988, p.12

recorded the highest average annual growth in output, their contributions to the growth of total manufacturing employment and real value added are exceedingly modest. On the other hand, the chemical and machinery industries made important contributions to increases in real value added (15,7 and 12,7 per cent respectively) and employment (8,8 and 10,8 per cent respectively). In fact, light industry contributed only 27,9 per cent and 38,6 per cent to increases in output and employment from 1970 to 1982.

The increasing share of heavy industry in the growth of manufacturing output and employment has not reduced imports. For example, as a percentage of GDP imports were on average 27 per cent between 1950 and 1955; whereas the figure for the period 1980 to 1984 was 24 per cent (McCarthy, 1988). The reason for this is that the fast growing industries of the post-war era like chemicals, machinery and metal products have a high import content.

Furthermore, as we pointed out in Chapter 2, the continued reliance on foreign technology manifests itself in the inability to develop a local capital goods industry that could reduce this import dependence. Efforts to accomplish this goal must incorporate the development of an indigenous technology sector. At the same time this is not possible without access to foreign technology - which can be purchased or borrowed and copied (Amsden, 1991). Foreign technology is the key to improving international competitiveness, thus boosting export

growth and enabling the economies of scale that the production of modern core technologies like microelectronics require (Amsden, 1985; Baark, 1991; Kaplinsky, 1991). In this way, the domestic capital goods industry can be developed by "piggy-backing" foreign technology.

2. RESOURCE TRANSFER EFFECTS

2.1 The Provision of Capital

The most obvious and immediate impact of FDI on a host country is the inflow of capital. For those countries where capital is in short supply this is a most important effect. But although MNCs have been responsible for injecting capital into host countries, the quantities involved are often smaller than imagined, and the consequences are unpredictable. For example, the privileged access of MNCs to financial resources at home and abroad, may crowd local firms out, and not all MNC investment involves the transfer of capital because funds can be raised locally on the money and capital markets, and through internal financing via the retention of profits.

Table 3.4 (column 1) shows that with the exception of 1987, there have been inflows of FDI every year since 1957, when records were started. Expressed as a percentage of annual gross domestic fixed investment (GDFI) it appears that FDI has made a very modest contribution to the financing of GDFI. On average its annual unweighted contribution is only 7,3 per cent, with a high of 17,6 per cent in 1968 and a low of -3,1

per cent in 1987. The pattern of FDI inflows is shown in Figure 3.1.

The conclusion that capital inflows have played only a minor financing role is reinforced by the data on the financing of foreign firms contained in Table 4.2 below, which shows that since 1957, foreign-controlled firms have retained a relatively high proportion of their net profits (between 30 and 76 per cent), with the notable exceptions of the years 1961, 1987 and 1988 which coincided with periods of unusual uncertainty.

According to the Reserve Bank figures in Table 4.3 below (see Chapter 4), share premium retained profits and reserves have been the major source of capital formation in MNCs since 1957, accounting for 86,3 per cent of the total. This is an inordinately large proportion, especially in a developing country that needs foreign capital inflow. In a sense, it is a reflection of the early onset of the debt cycle (Stewart, 1985; Williamson and Milner, 1991:307-309) referred to in Chapter 4 below. It is also much larger than that reported for other countries. Manser (1973), for example, finds that on average, external sources of finance form thirty to forty per cent of subsidiaries' overall financing, a conclusion supported by Lall and Streeten (1977) and Westphal et al (1979). The bias towards internal financing in South Africa is explained by the senescence of FDI, a decline in investor confidence since the 1960s, unpredictable currency fluctuations and the sometimes poor conduct of stabilisation, trade and industrial policies (see Chapter 5).

TABLE 3.4

FDI AND GROSS DOMESTIC FIXED INVESTMENT1957-1988 (Rm)

At the end of	FDI* Inflow	Gross Domestic Fixed Investment	Column 1 ÷ Column 2 %
1957	65	936	7.0
1958	115	1073	10.7
1959	73	1042	7.0
1960	42	1061	3.9
1961	21	1068	2.0
1962	92	1072	8.6
1963	63	1302	4.8
1964	102	1611	6.3
1965	178	1977	9.0
1966	260	2084	12.5
1967	162	2219	7.3
1968	407	2316	17.6
1969	426	2620	16.2
1970	383	3061	12.5
1971	462	3177	14.5
1972	514	3739	13.7
1973	344	5027	6.8
1974	514	6158	8.3
1975	404	8110	5.0
1976	659	9221	7.1
1977	303	9478	3.2
1978	409	10235	4.0
1979	751	12125	6.2
1980	1995	16209	12.3
1981	1581	19964	7.9
1982	1034	22459	4.6
1983	945	24498	3.8
1984	2098	26209	8.0
1985	849	28715	2.9
1986	829	28707	2.9
1987	-989	31497	-3.1
1988	480	39311	1.2

Source: "A Statistical Presentation of South Africa's Foreign Liabilities and Assets, 1956 to 1981" supplement to Reserve Bank Quarterly Bulletin, June 1983; Reserve Bank Quarterly Bulletin, various issues.

* FDI is defined to include both retained earnings and direct long term capital inflows because they are analytically equivalent.

FIGURE 3.1

FDI'S CONTRIBUTION TO THE FINANCING OF
GROSS DOMESTIC FIXED INVESTMENT



Source: Table 3.4

Apart from its implications for growth and the balance of payments, the reluctance of foreign investors to transfer direct capital (as opposed to technology) to South Africa in recent times raises the problem of the generation of imperfections in the local capital market referred to in Chapter 1. Fortunately, the South African capital market is well developed (Blumenfeld, 1988) and no evidence exists that MNCs have favoured status over local firms. Indeed, as a result of the growth of "new forms" of FDI in South Africa during the 1970s and 1980s, the distinction between foreign and local firms is less clearcut. The use of foreign technology is not confined to MNCs, so that the efficiency gains are widespread.

The debate about the impact of foreign investment on growth is characterised by widely divergent viewpoints and an obvious lack of consensus (Todaro, 1989). The results of investigations into this relationship are largely arbitrary because they are often pre-determined by the choice of model. For this reason, and also in view of the relatively small contribution of capital inflow and especially FDI to gross domestic fixed investment, no attempt has been made to apply a dual gap-type methodology nor to estimate its impact on domestic savings and investment. Such exercises have been done for South Africa before in order to estimate the impact of total foreign investment, including non-FDI. The tests of the relationship between foreign investment and domestic savings reported by Suckling (1975) and McGrath and Jenkins (1985)

both suggest that foreign investment has a strongly negative impact on savings. Suckling finds a marginal propensity to consume out of foreign investment of 43 per cent (p.318), McGrath and Jenkins, 24 per cent (p.27). These results show that the inflow of foreign investment has increased the capital stock by an amount less than that indicated by published figures. In other words, capital inflows have been used for consumption purposes (see Papanek, 1972), thus reducing their impact on growth.

More recently Smit and Pellisier (1991) used both a potential production function model and the Bureau for Economic Research's macroeconomic model of the South African economy to estimate this relationship. The results of both models, albeit different, suggest that the growth elasticity of foreign capital flows is low. In the former model, a change of 6 per cent in foreign capital flows (in terms of GDP) results in a 0,8 to 0,9 per cent change in average real growth per annum. In the latter highly sophisticated model, this elasticity was only marginally higher. For example, a 3 per cent change in capital flows (in terms of GDP) resulted in a 0,6 per cent change in average growth.

Although the purpose of the authors was to illustrate future growth patterns given various assumptions about capital inflows, the models are based on historical data. Both models, as well as similar exercises contained in Smit (1991), reach the conclusion that the quantitative impact of foreign capital inflows on South African economic growth is, and by implication

has been, quite limited, at least since the 1960s. Blumenfeld (1988) and Stoneman (1988) also reach the conclusion that given historical capital:output ratios in South Africa, a steady growth rate of 7 per cent per annum would be required to generate sufficient domestic savings with which to finance sufficient investment to contain unemployment. In other words, their conclusion supports the view that the marginal efficiency of capital (including foreign capital) is low. Blumenfeld also argues that since the mid-1950s, South Africa has on average generated sufficient domestic savings to finance most domestic investment. "Since 1970, for example, the ratio of gross domestic savings to gross domestic investment has averaged almost 95% (p.114). Bell (1990), too, argues that:

"Some estimates of our need for foreign capital to achieve high rates of growth are in my view gross exaggerations. In developing countries foreign direct investment has generally been a consequence, rather than a cause, of rapid industrialisation. Rapidly growing economies have in fact depended relatively little on foreign capital, compared to domestic savings". (p.22).

This picture of foreign investment is supported by the findings of the author's survey (see appendix 2). Of the 29 foreign-controlled firms from whom responses were received, only 13 or 45 per cent were initially financed entirely by transfers from parent firms overseas, and of the remainder, one half (8) reported that they were initially financed entirely by local debt and equity. The other 8 firms were initially financed by a combination of local and foreign sources. The point here is to illustrate the minor role of capital inflows in FDI capital

formation. However, it is interesting to note that in each case where firms were initially financed from abroad, this involved the setting up of new facilities rather than the acquisition of existing facilities, a situation that is clearly preferable to the reverse. The 6 firms that were established via acquisition were all funded locally. Furthermore, consistent with observations elsewhere (Cohen, 1975; Hellenier, 1989), amongst the 27 firms that have added productive capacity since start-up, 14 or 52 per cent financed this entirely from local sources, mainly by incurring onshore debt or by reinvesting earnings. Only 7 firms raised equity.

Another element in the financing of any firm is the availability of foreign borrowing. According to a UNCTC study in 1988 (p.138) about 12 per cent of Latin America's foreign debt in 1982 was accounted for by debts of affiliates and subsidiaries of MNCs. No figures on this are available for South Africa, although this type of borrowing (indirect foreign investment) is subject to specific exchange control. Experience gained during the exchange control liberalisation period of 1981-82, has shown that it is prudent to monitor this type of borrowing for balance of payments purposes.

In the case of foreign-controlled firms, exchange control also imposes restrictions on local borrowing according to the following formula (Standard Bank, 1988:7):

$$50\% + \left(\frac{\text{South African participation}}{\text{Non-resident participation}} \times 50\% \right) \text{ of effective capital}^3$$

A fully foreign-owned company is thus limited to local borrowing of 50 per cent of effective capital. This percentage increases as local participation grows. In this way, MNCs are encouraged to enter into joint ventures and some of the rents accruing to the MNCs (owing to ownership of technology, etc.), are captured domestically, although Rogoff (1983:59) argues that this is a fairly lax regulation. In some countries, such as Mexico, India and the Republic of Korea, the government actually requires that a certain portion of capital be raised locally (UNCTC, 1988:139). MNCs on the other hand, will be keen to borrow locally as a hedge against devaluation or any other unforeseen difficulty.

Since the declaration of the moratorium on foreign debt in September 1985, and the capital sanctions which followed, it is self-evident that local subsidiaries and affiliates have been less able to borrow off-shore. Where this situation places MNCs at a disadvantage relative to indigenous competitors, provision exists in the exchange control regulations to waive the limits on local borrowing, under certain circumstances. Likewise, where local funds are cheaper, thus disadvantaging MNCs, the authorities are prepared to be more flexible (Standard Bank, 1988:7).

One reason why the authorities wish to limit the extent of local borrowing, is to limit the exposure of local banks to foreign investors who may attempt to repatriate funds and assets to their home countries, with or without the exchange

control approval. Legally, temporary excess local borrowing facilities are not normally permitted to finance higher dividends or other withdrawals by non-residents; and directors' fees, management fees, licences and royalties are all governed by exchange control regulations. But this governance cannot, of course, prevent illegal practices such as transfer pricing, repatriations of capital assets, etc. Hence the need to place a limit on local exposure, especially as it appears that there has been extensive capital flight from South Africa since the early 1970s in excess of outflows identified by official statistics (Kahn, 1991b; Smit and Mocke, 1991).

Local borrowing is also restricted in order to encourage MNC subsidiaries to raise local equity. Presuming that this equity is purchased by residents, the profits (and any monopoly rents) will stay in the country. Non-residents can only transact equity via the financial rand. There is little information on the extent to which local equity has been raised by MNCs. On the basis of data published by Union Acceptances Limited (1974), Tomlinson (1975) concluded that MNCs are very conservative in their gearing practices. As can be seen in Table 3.5, the average ratio of long term finance to shareholders' funds for samples of MNCs in the mining, manufacturing and financial sectors in 1959 and 1969 was very low.

TABLE 3.5

GEARING OF SAMPLES OF FOREIGN-CONTROLLED FIRMS IN MINING,
MANUFACTURING AND FINANCIAL SERVICES, 1959 AND 1969

Sector	Number in Sample		Ratio of long term finance to share- holders' funds %	
	1959	1969	1959	1969
Mining	67	71	14,0	8,9
Manufacturing	111	320	22,4	25,9
Financial Services	36	58	5,7	9,1

Source: Union Acceptances Limited, Economic and Financial Review, U.A.L., February 1974, p.6 in Tomlinson, B., The Role of Private Foreign Investment and Multi-national Corporations in the Economic Development of South Africa, unpublished MBA thesis, UCT, 1975.

Prima facie, it thus appears that MNCs or their subsidiaries are more likely to rely on equity than on borrowing (either local or offshore) as a means of finance. On the other hand, these figures are now quite dated, and there is considerable variation in the gearing of the different sectors. Manufacturing, in particular, appears to use debt to a much greater degree than either mining or financial services. Nevertheless, it appears on balance that capital inflows are of secondary importance to the financing of MNCs, which says a great deal about the financing ability of local financial and capital markets.

2.2 The Provision of Technology

The United Nations Commission on Transnational Companies (UNCNTC) (1983:162-3) defines technology as follows:

"Technology may be embodied in the form of capital goods, such as machinery, equipment, and physical structures; or it may be disembodied in such forms as industrial property rights, unpatented know-how, management and organisation, and design and operating instructions for production systems. Foreign direct investment has traditionally been one of the most important channels of technology transfer as it involves the physical relocation of entire production systems, combining in a single package capital goods and a number of the forms of disembodied technology."

Studies of the determinants of economic growth, such as those undertaken by Denison (1967), have typically concluded that the largest single contributing factor is technological progress, as opposed to capital accumulation, improved education or any other specific factor. Technology is analogous to capital in that resources currently devoted to investment in making technological improvements are expected to permit larger output to be realised in the future. However, there is a very important difference between capital and technology, deriving from the public-good characteristics of the latter (Williamson and Milner, 1991). There is no universal or perfect solution to the problem of public-good provision but one possibility is to have the state provide the service in question, another is to create a patent system in order to provide the incentive to overcome free riding. In practice, most societies use a variety of ways to ensure a continued supply of technology, including these two options.

It is the public-good characteristics of technology that are responsible for the fact that present-day developing countries have the chance of making the transition from a subsistence economy to affluence so much more rapidly than did the first industrial countries. In itself, this is an enormous advantage, but it does not mean that developing countries face no problems of access to suitable technology. For LDCs with limited resources domestic production of technology is not economically feasible, and they must acquire it by purchasing or imitating it (Singer, 1970-1971; Stiglitz, 1987; Amsden, 1989; Baark, 1991). The crucial role of FDI is to provide foreign technology and capital goods more cheaply than it would cost to develop them at home (Sender and Smith, 1986).

According to Dicken (1986:362) three issues are especially important in evaluating the technological impact of MNCs on host countries:

- "1. The extent to which technology is transferred both within the bounds of the TNC and to other - domestically based - enterprises.
2. The appropriateness of the technology transferred - both processes and products.
3. The costs to the host economy of acquiring the technology."

The existence of a particular technology within a MNC does not guarantee that its benefits will be widely diffused through a host economy. This depends on the extent to which the technology is made available to potential users outside the

MNC either directly, via linkages with indigenous firms, or indirectly via 'demonstration' effects. Such diffusion immediately runs up against the problem of property rights. The public-good nature of technology, i.e. zero marginal costs of production once it is fully developed, dictate that continued private production requires some degree of monopoly which, in the technology market, is given form by patents. This is, of course, the essence of internalization, and provides a key rationale for the MNCs existence. Consequently, MNCs tend to locate the bulk of their technology-creating activities - research and development - in their home countries or in other industrial countries where they can guard it. Lall (1974:10) has made this point as follows:

"Even if it is admitted that TNCs transfer the best production technology, they do not transfer the capability to generate new technology to affiliates in the Third World. They transfer 'know-how' (production engineering) and not 'know-why' (basic design, research and development)."

It is much more likely that the MNC will transfer technology to a host country if the intention is to serve the host country market itself. This places the host country in a relatively stronger bargaining position and as Reuber (1973:188) puts it:

"Because of the relatively stronger bargaining position of the host country, it can insist on more R and D activity being carried on locally. And because of its interest in local demand and cost conditions and its long-term commitment, the firm has a greater incentive

to take advantage of the gains to be obtained from having research activities in intimate association with the host-country environment."

In contrast, there is far less incentive for MNCs engaged in foreign production for exports to transfer technology to the host country because the production is destined for world markets where the dominant technologies are often more compatible with home country research and development. While this tends to be true for both developed and less developed host countries (Hood and Young, 1976), research and development by MNCs tends to be less represented in the latter.

In the case of LDCs a major issue governing the impact of MNC technology transfer is its "appropriateness" in terms of local factor endowments (and prices) and local needs (Stewart, 1977; Soete, 1985; Dahlman et al, 1987; Meth, 1990). The 'factor-proportions problem' is also important in LDCs and a wide range of literature has emerged on the subject (Eckhaus, 1955; Higgins, 1958; Streeten, 1971; Stewart, 1978, 1974; Singer, 1975; Marsh et al, 1983; Amsden, 1985; Soete, 1988). The transfer of "inappropriate" technology exacerbates the factor proportions problem. For example if capital-intensive technology is transferred by MNCs then this places severe limits on the degree of labour absorption possible. Local entrepreneurs are then faced with a limited range of relatively capital-intensive production techniques and are unable to substitute their own technologies because of what Singer (1970-71:64) has called the system of international

technological dualism - "... the fact that knowledge is accumulated by the richer countries, in the richer countries and in respect to the problems of the richer countries". The role of "inappropriate" technology in exacerbating the factor proportions problem was explained in Chapter 1.

Apart from aggravating the unemployment problem the introduction of excessively capital-intensive technology may worsen existing income inequalities, encourage local firms to operate similar inappropriate production processes via the "demonstration effect", and bias production towards inappropriate types of consumption for which the technology has been developed (Edwards, 1985; Kaplan, 1991).

In the light of these problems, it is obvious that the degree to which MNCs adapt their technology to suit local economic conditions in host countries is a crucial factor. There is much disagreement about the extent to which this occurs (Kirkpatrick et al, 1984). Firstly, Hood and Young (1979) point out that there are several factors that work against adaptation : technologies appropriate to conditions in LDCs may not exist; distortions in the price of goods and factors may encourage the use of too much capital in relation to labour; small markets and monopoly advantages may reduce the incentive to find appropriate technologies; and skilled labour may be scarce in LDCs.

Secondly, Lall and Streeten (1977:72) make a distinction between adaptability and adaptation. They maintain that much of the technology in "high-tech" industry cannot be changed to suit LDCs' endowments but that other 'low' and peripheral technology is more adaptable, although at some cost. However, it seems that MNCs have not attempted in any significant way to adapt their technology, save some scaling down of production runs to adjust to smaller markets. They also report no evidence that MNCs are any better or worse than locally owned firms when it comes to adaptation.

Apart from the same general reasons stated by Hood and Young for the lack of any major modification of transferred technology, Lall and Streeten point out that it is on the basis of possessing technology (inappropriate or otherwise) that MNCs have become multinational, and that asking them to modify it is tantamount to asking them to relinquish those assets that underpin their existence. In other words, MNCs have little incentive to adapt their technology. The problem of inappropriate technology is thus merely a part of the wider question of the appropriateness of private ownership.

Thirdly, there are considerable differences between industries in relative capital- and labour-intensity. Textiles, footwear and food processing are some examples of relatively labour-intensive industries. If there is limited scope for technological adaptation in a particular industry this need not be an accurate reflection of the entire host country economy.

Empirical studies have not always produced clear cut results, especially those done on a cross-sectional or inter-industry basis (R. Jenkins, 1990). Support for the notion that only a limited degree of adaptation takes place comes from Reuber (1973, ch.6) who reports that in a study of 78 MNCs drawn from a range of industries and countries, process technology was unchanged in 73 per cent of cases and quality-control systems in 83 per cent. Courtney and Leipziger (1975) found that in six of eleven industries studied, technology differed between MNC affiliates in LDCs and industrialised countries, but not in a systematic manner : in the other five industries there were no significant differences in factor-intensity. Yeoman (1976) found that the amount of adaptation varied significantly between industries, suggesting intrinsic differences in technology. All three of these surveys suggested that MNCs only make adaptations that are cost effective and are usually related to market size. Such conclusions have also been reached in other studies by Morley and Smith (1977) and Strassmann (1968).

On the other hand, not all share this view. In a recent work, Lall (1985) claims that the appropriateness debate has been conducted at a fairly high level of abstraction, taking as given that MNCs transfer unadapted technology from developed to developing countries. He claims (p.74) that:

"At the micro-level, this premise is unfounded. Every new application of a technology entails considerable adaptive effort. The core process may not be signi-

ificantly altered, but changes in scale, inputs, outputs, automation, etc., may constitute between 10-60 per cent of total project costs".

The question still remains, how do MNC input choices compare with those of local firms. After a valuable literature survey of this issue, Caves (1982:269) (see also Marsh *et al*, 1983; R. Jenkins, 1990) reaches the conclusion that:

".. numerous studies have found differences between technologies chosen by local firms and foreign subsidiaries, although only a few have controlled for many of the factors that might explain why the differences occur. When there is little or no control for industry mix, for example, a sufficient explanation for greater capital intensity in MNE plants will be their tendency to populate more capital-intensive industries than native enterprises. Even with reasonably good controls for industry mix (and perhaps other variables), the results are still somewhat divergent".

Several reasons why MNCs might face different factor prices to domestic firms have been suggested. Wells (1973), Mason (1973) and Biersteker (1978), for example, find that MNCs are more capital intensive and pay higher wages, which suggests that unlike local firms MNCs are not influenced exclusively by local factor costs. Pack (1976), on the other hand, argues that MNC managers are more alert to ways of cutting costs by substituting labour for capital than those of locally-owned firms. Other studies have suggested that the oligopolistic nature of MNCs reduces their incentive to adapt technology despite the loss of potential efficiency gains (Yeoman, 1976; White, 1976).

The second major issue in the appropriateness debate relates to the kinds of products transferred by MNCs to developing countries (Helleiner, 1975). In the drive to create global markets, MNCs attempt to introduce their products throughout the developing world, creating particular types of demand patterns, and shaping consumer tastes and preferences that may not accord with LDC development goals. This problem is intrinsic to the pursuit of profit, and without some regulation it is arguably detrimental. Radical theorists such as Radice (1975) argue that this creates technology "dependence" which can only be explained by the theory of imperialism. Lall and Streeten (1977:71) say that the problem is:

".. that the use of scarce resources for the production of goods which are over-differentiated, over-packaged, over-promoted, over-specified and within the reach of only a small elite, or, if bought by the poor, at the expense of more essential products, is not conducive to 'national welfare'."

In other words, the private values represented by market prices do not reflect social values, causing socially inefficient levels and mixes of output to occur. The problem is to decide exactly what constitutes social value or 'national welfare'. There can, for example, be different criteria for evaluating the appropriateness of technology (see Eckhaus, 1977 for an extensive discussion) such as:

- "1. maximization of net output, consumption and of the rate of growth and employment,

2. minimization of regional imbalances, balance of payments deficits and of inequality in income distribution,
3. maximization of economic and political independence and self-reliance, of resource productivity and improvement in the quality of life" (Erdilek, 1982).

Another aspect of the appropriateness issue relates to the environmental and safety dimension of MNC activity. Little evidence exists as to whether MNCs export technologies to LDCs that are environmentally objectionable or unsafe, but a recent study by Pearson (1985) raises serious questions and suggests that host governments should be far more stringent in their regulation of environmental and safety standards. The chief problem with this is that host governments often do not have sufficient information to effectively police MNCs.

These warnings about the "appropriateness" of technology do not mean that there has been no adaptation of products for LDC markets and conditions. Lall (1985:74) argues that:

"Product ranges of TNCs in developing countries are very different from those in advanced countries, and new products are developed specifically for developing countries conditions. There is no evidence that TNCs lag behind local firms in generating 'appropriate' technology in this limited sense."

There are also many cases where transfers of unadapted technology to LDCs have had a markedly beneficial effect on them, including those in agriculture and health care. Lall (1985) takes this argument still further. He argues that the debate over "appropriateness" is now largely academic because

LDC policy makers have perforce opted for modern technology owing to global competition. Therefore,

"Technological progress in the advanced world continues to produce more efficient products and processes, whose deployment would raise productivity in developing as well as developed economies, generally regardless of different factor prices" (p.73).

The third major issue in evaluating the technological impact of MNCs on LDCs relates to the costs of acquiring the technology. As already intimated, the technology 'market' differs in several respects from a normal commodity market. Firstly, the expense of its development and commercialisation mean that initial (fixed) costs are high, causing its ownership to be highly concentrated. Secondly, the intrinsic "publicness" of technology implies that private production of it can only be economic if underpinned by secrecy and enforceable property rights. Thirdly, technology is often only one part of the overall package of attributes that a MNC transfers to a host country, and it is difficult to separate the technology from the other parts of the package. Fourthly, information about the product is asymmetrically distributed between the MNC and the host country which cannot know all there is to know about the technology until it has been purchased - by which time it is too late. Lastly, LDCs have little capacity to substitute technology of their own. They are, to some extent, in the position of having to pay what the market will bear. The technology market is thus far from competitive. It is characterised by bilateral monopoly, where

the "equilibrium price" is not set by market forces but by bargaining power, a situation where LDCs are at a grave disadvantage.

An assessment of the cost of technology presupposes that it can be measured against alternative ways of acquiring the same technology. The major alternatives are:

- "1. Initiative where the LDCs construct plants chiefly imitating the technology in the DCs.
2. Contractual where a LDC obtains capital and know-how usually through licensing.
3. Joint venture where foreign firms collaborate with the home industries and could agree with minority holdings in assets.
4. Subsidiaries where the foreign companies set up wholly- or partly-owned subsidiaries with the host country exercising little or some influence.
5. Turn-key projects where the whole plant is transferred along with all the different stages of production to the point of final consumption through the marketing and distribution of the final products" (Ghatak, 1986:150).

The choice of form is strongly influenced by the policy of the host government and the market to be serviced, but it also depends on the type of technology, the market power and corporate policy of the MNC, and the need of the LDC to acquire sophisticated technology. The cost will depend greatly on the form of transfer chosen and of the bargaining power of the parties. The eventual price will lie between the low marginal cost of transferring the technology (but see Teece, 1976) and a higher price that would drive the buyer to

other sources. Within these two limits there is no price which *a priori* could be considered more or less appropriate.

The alleged problems associated with the cost of transferred technology are, firstly, that the royalties and licence fees charged by MNCs are too high; secondly, that tie-in clauses in technology contracts require the licensee to purchase capital equipment and intermediate parts from the parent company, when such items could have been obtained more cheaply elsewhere; and thirdly, that technology contracts often prohibit the export of commodities manufactured with that technology (Hood and Young, 1979:201; R. Jenkins, 1989). However, these criticisms cannot be ascribed purely to MNC avarice, and are more a reflection of the public-good peculiarities of the technology market, in particular the patent system (Johnson, 1972; Williamson and Milner, 1991).

Patenting is a common procedure for transferring technology and often includes restrictive clauses. It is alleged that patents are taken out merely to block competition which has the effect of preventing cheaper imports and more efficient local production. For example, an UNCTAD (1972) study found that in Peru only one per cent of the total number of patents granted were exploited between 1964-79. But non-use of patents *per se* does not automatically imply abuse of the system. Non-use may simply reflect non-viability (Penrose, 1973). In a study of 250 contracts for technology transfer in Latin America, Viatsos (1975) found that 81 per cent of

them prohibited exports totally and 5 per cent incorporated other export restrictions. Of indigenously owned firms, 92 per cent of the contracts prohibited the exportation of commodities produced with foreign technology. Two-thirds of the contracts for which information was available included tie-in clauses, or similar contractual restrictions. It would appear, then, that the transfer of technology under such circumstances seriously affects the net benefits available to host countries. On the other hand, Lall and Streeten (1977:69) point out that with the growing stock of unpatented (and unpatentable) knowledge, growing global markets and increasing importance of marketing *vis a vis* technology in securing oligopolistic market shares, the importance of patents in a number of leading industries is declining sharply. This point is supported by Evans' (1986) study of the transformation of the Brazilian computer industry.

In a useful case study of the Turkish pharmaceutical industry Kirim (1985) has investigated the role that patents play in LDC economic development. Kirim presents evidence that there is no simple and straightforward relationship between patents on the one hand and technological dependence and retardation of industrialisation on the other. The choice of pharmaceuticals is also interesting in view of the industry's reputation for transfer pricing (see, amongst others, Vaitzos, 1974; Lall, 1980; UNCTAD, 1975; Katz, 1973; O'Brien, 1974). Kirim finds that contrary to the expectations of advocates of the patent system, its absence since 1961 has not adversely influenced the flow of FDI into Turkey, but neither has it led

to the development of domestic technology. It has resulted in the growth of locally-owned drug firms but they are no more competitive than the MNCs. No evidence was found that non-use of patents *ipso facto* implies a loss of competitive efficiency.

It would be wrong to see the technology aspects of MNC operations as separate or separable from the wider problem of public good provision. The transfer of technology, its appropriateness and cost are all bound up in legitimate market processes. The question ultimately is to what extent the market needs regulation and supervision in order to bring private and social costs closer into line, assuming that some measure of social welfare costs can be agreed on.

Some idea of the role of technology in South Africa is provided by the Reynders Commission (1972) which drew a 10 per cent sample from a register of licensing and know-how agreements kept by the Department of Industries since the late 1960s. The sample revealed that 93 per cent of such agreements pertained to the manufacturing sector and 27 per cent of all agreements in the sample related to the machinery and equipment sector (8 per cent electrical and 19 per cent non-electrical). The US was the major supplier of technology and accounted for 34 per cent of agreements while the UK accounted for 26 per cent and West Germany 13 per cent. A feature of the agreements which was of great interest to the Commission was the restriction on exports which they contained. All the agreements stipulated

that licensees could not export outside Africa, although most of them acknowledged that Africa and especially Southern Africa constituted South Africa's "natural market". According to the Commission:

"none of the agreements provided for export outside African territories ... in 30 per cent of the cases the sales territory was restricted to the Republic; in 5 per cent to the Republic and Namibia; in 56 per cent to the Republic, Botswana, Lesotho, Swaziland, Rhodesia, Angola and Mozambique; in 4 per cent to the Republic and to all countries south of the Sahara, and in 5 per cent to the whole of Africa" (1972:171).

Like the Reynders Commission in 1972, the author's survey found that the role of technology is often circumscribed by various constraints written into licensing and know-how agreements. These constraints reduce the net social benefits to be derived from technological transfer because they prohibit certain types of remunerative commercial activity, like exports to certain markets, etc. This is true of both locally-controlled and foreign-controlled licensees. Even when foreign-ownership is 100 per cent, these restrictions are often enforced. Of the 21 locally-controlled firms (78 percent) who were licensees, 14 or just over half, said that they were subject to export restrictions (in the main to South and Southern Africa) and/or sourcing restrictions, where they had to purchase inputs from specified suppliers abroad.

On the whole, replies from foreign-controlled firms were more complex, owing to differences in the degree of foreign-ownership. 5 firms, all 100 per cent foreign-owned, reported

free and unrestricted access to parent company technology and R and D, with no restrictions on the use to which they could put this knowledge. The remaining firms all said that they were subject to some form of export restriction or tie-in clause, in the same way as locally-controlled firms. A greater number of foreign than local respondents were not prepared to disclose the nature of their technological links with overseas companies.

The fact that 78 per cent of locally-controlled firms were foreign licensees is interesting, in view of the debate over FDI penetration. It suggests that when technological dependence is included, estimates of penetration levels will be much greater, especially in those sectors like chemicals, rubber and plastics, and fabricated metals, machinery and equipment, where licensees are concentrated.

The issue of technological dependence is central to an understanding of the constraints on economic development in LDCs. The significance of FDI lies in its role as a provider of the necessary technology to enable host-country production of capital goods. Only in this way can import dependence be reduced (see Michaely, 1974; Amsden, 1989).

The Reynders Commission did not explicitly make a finding on South Africa's dependence on foreign technology, but a survey by the University of Natal in 1973 (Nattrass and Brown, 1977) revealed a heavy dependence on foreign technology in the manufacturing sector (see Table 3.6). 74 per cent of the

sample claimed that 90 per cent or more of the technology being used was of foreign origin, and 62 per cent of respondents used techniques that embodied 100 per cent foreign technology. Only 10 per cent of the sample used processes embodying less than 50 per cent foreign technology. The study, however, failed to show any significant differences in the degree to which foreign- and locally-controlled firms were dependent on foreign technology.

TABLE 3.6

THE DEGREE OF UTILISATION OF FOREIGN TECHNOLOGY
AMONGST SOUTH AFRICAN MANUFACTURING FIRMS : 1973

Percentage of Foreign Technology Used	Responding Firms			
	Number who used	Cumulative Frequency	Percentage who used	Cumulative Frequency
Exclusively Foreign Technology				
= 100 per cent	169	169	62	62
Over 90 " "	32	201	11	74
Over 80 " "	23	224	8	79
Over 75 " "	7	231	2	81
Over 50 " "	25	256	9	90
Over 25 " "	8	264	3	93
Over 0 " "	7	271	3	96
Exclusively Local = 0 per cent	11	11	4	4

Source: Nattrass and Brown, 1977.

A survey by Black in 1983 revealed that although dependence on foreign technology was declining, it was still high in the manufacturing sector, with no less than 84 per cent of new

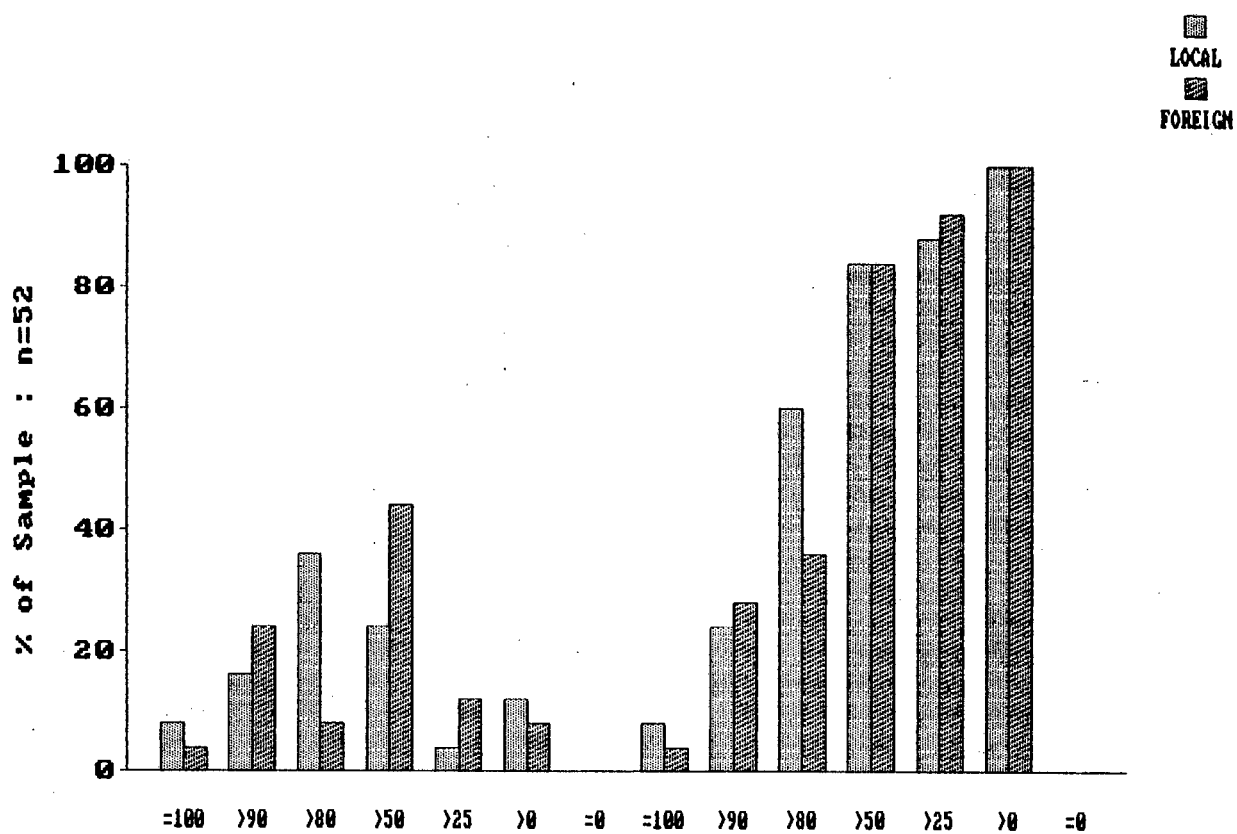
embodied technology being imported (Black, 1985:155). This continued dependence is a primary result of the retardation of the local capital goods industry noted in Chapter 2.

In order to ascertain the degree of reliance on foreign technology of both locally- and foreign-controlled firms, the author's survey used the proportion of plant and equipment imported as an indicator, rather than ask respondents how they felt about the issue, which was the approach used by the University of Natal survey. Although our approach thus covers only embodied technology, other parts of the survey relate to disembodied technology.

From Figure 3.2 it can be seen that only 8 per cent of local and 4 per cent of foreign respondents were using 100 per cent imported plant and equipment; 24 and 28 per cent of local and foreign respondents respectively were using more than 90 per cent imported plant and equipment; 84 per cent of both local and foreign respondents were using more than 50 per cent imported plant and equipment; and so on. Whilst this sample illustrates very clearly the substantial extent to which all manufacturing firms rely on imports of plant and equipment, this reliance is significantly less than that found by the Natal survey in 1973, even allowing for the fact that firms may not have been asked for quite the same information. This serves to confirm Black's 1983 finding that dependence on foreign technology, though high, is declining.

FIGURE 3.2

PERCENTAGE OF PLANT AND MACHINERY IMPORTED
BY OWNERSHIP



Source: Author's survey.

It is often hypothesized (Reuber, 1973; Scerri, 1988) that MNCs make greater use of foreign technology than indigenous firms but there is no evidence of this in our survey as Figure 3.2 shows. If any bias does exist towards importing plant and equipment, locally-owned firms are the guilty parties. Furthermore, when asked whether they make any adaptations or modifications to imported technology in order to suit local conditions, 62 per cent of foreign and only 41 per cent of local respondents reported that they did.

Amongst those that did make changes, nearly a half of the smaller number of local respondents ascribed this to differences in firm size - the remainder citing reasons as diverse as different factory configurations, road conditions and climate. Surprisingly, only one local respondent changed because of differences in factor prices. A similar pattern is found among those foreign respondents who made changes to imported technology. Just under half gave firm size as the key variable. Most of the others stated that local specifications or customer requirements were important. Very few reported that factor prices played any role.

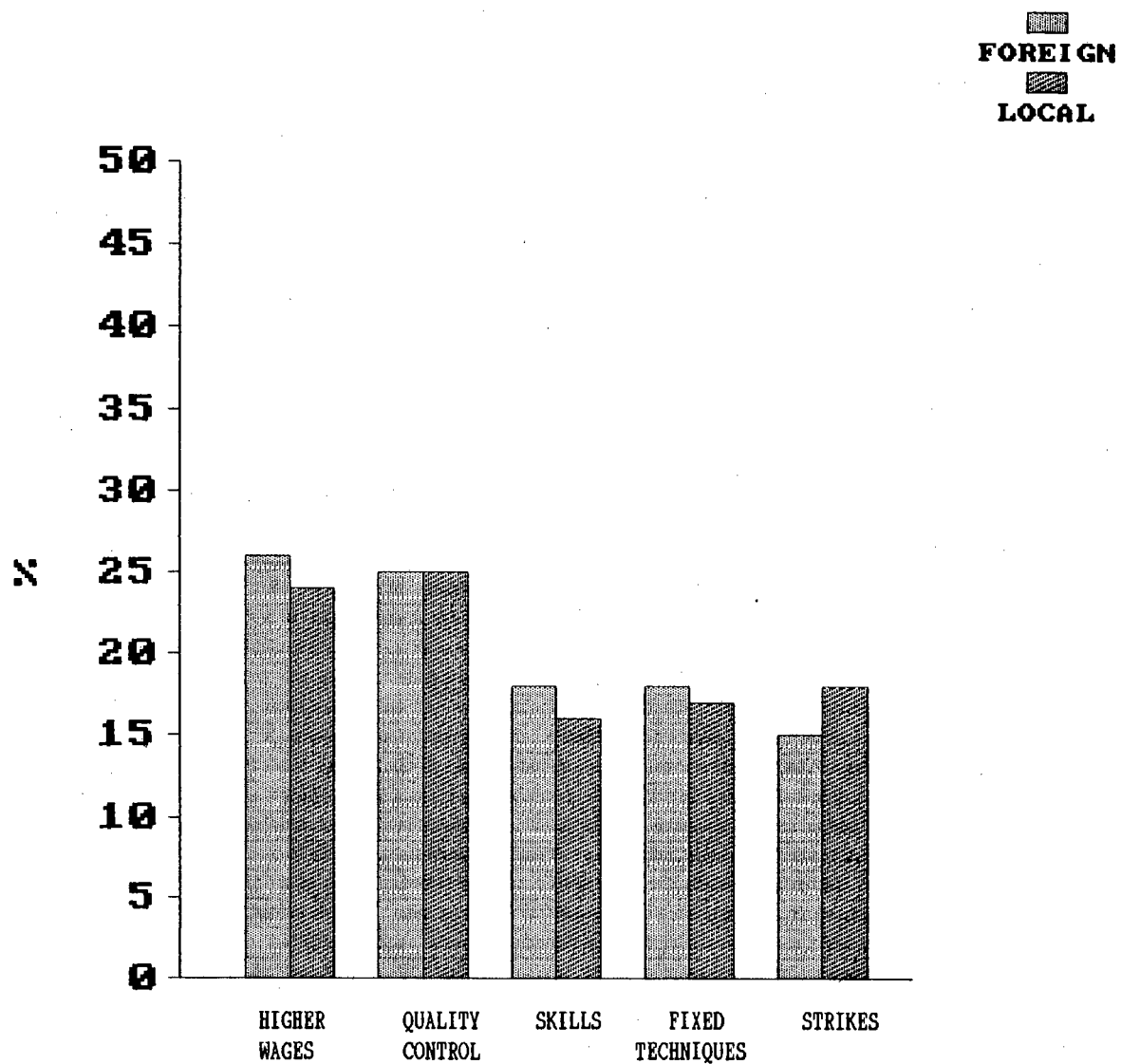
These results suggest that firm size is the most important determinant of choice of production technique. On the other hand, 90 per cent of foreign and 70 per cent of local respondents are using more capital per worker than in the past. A breakdown of the reasons for this increasing capital intensity reveals that higher labour costs and the need for more stringent quality control were the most important factors

responsible for this trend. The shortage of skilled manpower, inflexible production techniques and labour unrest were less important factors. There was no significant difference between foreign and local respondents (see Figure 3.3).

Conventional theory often ascribes the observed capital-deepening in the 1970s and 1980s to artificially low interest rates and overvalued exchange rates. However, our respondents did not identify these factors, perhaps because of their macroeconomic nature, although they did say that higher labour costs were significant, which is the other side of the coin. It is also important to note that the effects of low interest rates and overvalued exchange rates was largely offset by the deterioration in the import price index during the 1970s (see Table 3.7), especially that component relating to machinery for which the import price elasticity is very low. Furthermore, the devaluation of the Rand during the 1980s raised the cost of imported capital goods still further (Black, 1990) thus restraining more rapid capital-deepening.

FIGURE 3.3

FACTORS RESPONSIBLE FOR INCREASING CAPITAL INTENSITY
ACCORDING TO OWNERSHIP



Source: Author's survey

TABLE 3.7

IMPORT PRICE INDEX (1964 = 100)

	All Imports	Machinery
1966	109	118
1968	103	111
1970	109	122
1972	130	156
1974	168	184
1976	280	304
1978	362	445
1980	520	541

Source: Gelb, 1991.

Often there is no longer the option to switch between capital intensive and labour intensive techniques because of the imperatives of international competitiveness, at least for as long as the domestic economy is fully integrated with the world economy. Because most modern technology has been developed in a capital-intensive, high-labour-cost environment, there are often no viable labour-intensive alternatives (Stoneman, 1988).

The Reynders Commission also provided some indication of research and development (R and D) activities in South Africa. An indication of the relative insignificance of South African-generated technology is given by figures for the export of such technology. "Overseas marketing of South African technological services under royalty, licensing, copyright and patent agreements is still extremely limited and earnings from this source amounted to only R1 million during the period 1966 to 1970" (p.172). According to Fransman (1980:31), in 1968/9 27

per cent of total R and D expenditure was undertaken by the private sector, compared with 60 per cent in the U.K. (in 1967/8), and 69 per cent in the U.S. Of this expenditure, 52 per cent went on mining, 42 per cent on manufacturing, 3 per cent on services, and 3 per cent on agriculture.

This picture of the pattern of R and D expenditure is supplemented by Scerri (1988:115) who reports that in 1981 the manufacturing sector was the largest absorber of R and D expenditure - 37 per cent of all R and D expenditure in the natural sciences. The importance of the public sector as a source of R and D is underlined by the data in Table 3.8, which lists the relative contribution of different R and D performers to total R and D expenditure within specific industries. This data can be compared with that in Table 3.9, which ranks R and D intensity across industries, as measured by the ratio of R and D expenditure to sales revenue. As can be seen, the value placed on such activity in the private sector seems to be relatively low. In particular, the low ratios reported for industries usually associated with a high technology component, namely rubber products, plastic products, fabricated metal products, chemicals (other than industrial) and motor vehicles, is a notable feature. Scerri (1988:114) suggests two factors which may account for this phenomenon; the presence of large economies of scale in the required R and D process; and a high incidence of foreign ownership and control at enterprise level. Both factors, he argues, would induce a heavy dependence on imported technology.

TABLE 3.8

PERCENTAGE SHARES IN TOTAL APPLIED R AND D EXPENDITURE
BY PERFORMER (1983)

Industry	Performer			
	Government and public corp.	Private business	Independent research labs.	Tertiary education inst.
Machinery, except electrical	98	1	-	1
Textiles	87	1	-	12
Basic iron and steel industries	87	11	-	2
Non-ferrous metal basic industries	85	1	7	7
Electrical machinery	85	13	-	2
Transport equipment, except motor vehicles and parts	72	28	-	-
Industrial chemicals	69	29	-	2
Wood and wood products	65	23	1	11
Fabricated metal products, except machinery	45	54	-	1
Beverages and tobacco	43	22	34	1
Rubber products	40	60	-	-
Non-metallic mineral products	32	67	-	1
Food	30	49	17	4
Chemical products, except industrial chemicals	20	68	-	12
Paper and paper products	18	78	-	4
Motor vehicles and parts	12	87	-	1
Plastic products n.e.c.	7	84	-	9
Printing, publishing and allied industries	-	16	84	-
Leather and leather products	-	1	97	2
Footwear	-	-	100	-

Source: Scerri, 1988.

TABLE 3.9

APPLIED R AND D EXPENDITURE AS A
PERCENTAGE OF SALES

Industry	1966	1983
Electrical machinery	0.20	2.09
Machinery, except electrical	0.05	1.35
Industrial chemicals	2.49	1.16
Transport equipment, except motor vehicles and parts	0.30	0.45
Non-ferrous metal basic industries	0.14	0.40
Basic iron and steel industries	0.24	0.27
Leather and leather products	0.17	0.23
Non-metallic mineral products	0.40	0.21
Textiles	0.10	0.15
Wood and wood products	0.21	0.15
Rubber products	n.a.	0.11
Plastic products n.e.c.	n.a.	0.11
Fabricated metal products, except machinery	0.08	0.10
Chemical products, except industrial chemicals	0.11	0.10
Beverages and tobacco	0.03	0.09
Food	0.06	0.09
Paper and paper products	0.09	0.08
Motor vehicles and parts	0.02	0.06
Footwear	0.05	0.03
Printing, publishing and allied industries	0.01	0.01

Source: Scerri, 1988.

The hypothesis that MNCs are more likely to have access to the results of foreign R and D expenditure and consequently are less likely to undertake such expenditure in host countries than indigenous firms (the so-called branch plant hypothesis), is not supported in the case of South Africa by the evidence from the 1973 University of Natal survey. This survey confirmed that a very small proportion of resident manufacturers engage in R and D activity, but that there was no significant difference in R and D expenditure between foreign and local firms. Table 3.10 shows that less than one third of both local- and foreign-controlled firms undertook R and D, and 90 per cent or more felt that it was cheaper to import such information than to develop it locally. Though, as McGrath and Jenkins (1985:40) and Kahn (1991a) point out, foreign firms may be more important than these results indicate, as they may supply capital goods embodying foreign technology to both locally- and foreign-controlled firms.

TABLE 3.10

RESEARCH AND DEVELOPMENT EXPENDITURE BY OWNERSHIP OF FIRM

Type of Ownership	Firms investing in 'Research and Development'		Firms who believed it cheaper to import 'Research & Development'	
	Number	Percentage of Respondents	Number	Percentage of Respondents
Foreign	23	30	71	93
South African	54	26	178	90
	77	27	249	91

Source: Natrass and Brown, 1977.

Evidence from our survey (see Table 3.11) is that 58 per cent of foreign and 74 per cent of local respondents carried out R and D activities in 1991. This level of activity is considerably more than observed before, and confirms the view that the level of technological dependence is dropping. The difference between the number of local and foreign respondents doing R and D suggests that ownership is a relevant factor in the source of R and D, in contrast with the Natal survey.

TABLE 3.11

RESEARCH AND DEVELOPMENT EXPENDITURE BY OWNERSHIP
AND SECTOR, 1991

	R and D Expenditure as a % of Total Expenditure							
	< 1%		1% < > 3%		3% < > 6%		= 10%	
	F %	L %	F %	L %	F %	L %	F %	L %
Textiles	7	5	-	-	-	-	-	-
Chemicals	7	-	33	15	-	10	-	-
Machinery	20	15	20	20	7	5	-	10
Other	7	10	-	5	-	5	-	-
Total	41	30	53	40	7	20	-	10

$F_n = 15 = 58\%$ of sample

$L_n = 20 = 74\%$ of sample

Figures may not add up to 100% because of rounding

Source: author's survey.

This difference is emphasized by the breakdown of R and D expenditure as a percentage of total expenditure. The resulting distribution shows that on average foreign-controlled

firms spend considerably less on R and D than locally-controlled firms, with 94 per cent of foreign-controlled firms and 70 per cent of locally-controlled firms spending 3 per cent or less of total expenditure on R and D. Only one foreign-controlled firm reported R and D expenditure of greater than 3 per cent, in contrast to 6 locally-controlled ones that did, including 2 which spent as much as 10 per cent.

The sample of firms that did R and D is too small to infer much about industry-specific influences on R and D expenditure, other than to note that this expenditure is higher in chemicals and machinery than in, say, textiles. This finding confirms the ranking of R and D expenditure as a percentage of sales given in Table 3.9.

Meth (1991) has put forward an intriguing argument about South Africa's capital goods output and associated technological dependence. Dividing the output of capital goods into "core" and "peripheral" machines, he argues that "a country which imports more peripheral capital goods is less 'dependent' on foreign technology than one which imports more core capital goods - even though the ratio of total capital imports to GDP might be the same in both countries" (p.295). Since only some 20 to 30 per cent of total capital goods imports in South Africa are core capital goods, the remainder being essentially service, i.e. peripheral capital goods, he argues that "manufacturing 'dependence' on foreign technology is a lot less severe than commonly believed" (p.295). He maintains that because all but the most self-sufficient industrialised

countries have to import peripheral capital goods, it is wrong to include them in any meaningful definition of dependence. Only core machines matter, and in this regard South Africa does rather less badly than conventional definitions of capital goods dependence suggest.

In brief, the technological impact of FDI on South African development can be evaluated in terms of the transfer, appropriateness and cost of foreign technology. On the first issue, evidence suggests that the transfer of technology is often circumscribed by various constraints written into licensing and know-how agreements, and that a high proportion of local firms are foreign licensees, which suggests that the benefits of foreign technology are constrained and that the level of FDI penetration is greater than suggested *prima facie*. FDI is most important in its role as a provider of technology, and every effort should be made to ease conditionality restrictions, whatever form FDI takes.

On the question of appropriateness, the current prevailing view (Amsden, 1985) is that the criterion here is international competitiveness rather than domestic resource endowments. The "right" technology is that which minimizes costs (for South Africa see Meth (1991)). However, our survey found no support for the view that MNCs make greater use of foreign technology than indigenous firms, and significantly it found that MNCs are more likely to adapt imported technology to suit local conditions. Neither was there any evidence to support the

hypothesis that MNCs are less likely to engage in R and D. But what our study did confirm was the high, albeit declining, dependence of both foreign and local firms on foreign technology.

This dependence is directly related to the third issue in the evaluation of the role of technology, that of cost. Given the underdevelopment of the South African capital goods industry, resident firms are given little option but to import their capital goods requirements. This makes comparisons of alternative ways of acquiring technology problematic but it is interesting to note that our survey indicated a greater willingness among local firms to undertake R and D than has been found heretofore. Clearly there exists a need to reduce imports of capital and intermediate goods, but this cannot be done until local substitutes are available at equivalent cost. The policy implications of this are examined in Chapter 5 below but cost minimizing forms of technology transfer (which is necessary for the expansion of the capital goods sector) need to be thoroughly examined. Amongst such forms are licensing contracts and joint ventures (see Oman, 1989) which have both been operated successfully in South Africa in the past. In view of the continuing perception that South Africa is a high risk country, capital inflows associated with FDI are likely to remain small. In order to acquire foreign technology, greater emphasis needs to be placed on licensing and joint ventures. As we pointed out above in section 2.1, FDI has historically not been a large proportion of gross domestic

fixed investment: The critical contribution of FDI has rather been the provision of technology.

3. EMPLOYMENT AND LABOUR RELATIONS

McGrath and Jenkins (1985) have provided a succinct overview of the importance of FDI in generating new employment opportunities. They write (p.41):

"Not only do new inflows establish new enterprises, but they have indirect effects on employment. If the economic activities of foreign-controlled companies add either to total income in a country, or to the host government's revenue, or to the foreign exchange reserves, they will stimulate employment. Local competitors are likely to increase their employment if the presence of the foreign affiliate induces them to become more efficient and so grow faster, or if they are shown the way to a more efficient allocation of work and resources by sub-contracting out to a greater extent. Employment is also likely to be increased if the foreign-controlled operations have considerable linkages into the domestic economy".

The issue of linkages is dealt with in the next section. This section examines the employment patterns and practices of foreign- and locally-controlled firms in South Africa.

In Table 2.16 it was shown that a high proportion of total manufacturing employment is subject to foreign control, although this declined from 27,7 per cent in 1978 to 21,3 per cent in 1990. Working from capital stock figures, and assuming the same capital : output ratio for both locally- and foreign-controlled firms in each sector, McGrath and Jenkins

(1985:42) estimate that depending on the definition of control used, the proportion of employment subject to foreign control, for the economy as a whole, varies between 15 and 25 per cent. These estimates understate the employment impact of FDI because they do not include indirect employment generated via linkages with local industry.

Whilst it is not feasible to arrive at an accurate figure for indirect employment, some indication of this is revealed in our survey. Unfortunately only 10 foreign respondents were able to give estimates for employment linkages, so the sample is not representative. Those firms that did respond were the large ones, both in terms of their employment size and in terms of their indirect employment impact. In particular, firms in the motor industry reported strong employment spin-offs, which is not surprising since one-eighth of total employment and output is said to originate in this industry (Black, 1991a). For example, two such firms reported that more than 250 local suppliers, distributors and competitors had come into being as a result of their activities, representing some 15 000 plus jobs. The fact that smaller firms did not respond to questions on indirect employment does not imply that their linkages are weak. Small firms do not have the infrastructure or incentive to gather such information. On balance, then, FDI makes a significant contribution to employment in South Africa, especially if indirect employment is taken into account.

A particular focus of attention in the South African situation has been the wage and employment practices of foreign-controlled firms. Prior to the 1970s these practices did not seem to be very different from those of locally-controlled firms. There is also some debate as to whether any change in this pattern has occurred since then (Salmon, 1977; Holland, 1989). In 1973 a British parliamentary inquiry into these practices revealed little difference in respect of racial segmentation of the occupational ladder, and the Natal survey of the same year found no significant difference in attitudes towards trade unions and the works committee system (Nattrass and Brown, 1977). Part of the reason for this is undoubtedly to be found in the legal and social constraints on all firms operating in South Africa at the time, e.g. statutory job reservation, closed shop agreements, government opposition to certain trade unions, etc. Added to this is the fact that a large part of management of foreign-controlled firms is made up of local recruits, who most probably have the same management style as those in locally-controlled firms. Our survey revealed that in 1990 on average 88 per cent of local senior management positions in foreign-controlled firms were filled by local personnel.

As a result of anti-Apartheid pressure, the employment practices of foreign-controlled firms came under intense scrutiny in the 1970s and 1980s, resulting in a number of "codes" of practice being adopted by many, but not all, foreign-controlled firms. The best known of these are the

European Economic Community Code of Conduct and the U.S. Sullivan Code which later became known as the Statement of Principles for South Africa. These codes vary in their minimum requirements, but usually specify the recognition of the rights of workers to have trade union representation, the adoption of wage policies to achieve certain minimum levels, the desegregation of factories wherever possible, the implementation of equal pay for equal work, the development of training programmes for black workers, and the improvement of fringe benefits and employees' living conditions (so-called social responsibility programmes) (McGrath and Jenkins, 1985). At its high point of anti-Apartheid pressure in 1987 the campaign to monitor the employment practices of foreign-controlled firms included not only the E.E.C. and Sullivan Codes, but also ones from Australia, Japan and Canada, apart from a U.S. State Department Code for non-Sullivan signatories (Paul, 1989:463). Although these were not always mandatory, most firms followed them because of the threat of hostile public opinion. As the country moves towards the New South Africa, this pressure is waning rapidly.

In an effort to gain some clarity on the impact of the codes, and to identify ownership differences in attitudes towards trade unions and wage determination, our survey asked respondents several questions on their employment and labour relations practices. The size of the sample precludes any analysis at the sectoral or firm size level, but as Table 3.12 shows, marginally more foreign-controlled firms reported no production losses at all owing to industrial action in the last

5 years. On the other hand, a larger proportion of foreign-controlled firms also reported heavy (more than 10 per cent, and in some cases as much as 25 per cent) losses of production.

On the strength of this bimodal disparity, foreign-controlled firms in general cannot be argued to have been subject to any more pressure from trade unions than local firms, though in specific cases, especially in the motor industry, this has been the case, perhaps because of differences in management attitudes, both locally and abroad (Bell, 1990). That strikes have become an entrenched feature of the industrial landscape is shown by the fact that more than half of all firms have lost some production for this reason in the last 5 years.

5 locally-controlled and 6 foreign-controlled firms said that they had no recognition agreements with trade unions. According to McGrath and Jenkins (1985:44) "an unforeseen spin off of the recognition of Black trade unions by MNCs is that trade unions abroad, acting in sympathy with South African workers, can exercise substantial pressures on the parent company abroad, for worker rights in South Africa". This may account for differences in management style in specific cases (Adler, 1990).

TABLE 3.12

PRODUCTION LOSSES AND INDUSTRIAL ACTION BY
OWNERSHIP, 1985-1990

% of Production Lost	Foreign (F)	Local (L)	
= 0	40	30	$F_n = 25$
< 1	12	21	$L_n = 27$
1 < > 5	20	37	
5 < > 10	12	8	
10 <	16	4	

Source: Author's survey

The effect of the codes on real wages is impossible to determine for the economy as a whole. Venter (1989:165) has made crude estimates of the average increase in wages derived by black, "coloured" and Asian employees of U.S. MNCs who were signatories to the Statement of Principles for South Africa (SPSA) (also known as the Signatory Association), previously the Sullivan Code. According to him, the average wage increased in nominal terms from R342.8 in 1984 to R2 317.3 in 1987, i.e. overall by R1 059.5 per year per worker, while expenditure on community services increased from R180.6 to R1 257.8 per year per worker. These are significant amounts but they are clearly limited to a small section of the workforce.

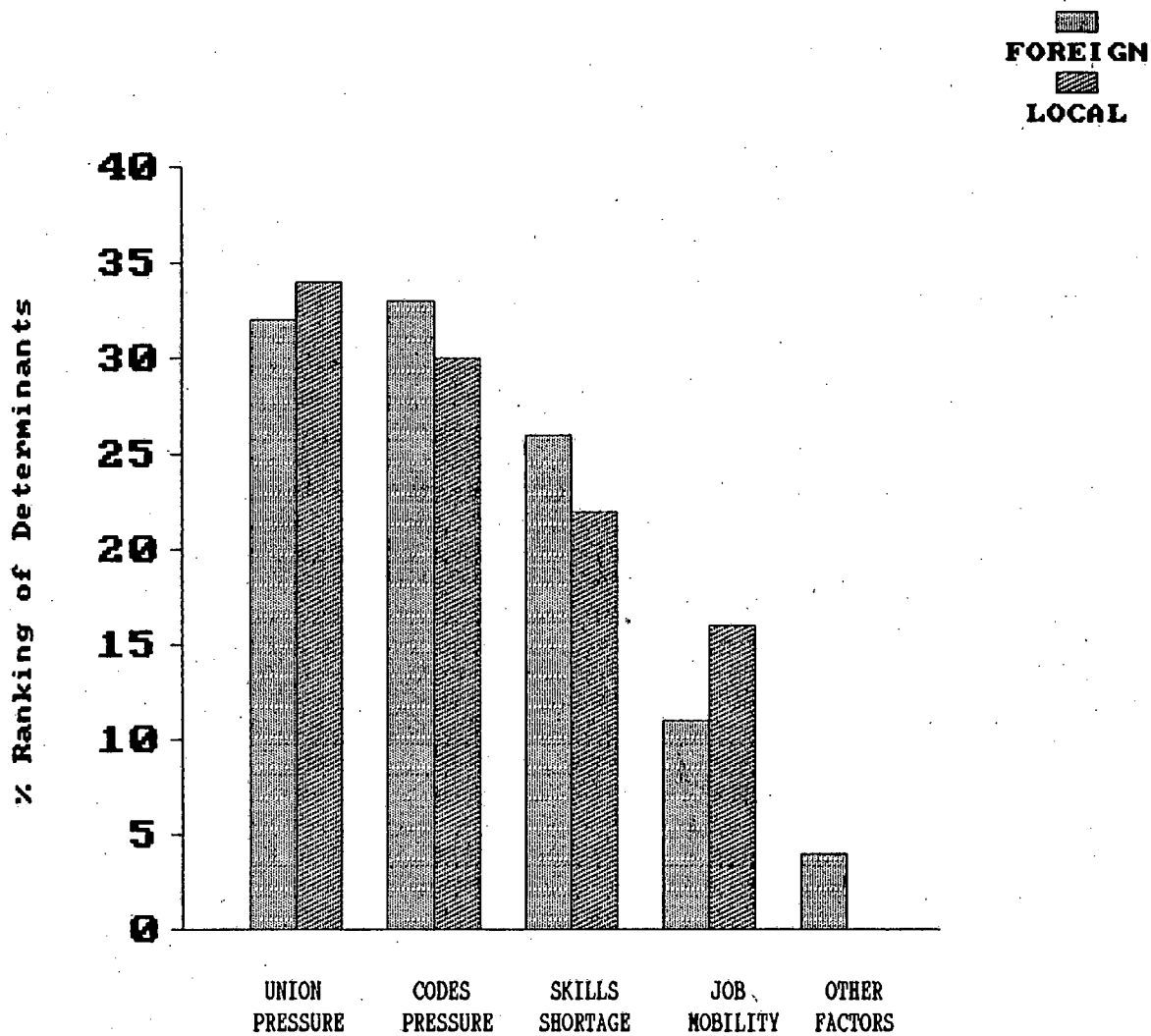
In our survey firms were asked what proportion of their total budget was allocated to social responsibility programmes, such as educational and housing projects. The average percentage allocated by MNCs was 2.6 per cent, with 5 (20 per cent) of

them reporting nil expenditure and 3 (12 per cent) reporting as much as 10 per cent or more. The average percentage allocated by indigenous firms was 1,5 per cent, with 4 (20 per cent) reporting nil expenditure, and 7 (25 per cent) refusing to divulge this information. These results suggest that foreign-controlled firms spend more on social responsibility programmes than their local counterparts.

This climate of awareness and expectation has occurred at the same time as the rise in black real wages in the non-agricultural sectors (excluding domestic service) (Hofmeyr, 1990). The codes of conduct have contributed to the various upward pressures on black real wages noted during the 1970s and 1980s (Knight and McGrath, 1987). Firms were asked to rank the importance of trade union pressure, codes of conduct, shortages of skilled labour and the eradication of job reservation, in wage determination over the last 10 years. The results of this are shown in Figure 3.4. All firms agreed that trade union pressure and codes of conduct pressure were the most important factors, followed by the shortage of skills and the eradication of job reservation. The impact of the codes was marginally stronger than trade union pressure in the case of MNCs, but what is most surprising is that locally-controlled firms were pressurised by the codes of conduct, which did not directly apply to them. This suggests that as a result of demonstration effects (Holland, 1989), the overall benefits of the codes are much greater than those postulated by Venter.

FIGURE 3.4

IMPORTANCE OF VARIOUS WAGE DETERMINANTS
ACCORDING TO OWNERSHIP, 1980-90



Source: Author's survey

This finding is consistent with the observations of Paul (1989:468) that those companies which withdrew from the Signatory Association through change of ownership have generally maintained their corporate social responsibility programmes. Disinvestment has not therefore put a stop to social activism and many locally-controlled firms now also operate their own programmes of social responsibility based on either their own criteria or those, for example, published by the Urban Foundation or the Cape Town City Council (Salmon, 1977). Although MNCs all seem to agree that the Codes are an inefficient and ineffective way of pressurising the government (di Norcia, 1989), they do seem to have had an impact on industrial practices and wage determination.

However, in view of all the other powerful forces acting on employment and labour relations, like increasing unemployment, economic growth, capital deepening, trade unionism and the eradication of Apartheid in the labour market, it is impossible to assess the direct contribution of the codes to increases in black real wages. Broadly speaking, the increase in black real wages in the post-war period has, according to Hofmeyr (1990), been caused by demand factors arising from economic growth and by the release of pent-up labour market pressures on the supply side, following the implementation of the recommendations of the Wiehahn Commission (1979) in the 1980s.

As far as employment is concerned, Knight (1977) has estimated elasticities of substitution of black labour for other factors,

including non-black labour, in the manufacturing and mining industries. According to his results the elasticity of substitution is positive but less than unity, which indicates that black employment will fall by a smaller proportion than black wages rise. At the same time, an increase in the amount of capital (including foreign capital) will reduce employment but by less than the increase in capital.

4. LINKAGES INTO THE LOCAL ECONOMY

In his review of MNCs, domestic enterprises and industrial structure in host developing countries, Lall (1978) identifies two broad sets of relationships, both of which are important for understanding the impact of FDI on host economies and for the formulation of policy. As he puts it (p.217):

"The 'direct' relationships that TNCs strike up with local suppliers or purchasers (backward and forward 'linkages' in the Hirschman (1958) sense) can constitute powerful mechanisms for stimulating (or retarding) economic, and particularly industrial, growth in LDCs. The 'indirect' effects that the entry and operations of TNCs may have on local industrial structure, conduct and performance may be equally important : TNCs may change the nature and evolution of concentration; they may affect the profitability and growth of indigenous firms; they may alter financing, marketing, technological, or managerial practices of the sectors that they enter; they may, by predatory conduct, drive domestic firms out of business; and so on".

Defined in this way, the concept of linkages is clearly different from a normal transaction in a competitive market because it includes externalities created for domestic industry

by the entry of TNC investment. This raises the serious problem of operationality, i.e. in practice it is simply not practicable to measure linkages on such a broad definition. Furthermore, the concept of linkages suffers acutely from the problem of "as compared with what?" (Caves, 1982:272). However, bearing these constraints in mind, and focusing mainly on the "direct" relationships, the concept of linkages is a useful tool for examining the extent to which foreign affiliates are integrated into the local economy.

Colman and Nixon (1986:343) write that:

"It is usually argued that TNCs will establish few linkages with domestic firms. The highly centralised global structure of the TNC and the integrated nature of its global operations, its use of capital-intensive technologies and the nature of the final product, taken together lead many economists to argue that TNCs create a virtual 'enclave' in the host economy, integrating the 'modern', TNC-dominated sectors of the host economy with the international economy".

Sunkel (1973), the radical Chilean economist, characterises this process as one of transnational integration and national disintegration. This view is most characteristic of MNCs operating in extractive industries and in export-oriented assembly activities such as those found in export processing zones.

Backward linkages, created when new supplier industries provide inputs for foreign subsidiaries, and forward linkages, created when firms are established which use the MNC's product as an input, are potentially just as important to development as the

provision of capital and technology. It is generally believed on theoretical grounds (Hirshman, 1958; Lall, 1978; Caves, 1982) that backward linkages are more significant than forward linkages, and most empirical studies of linkages have looked at backward linkages only, distinguishing between import-substituting and export-oriented MNC investment.

Amongst the ways of measuring the extent of backward linkages is a method using the concept of retained value (Mikesell, 1970; Murray, 1975; Thoburn, 1977) which expresses retained value added as a percentage of the total value of exports (R. Jenkins, 1987). Where this percentage is very low then the industry is regarded as an enclave. However, several authors have argued that there is a general tendency for retained value to increase over time, rendering the classical picture of a foreign-dominated enclave inaccurate, as subsidiaries mature and their purchases of local inputs increase (Safarian, 1966; McAleese and McDonald, 1978). The problem with this concept is that it is usually not operational because the information required is unavailable in a usable form.

Broadly speaking, a review of the literature reveals a consensus that although "the vast bulk of FDI in LDCs has gone into protected import-substituting activities" (Lall, 1978:218), this type of FDI has been inefficient in creating beneficial linkages, mainly owing to the economic limitations usually associated with small or industrially backward economies. Balasubramanyam (1984) argues that where export-

oriented MNCs are exposed to the keen winds of international competition they will be more efficient, and pass onto the local economy greater benefits.

It has been argued above (see Chapter 2) that although levels of FDI penetration in South Africa are not high by international standards, the country's heavy reliance on foreign technology increases this penetration. Apart from the issue of technological dependence, the extent of linkages is also crucial to the level of penetration. A Board of Trade and Industry (BTI) investigation into the use and availability of subcontracting firms, revealed that "subcontracting is not widely practised in South Africa and that a sufficient infrastructure of subcontracting firms does not exist" (BTI Report Number 2614:162). It seems, then, that there is room for concern about the degree of MNC integration into local manufacturing, particularly since FDI is concentrated in the highly import-intensive capital goods industry.

Apart from using retained value as a measure of MNC integration, one can also estimate the extent of backward linkages - which according to Hirschman (1958) give more impetus to development than forward ones - for individual sectors using the ratio of value added to total output as a proxy (Parris, 1981:141); a high ratio indicating weak linkages because inputs from other sectors are relatively small. But although this ratio can be calculated from the Input-Output tables it is of limited value owing to its neglect of the absolute size and importance of individual sectors. In fact,

value added may be a more appropriate measure of a sector's contribution to production than this ratio which focuses purely on linkages. A high value added in itself is more desirable than a low one, *ceteris paribus*.

In any event, Parris' hypothesis - that given a high level of penetration, the degree of integration is inversely related to the ratio of value added to total output - is untestable for South Africa because we lack sufficient detail about penetration at the sectoral level. In an attempt to get a clearer picture of MNC linkages in South Africa our survey asked respondents questions relating to both backward and forward linkages.

The conventional view that the vast bulk of FDI in LDCs has gone into protected import-substituting activities rather than into export-promoting industry is exemplified by the sectoral distribution of FDI in South Africa, though FDI has not necessarily followed the pattern of effective protection within import-substituting industry (see Chapter 2).

The evidence presented in Table 3.13 suggests that foreign-controlled firms have a greater propensity to import than locally owned firms, particularly in the sectors textiles, clothing and leather, and fabricated metals, machinery and equipment. The average propensity to import of all locally owned firms in the sample is 20 per cent, as compared with the 46 per cent of foreign-controlled firms. Although these

figures perhaps overstate this difference because of the equal weighting of each sector in the calculation of the overall average, it is nonetheless an indication that foreign-controlled firms have weaker integration into the local economy than domestically-controlled firms.

TABLE 3.13

MEAN PERCENTAGE OF INPUTS IMPORTED BY OWNERSHIP
AND SECTOR 1991

	Ownership	
	Local	Foreign
Textiles, clothing and leather	19	95
Chemicals, rubber and plastics	33	32
Fabricated metals, machinery and equipment	10	30
Others	19	27
Average	20	46

Source: author's survey

In the case of forward linkages, Table 3.14 presents evidence on the mean percentage of output exported according to ownership and sector. As would be expected the figures are considerably lower than those for imports, both because the sectors surveyed were import-oriented, and because manufacturing is a net importer. Although the relative differences between foreign- and locally-owned firms are large, the absolute differences are small, with the partial exception of the sector Others. The overall averages are 7 and 11 per cent for local and foreign firms respectively. If anything, local

firms have marginally stronger forward linkages than do foreign firms.

TABLE 3.14

MEAN PERCENTAGE OF OUTPUT EXPORTED BY OWNERSHIP
AND SECTOR 1991

	Ownership	
	Local	Foreign
Textiles, clothing and leather	2	5
Chemicals, rubber and plastics	12	5
Fabricated metals, machinery and equipment	8	13
Others	6	21
Average	7	11

Source: author's survey

Some idea of the types of linkages which have been created by MNCs may also be derived from a survey conducted by C. Jenkins (1986:151). As far as backward linkages are concerned, with the exception of one firm, all foreign affiliates interviewed indicated that, in value terms, at least 50 per cent of their inputs were imported. This figure is much lower when measured by weight (around 20 per cent), owing at least partly to weight-based local content regulations at the time. On the output side, MNCs appeared to market very little outside South Africa, both because of the country's political isolation and uncompetitiveness. C. Jenkins concludes that "FDI in the manufacturing sector does not appear to have resulted in the development of strong linkages. The most well-developed

linkages into the local economy tend to be those that probably do not contribute very much to the gross domestic product : all MNCs interviewed tend to make use of local transport, local advertising agencies, local architects and engineers, etc." (p.152).

The creation of linkages can provide a stimulus to economic development and growth. According to many studies (Killick, 1973; Parris, 1981; R. Jenkins, 1987) FDI's contribution to this objective has not been satisfactory. This, it is argued, is because many functions of the firm are retained in the parent company or in other affiliates and subsidiaries. On the other hand, some studies have found that MNCs have stronger linkages than their local counterparts (Willmore, 1976, 1986). The evidence for South Africa is ambiguous. As we know, the manufacturing sector as a whole is dependent on foreign technology to an unhealthy degree, and with the exception of minerals beneficiation, the contribution of manufacturing to total exports is small. But there is no evidence, apart from Table 3.13 (the results of which may not be representative), to support the view that ownership is a factor in the comparative performance of firms. As long as the local capital goods industry remains stunted, the linkages of all manufacturing firms will remain weak, and behavioural similarities will perforce predominate over possible ownership differences.

5. MARKET STRUCTURE AND PROFITABILITY

A major issue which divides opinion on MNCs is the extent to which large international firms are essentially competitive in nature or whether they represent substantial concentrations of economic power (R. Jenkins, 1987, 1989). A related question is whether FDI serves to increase competition or to monopolize those industries in host countries in which it takes place. Newfarmer (1979) argues that the question of competition is of such importance that it constitutes the major dividing line between those theorists in favour of FDI and those against.

The reason why the extent of competition is regarded as so important is that it focuses attention on whether MNCs earn economic rents at the expense of host countries. This is a meaty theoretical issue, which often frames dependency theory critiques of FDI, since by implication, ownership and profits, the touchstones of capitalism, are called into question. In practice, this is an empirical issue but the evidence on trends in international competition is rather mixed (Lall, 1980; Dunning, 1981). Part of the reason for this is that the existence of a correlation between highly concentrated market structures in developing countries and the presence of MNCs implies nothing about causality. Other factors may equally well be responsible for this relationship, and we have no idea what the "alternate position" would have been had FDI not occurred.

The neoclassical view regards it as almost axiomatic that FDI leads to a reduction in concentration, i.e. increased competition in host countries. Furthermore, over time the degree of competition tends to increase either because the initial FDI attracts further defensive FDI, or because demonstration effects make local firms more competitive (Vernon, 1977). This competition keeps profits down, and where above average returns are earned, this is owing to the ownership of intangible assets rather than to market power. MNCs, in other words, are not an important source of market imperfections in host countries.

In contrast, neo-marxist and dependency interpretations believe that MNCs have considerable market power, which they abuse to earn higher than average rates of profit. This enables them to replace local competition over time. The question is, do MNCs in fact earn higher profits than local competitors, and if so, are differential profit rates explicable in terms of industrial structure and risk adjustment.

There are major problems in carrying out such an analysis, the principal one being the opportunities that MNCs have for transfer pricing. Thus the declared profits of a subsidiary do not necessarily reflect the true contribution of that subsidiary to the global profitability of the parent company. In the South African context this problem is aggravated by the existence of a dual exchange rate that provides added incentives for transfer pricing. Indeed, some commentators

(Smit and Mocke, 1991; Kahn, 1991a) have seriously challenged the accurateness of official figures for profit repatriation (see Chapter 4). This same dual exchange rate also "artificially" boosts the profits of new FDI (in terms of external currencies), which makes profitability comparisons between locally- and foreign-owned forms more complicated.

Intra-firm trade permits subsidiaries to transfer undeclared (and untaxed) profits out of a country through overpayments for intra-company imports, or underpricing of similar exports. Transfer pricing may respond to country tax differentials, to local shareholdings, to exchange controls, to risks of nationalisation, and to differential tariff levels, etc. (Lall, 1973).

Secondly, subsidiaries also commonly make various service payments to parent firms such as management, technical and trademark fees, royalties, etc. These payments should be treated as an element of profit, and rates of return must reflect this. Thirdly, the measurement of profitability is ambiguous, in an accounting sense. It is, for example, not clear how fixed assets transferred within the organisation, especially if they are second hand, are to be valued. Nor is it always clear how technical know-how from the parent company has been capitalised as part of the capital transferred. Periodic revaluations of assets necessitated by inflation also complicate the situation (Langdon, 1981). Fourthly, as Chudnovsky (1973) has illustrated in the Columbian context, the ratio of debt to equity (the gearing ratio) can have a critical

impact on the profitability of FDI, which is one reason why host country governments impose local borrowing ceilings.

It is common knowledge that there is a very high level of economic concentration in South African manufacturing (Du Plessis, 1978; Tregenna-Piggott, 1976). Fourie and Smit (1989) have shown that there is a tendency towards increased concentration, especially in those sectors where FDI levels are high. However, they also find that the extent of relative concentration is lowered significantly by foreign competition, which suggests that FDI in the manufacturing sector is a force for competition rather than concentration, if it has any influence at all.

On the other hand, Tregenna-Piggott (1976) calculated that the welfare loss arising from monopoly was highest in the fabricated metals, machinery and equipment sector (between 28 and 31 per cent of output) and in the chemicals, rubber and plastics sector (about 24 per cent). As we know from Chapter 2 above, these sectors are subject to a high degree of foreign control. Welfare losses owing to monopoly were lowest in the wood and wood products sector (0,2 per cent), basic metals (1,0 per cent) and textiles, clothing and leather sector (between 1,7 and 1,9 per cent). These sectors have little FDI. Furthermore, Rogerson (1978a) calculated that foreign-controlled manufacturing plants were on average over four times the size of their locally-controlled counterparts.

We are left with a picture of market structure which suggests that although FDI is more dominant in those sectors where welfare losses owing to concentration are high, these losses would be even greater without competition from foreign-owned firms. Furthermore, the high concentration is related to industry factors such as market size, unit costs, etc. rather than ownership. The dominance of foreign firms in heavy industry is in turn related to their technological superiority in what is, after all, the technology-intensive end of the industrial spectrum.

On the question of profitability, the rates of return calculated in Chapter 4 below do not provide support for the neo-marxist view of exploitation. Indeed, the acceptance (albeit reluctantly) of many MNCs during the 1970s and 1980s that they had a social responsibility beyond the realm of profit seeking, illustrates that they do not fit this conception. Furthermore, Nattrass (1990:108) has calculated that "the net rate of profit in the South African manufacturing sector has been on a strong decline over the post-war period, falling from 44 per cent in 1948 to 9 per cent in 1986", a decline of some 80 per cent.

6. SUMMARY AND CONCLUSION

While the primary and obvious consequence of FDI is the transfer of capital from one country to another, these inflows

have numerous implications, both positive and negative, for the host economy. In this chapter we have examined the role of FDI in the manufacturing sector, focusing on the post-war expansion of manufacturing, the provision of foreign capital and technology, the employment and labour relations effects of FDI, the role of linkages, and the impact of FDI on market structure and profitability.

It emerges that despite the manufacturing sector's growth, its average propensity to import has not declined because the fast growing industries of the post-war era like chemicals, machinery and metal products have a high import content. This high import content is related to the country's continued heavy reliance on imported capital goods and technology.

Retained profits and reserves have been the major source of capital formation in MNCs since 1957, accounting for 85.3 per cent of the total. This is a particularly worrisome feature for a developing country that is short of investment capital, because it implies that little capital has actually been transferred. It is also much larger than that often reported for other developing countries. Less than one half of the foreign-controlled firms in our survey sample reported that they were initially financed from overseas. Our results also indicate that foreign-controlled firms are usually conservative in their gearing practices.

All manufacturing firms display a considerable dependence on foreign technology and R and D, but there is no evidence of any

difference in this dependence between foreign and locally-controlled firms. Our survey results confirm the earlier results of Black (1985), that this dependence though still high, is dropping. The survey results also show that foreign-controlled firms were at least as willing as their local counterparts to modify techniques of production to suit local conditions. Interestingly, from an "inappropriate technology" viewpoint, very few firms in either ownership group cited factor price differentials as an important factor in their decisions to modify imported technology. Most gave firm size as the key variable. At the same time though, significant capital deepening has occurred across the board. This capital deepening, however "appropriate" or "inappropriate", increases the economy's dependence on capital goods imports, given the under-development of the local capital goods industry.

According to our survey, there is an increased awareness amongst all firms of the need to pursue R and D locally, though foreign-controlled firms spend significantly less on R and D which contradicts the findings of the University of Natal study. A marked feature of licensing agreements, found in both the Reynders sample and ours, is that licence-holders in South Africa are often overly circumscribed in where they can market their output.

By dividing the capital goods industry into "core" and "peripheral" processes, Meth (1991) argues that this key

industry is less dependent on imports than is commonly believed. The central issue in the technological dependence debate as it relates to FDI is not whether foreign-controlled firms behave differently to local ones, but that given the public-good features of technology that give rise to the system of patents, and the dominance of industrial countries in technology production, neither group has any option but to import most of their plant and equipment.

MNCs in South Africa currently employ about one-fifth of total manufacturing employment, a drop of nearly a quarter in the last fifteen years. In addition, although linkages are weak, there are probably another one-fifth who are indirectly affected. However, as the recent disinvestment has indicated, ownership is not always relevant to employment. In the case of several large U.S. disinvestors like GM and IBM, their acquisition by local owners has not affected their operations, other than (ironically) to make them more profitable (Bell, 1990).

The impact of the codes of conduct are difficult to ascertain, partly because many locally-owned firms have also adopted social responsibility programmes. This may, however, be grounds for arguing that a demonstration effect is present. As far as wages are concerned, during the 1970s and 1980s many powerful forces were acting on them, such as economic growth, capital deepening, increasing unemployment, trade union activity, etc. This makes it difficult establishing the extent of the impact of FDI on wages. Any impact that FDI has had on

wages, has also been limited by weak linkages into the local economy. Our results indicate that foreign-controlled firms have a greater propensity to import than local ones, but on average all firms import a great deal, mainly because there are no local substitutes. The strongest linkages are to be found in services, which contribute little to employment.

Although welfare losses arising from industrial concentration are greatest in those sectors where FDI penetration is greatest, this does not necessarily imply causation. The extent of competition has historically not been a major concern of the authorities and the available evidence shows that manufacturing rates of return (see also Chapter 4) on FDI in South Africa are not exceptionally divergent from rates of return in other developing countries, especially if adjustments for political risk are taken into account, manufacturing profitability has also declined by 80 per cent since 1948. Whilst it is common knowledge that there is a high level of concentration in South Africa, it has been suggested that the openness of the economy is an important countervailing influence. This openness refers not only to imports but also to FDI, which, on our survey results, appears to have a higher average propensity to import anyway. On balance, therefore, we have argued that FDI is a force for rather than against competition. In this respect, FDI is desirable. In any event, concentration can be monitored and regulated if needs be.

CHAPTER 4THE EFFECT OF FOREIGN DIRECT INVESTMENT
ON THE BALANCE OF PAYMENTS1. INTRODUCTION

One of the most discussed effects of FDI on host countries is its effect on the balance of payments. By providing foreign exchange it may fill a foreign exchange gap, by producing products that were previously imported it contributes to import substitution, and by producing exportable goods it earns foreign exchange. On the other hand, MNC's may restrain exports, increase imports and resort to transfer pricing, as well as repatriate capital, interest and profits, all of which are likely to reduce foreign exchange earnings.

In one sense it may be asked whether balance of payments effects should be considered separately from real income effects, because the balance of payments is determined by macroeconomic relationships and can be controlled by macroeconomic policy instruments such as the exchange rate and monetary and fiscal policy (Johnson, 1970). However, in practice, countries often feel seriously constrained in the use of various adjustment mechanisms, and balance of payments effects become important - even if this results in second-best solutions to any problems concerning FDI (Chenery and Strout,

1966). This is especially true of developing countries where supply rigidities, economic dualism and high external dependence often curtail the efficacy of macroeconomic policy instruments (Adelman and Chenery, 1966). For this reason we believe that the separate study of balance of payments effects is valid, and no attempt is made to examine any indirect costs of adjustment associated with them, which arise when expenditure-reducing and expenditure-switching policies cause changes in real income levels.¹ We are not so much interested in how the balance of payments constraint has affected the South African economy (for which see Kahn (1991a)), as how FDI has affected the balance of payments.

2. THE THEORY

The operations of MNC's on the balance of payments may be divided into two parts: a financial effect on the capital and factor income accounts; and a trade effect on the current account. As far as the financial effect is concerned, the net outcome will depend on the rate of capital inflows relative to the rate of interest and amortisation repayments on foreign liabilities. It is well known, at least amongst economists, (Streeten, 1970; Stewart, 1985; Williamson and Milner, 1991) that there exists a "foreign investment or debt cycle", in which for any given investment, the inflow will initially exceed the outflow, but that over time the flow of capital will become negative, thus creating problems for the balance of payments. This cycle is particularly noticeable in the case of

direct investment, which, though not necessarily associated with the need for repayment, as such, usually represents a single initial injection and nothing further to offset future repatriation of profits and dividends. As long as a host country is borrowing capital at a positive rate of interest it must eventually expect the "basic transfer"² to be negative unless, according to the Domar (1957) rule, the rate of growth of the debt exceeds the rate of return on it.

Generally speaking, the inflow of capital from the MNC parent represents only a part of the total foreign investment. The remainder is financed through local borrowing and by the reinvestment of profits (retained earnings). According to Hood and Young (1979), a study by the U.S. Department of Commerce (1975) using a sample of U.S. affiliates for the period 1966 - 1972, found that only 45 per cent of funds were obtained externally. On the other hand, profit is determined by the total investment in the affiliate, and whilst reinvestment of profits reduces the current burden on the balance of payments, it increases the base on which profits are repatriated, thus increasing the burden on the balance of payments in the longer term. According to Hirschman (1969:20) "it is likely that dividend remittances may be a multiple of capital originally bought into the country".

A related problem - the so-called "Streeten dilemma" - concerns the trade-off between persistent balance of payments problems,

and the alienation of a host country's capital stock to foreign interests. Streeten (1970:7) has pointed out that:

"Since foreign investment must grow at a rate above the rate of return on foreign investment, if profit remittances are not to exceed new capital flows, and since the rate of return on the existing foreign capital stock is almost certainly greater than the rate of growth of the host country, the host country faces a choice between, on the one hand, a slow rate of growth of foreign investment and consequent balance of payments problems; and on the other, assuming a constant ratio between capital and output for foreign and for domestic capital, an increasing alienation of the country's capital stock to foreigners".

The only solutions to this dilemma are to reduce the rate of return on foreign investment, say via taxation; to increase the rate of growth of the host country; to introduce foreign exchange restrictions on factor payments; or some combination of these policies.

Following Parris (1981), the necessary condition for obtaining net positive FDI balance of payments financial effects can be expressed as follows:

$$N > (1 - j)Bi + T \dots\dots\dots (1)$$

where:

N = annual new direct investment from abroad, net of capital repatriated overseas

B = the value of foreign-owned local enterprises at the beginning of each year

- j = the proportion of total foreign profits that is not repatriated, but reinvested locally
 i = the after tax rates of return on FDI
 T = annual disguised profits through transfer pricing.

In order to avoid the alienation problem alluded to by Streeten, i.e. to keep the share of foreign-controlled capital constant, or decreasing, the following condition must hold:

$$A > \frac{N}{B} + ji \dots\dots\dots (2)$$

where:

A = rate of growth of locally-owned firms

In one sense then, A is the determining factor - the way out of the Streeten dilemma - at least in the short run, because if the rate of growth of locally-owned firms is high enough, alienation will not occur even if net capital inflows are large. However, in the long run if the Domar criteria are met, which means that N/B must remain positive and grow cumulatively, alienation is inescapable because A simply cannot also grow cumulatively.

In addition to the financial effect of FDI on the balance of payments, one should also include its trade effects via its contribution towards export promotion and import substitution. The net impact of FDI in this case will be all additional sales made possible by the investment project, minus imported inputs,

subject to the following conditions: that all resources employed in the project were previously unemployed; that all sales were either exports or import substitutes; and that all additional income generated was saved (consumption remaining constant), or alternatively that the marginal propensity to import is zero (Streeten, 1970).

Taking both the financial and trade effects into consideration, we can show the impact of FDI on a host country's balance of payments by using the following model employed by Parris (1981). The initial impact on the balance of payments of a given investment project is:

$$B_0 = I_0 + EG_0 + MSG_0 - MI_0 - LF_0 - PR_0 - D_0 \dots \dots \dots (3)$$

where:

B = balance of payments for a given year owing to the specific investment project

I = the initial inflow of foreign exchange owing to this investment

EG = exports of the product yielding foreign exchange

MSG = reduction in imports of substituted goods

MI = imports of raw materials and intermediate inputs used in production of output

LF = foreign labour and royalty payments

D = annual amortization of the initial investment that is annually repatriated

PR = repatriated profits (including disguised profits)

t = time period

o = initial time period

The effect of the FDI on the balance of payments depends on the magnitude of these variables. If the initial inflow (I) is small and exports (EG) are minimal, whilst the remaining items are all considerable, the effect may be negative. In this case we have:

$$B_t = I_t - MI_t - LF_t - PR_t - D_t \dots\dots\dots (3a)$$

$$B_t < 0 \dots\dots\dots (3b)$$

After the initial inflow in year one, the impact of the FDI is as follows:

$$B_t = EG_t + MSG_t - MI_t - LF_t - PR_t - D_t \dots\dots\dots (4)$$

The effect will be positive or negative depending on whether the sum of exports (EG_t) and import substitution (MSG_t) is greater or smaller than the sum of imported inputs (MI_t), foreign factor payments (LF_t and D_t) and repatriated profits (PR_t). The total impact of the investment over the life of the project will be:

$$\sum_{t=1}^n B_t = I_o + \sum_{t=1}^n (EG_t + MSG_t - MI_t - LF_t - PR_t - D_t) \dots\dots\dots (5)$$

In the long run, since

$$\sum_{t=1}^n I_t < \sum_{t=1}^n (D_t + PR + LF_t) \dots\dots\dots (6)$$

the burden of ensuring that FDI has a positive impact on the host country's balance of payments falls entirely on its net contribution to exports and import substitution. In other words, in this partial equilibrium model, the trade effect must exceed the financial effect to ensure net benefits in the long run. Expressed algebraically if:

$$\sum_{t=1}^n (EG_t + MSG_t) > \sum_{t=1}^n (MI_t - LF_t - PR_t - (D_t - I_t)) \dots\dots\dots (7)$$

then:

$$\sum_{t=1}^n B_t > 0 \dots\dots\dots (8)$$

3. EMPIRICAL RESULTS

3.1 Method of Analysis

In order to establish whether FDI has had a positive or negative financial effect on South Africa's balance of payments, it is necessary to examine the pattern of capital inflows, profit and interest outflows, amortization and factor payments, and retained earnings. Fortunately, most of this information can be gleaned from Reserve Bank publications.

Estimation of the trade effects is less clear cut. In the case of both exports and imports, it is possible to broadly identify those manufacturing sectors which have a high concentration of foreign-ownership, and to measure their contribution to trade. The procedure used in the measurements of the effect of FDI on exports and import substitution is, firstly, to take the ratio between direct imports into sector j, and the total supply of sector j:

$$\frac{M_j}{Q_j} \dots\dots\dots (9)$$

where:

M_j = direct imports into sector j

Q_j = total supply of sector j = direct imports into sector j plus gross production value (GPV) of sector j, where GPV = intermediate domestic inputs into sector j (Q_{ij}) plus value added.

Secondly, in order to estimate the total import content of sector j, we must also consider indirect imports which are the imports of sectors i that supply sector j with intermediate inputs:

$$\frac{M_{ij}}{Q_j} \dots\dots\dots (10)$$

where:

$$\frac{M_{ij}}{Q_j} = \frac{Q_{ij}}{Q_j} \cdot \frac{M_i}{Q_i} \dots\dots\dots (11)$$

where:

$\frac{Q_{ij}}{Q_j}$ = input coefficients (a_{ij})

$\frac{M_i}{Q_i}$ = share of imports in total supply of inputs

This information is contained in the Input-Output Tables for South Africa.

All manufacturing sectors will be ranked according to these values, and this information will be compared to the concentration of foreign-ownership by sector. In this way it is possible to build a fairly accurate picture of import content and import substitution by sector, on the one hand, and the degree of foreign-ownership and the relationship between them, on the other.

A similar exercise using the same method can be done for exports, to establish the relationship between export performance and the degree of foreign-ownership in different sectors. To measure the effect of FDI on exports we use the ratio

$\frac{EG_j}{Q_j}$ (12)

where:

EG_j = exports of sector j

Q_j = total output of sector j

All manufacturing sectors will be ranked according to these values, and this information will be compared with the concentration of foreign-ownership by sector.

3.2 Financial Effect

According to equation (3), the net financial effect of FDI on the host country's balance of payments depends on the magnitude of capital inflows (I), amortization (D), repatriated profits (PR) and foreign labour and royalty payments (LF). It is of particular interest whether $I > D + PR + LF$ in the short run, and whether the long run trend is positive or negative. This is especially important to South Africa since the current account has often been in deficit over the last thirty years (see Table 4.1 and Figure 4.1). This deficit has had to be financed by net capital inflows (both direct and indirect investment), by changes in SDR allocation and by changes in gross gold and foreign reserves. Figure 4.1 shows the movements of the current and capital accounts since 1960. Because the two accounts are not completely offsetting, there have been significant changes over time in the level of both net and gross reserves. Gross reserves include net reserves and liabilities related to reserves, which indicate the Reserve Bank's policy reaction to changes in net reserves (Kahn, 1991a:64). These changes in net reserves are shown in Figure 4.2. It can be seen that since 1970 there has been a greater tendency for net reserves to be negative, and for the pattern of change to become less stable.

TABLE 4.1

SOUTH AFRICA'S NEED FOR FOREIGN CAPITAL,
AS REFLECTED IN THE BALANCE ON THE CURRENT ACCOUNT
OF THE BALANCE OF PAYMENTS, 1962-1989 (R MILLIONS)

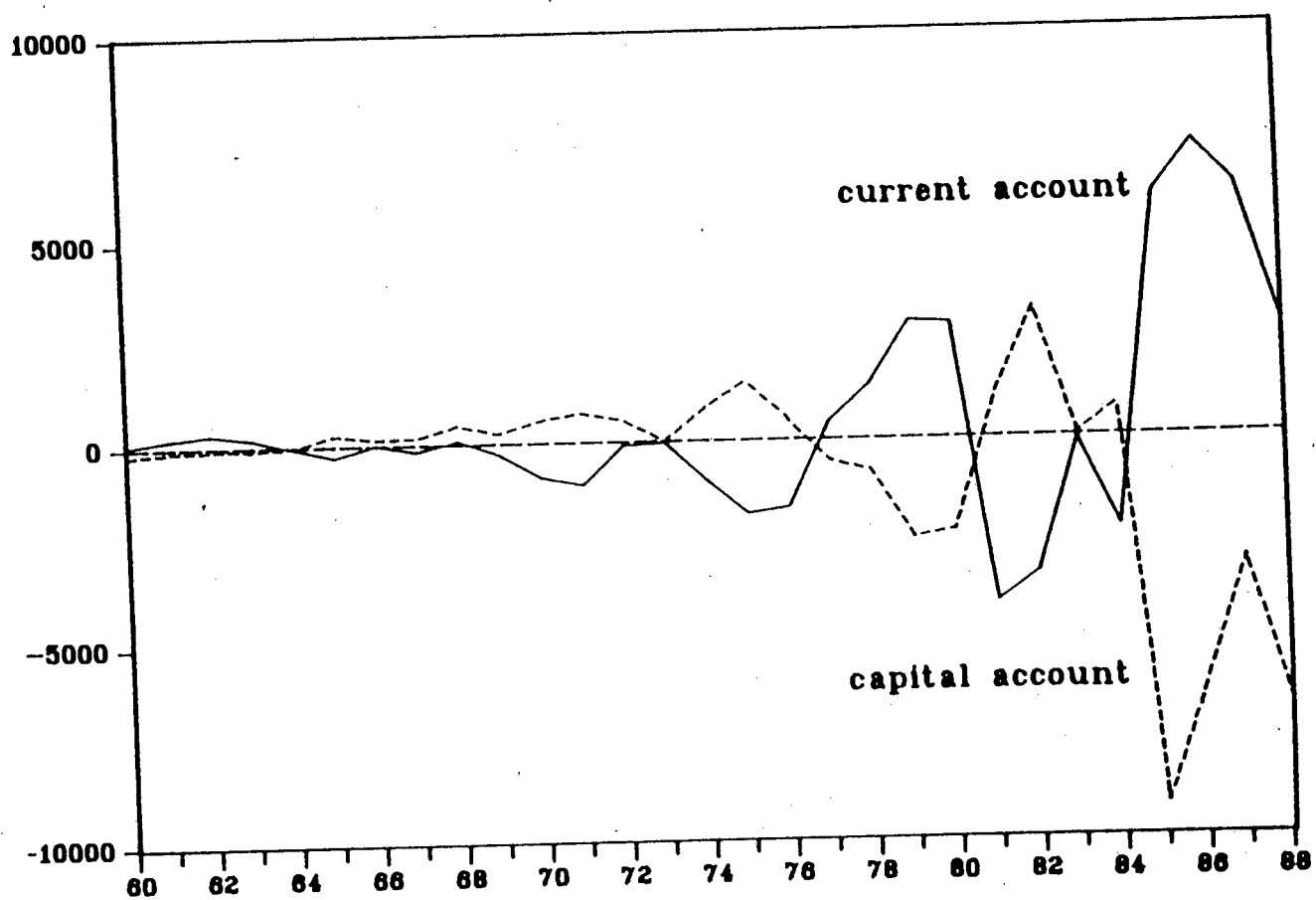
Year	Demand for Foreign Capital : Balance on Current Account (1)	Financing of Balance of Current Account		
		Net Capital Inflow (2) (3)	SDR Allocations and Valuation Adjustments	Change in Net Gold and Foreign Currency Reserves
1962	313	-84	-	229
1963	172	-86	-	86
1964	-60	-29	-	-89
1965	-316	275	3	-38
1966	-26	166	-	140
1967	-195	176	-8	-27
1968	47	487	-	534
1969	-283	218	7	-58
1970	-868	582	24	-262
1971	-1057	818	83	-156
1972	-90	449	78	437
1973	-52	-46	-14	-112
1974	-998	899	31	-68
1975	-1813	1926	85	198
1976	-1630	1110	301	-219
1977	465	-810	246	-99
1978	1330	-797	1046	1439
1979	2880	-2472	2036	2052
1980	2818	-2282	979	1513
1981	-3974	846	-543	-1548
1982	-3696	3085	160	71
1983	-451	-291	-431	650
1984	-2602	-388	1242	355
1985	5087	-9231	1801	566
1986	6114	-6097	990	-164
1987	5995	-3069	330	2215
1988	2728	-6546	446	-1235
1989	3108		-1190	-4345

- (1) a minus indicates a deficit
(2) a minus indicates an outflow
(3) changes in liabilities related to reserves are not included in this table.

Source: 1962-1980 : C. Jenkins (1986:83)
1981-1989 : SARB Quarterly Bulletin, June 1990

FIGURE 4.1

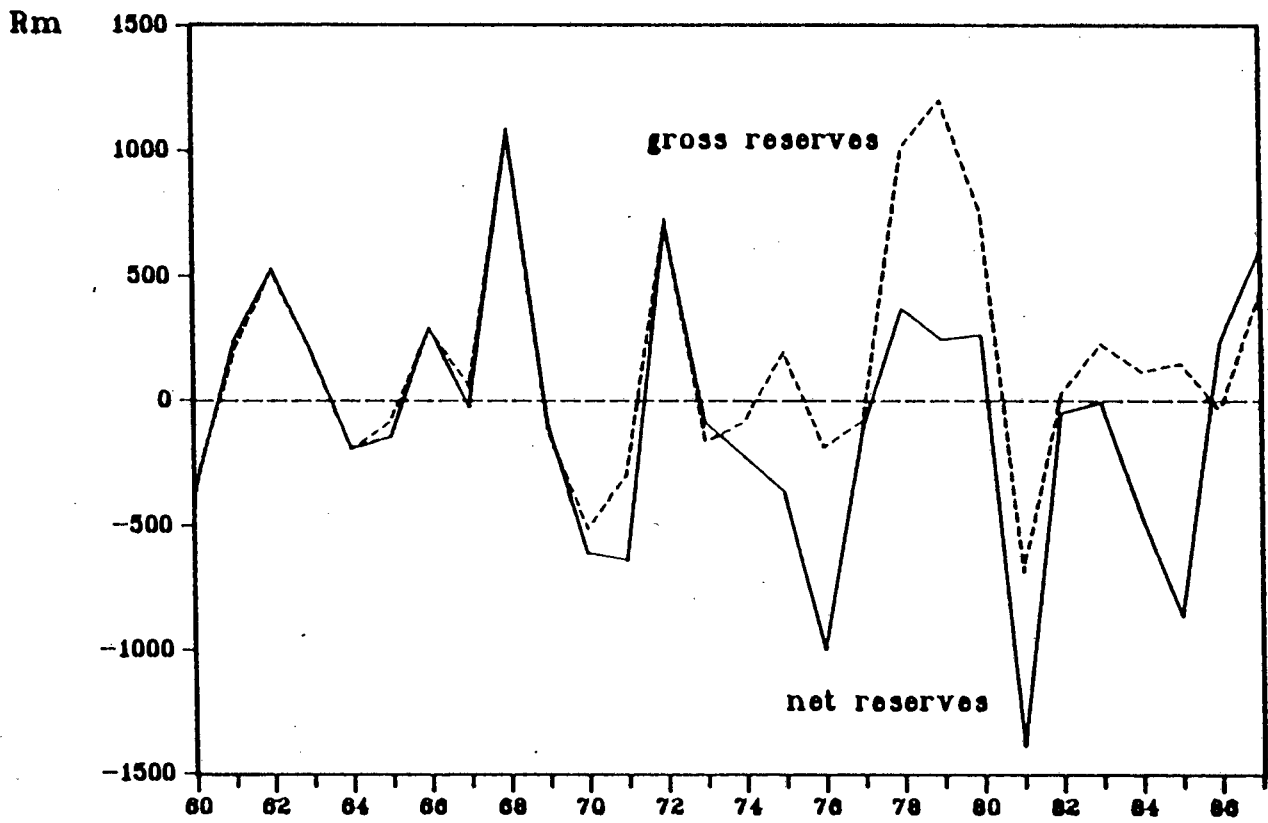
CURRENT AND CAPITAL ACCOUNTS
OF THE BALANCE OF PAYMENTS (RM)



Source: Kahn, 1991a

FIGURE 4.2

NET AND GROSS RESERVE CHANGES
(CONSTANT 1975 PRICES)



Source: Kahn, 1991a

More specific information on the financing of foreign-controlled firms between 1957 and 1988 is given in Table 4.2. Column 1 gives annual total profits (after tax). These figures are calculated as the sum of columns 2 (retained profits and reserves) and 3 (repatriated profits), i.e. the annual change in the stock of share premium, reserves and undistributed profit plus annual dividends and branch profits remitted abroad. Columns 4 and 5 are self-explanatory. Unfortunately, Reserve Bank figures do not allow us to distinguish between amortization and repatriated profits, but this is not an analytical problem from a global balance of payments viewpoint.

It is evident from Table 4.2 and Figure 4.3 that a relatively high proportion (52 per cent on average) of after-tax total profits was retained between 1957 and 1988. This proportion appears to be sensitive in the short run to political events with minimum turning points in 1961, 1977 and 1987. Despite this variability, the long term trend is upwards during the 1960s and 1970s, and downwards in the 1980s.

The figures presented in Table 4.3 allow us to examine the net annual financial impact of FDI since 1957. The net FDI inflows in column 4 are calculated as the sum of columns 1, 2 and 3. Noticeable is the consistently negative net position. Clearly, the FDI base was already large enough in the late 1950s to generate substantial profits, which, even though only partially repatriated, were large enough to generate a negative basic

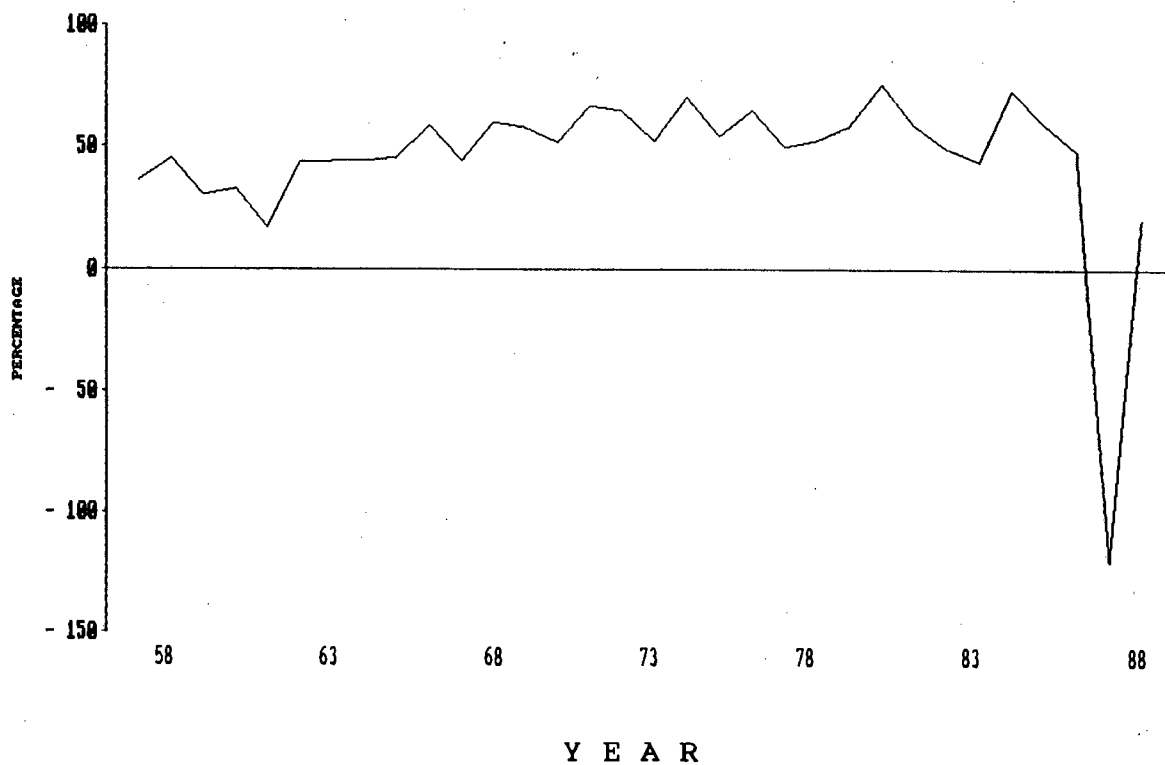
TABLE 4.2

FINANCING OF FOREIGN-CONTROLLED FIRMS IN THE
SOUTH AFRICAN ECONOMY, 1957-1988 (Rm)

Year	Total Profits (after tax)	Retained Profits	Repatriated Profits	% of Profit Retained	% of Profit Repatriated
1957	146	53	93	36.3	63.7
1958	167	76	91	45.5	54.5
1959	129	39	90	30.2	69.8
1960	150	50	100	33.3	66.7
1961	148	25	123	16.9	83.1
1962	183	80	103	43.7	56.3
1963	191	85	106	44.5	55.5
1964	224	99	125	44.2	55.8
1965	278	128	150	46.0	54.0
1966	299	175	124	58.5	41.5
1967	272	120	152	44.1	55.9
1968	438	263	175	60.0	40.0
1969	500	287	213	57.4	42.6
1970	438	226	212	51.6	48.4
1971	522	347	175	66.5	33.5
1972	584	376	208	64.4	35.6
1973	535	281	254	52.5	47.5
1974	635	449	186	70.7	29.3
1975	448	245	203	54.7	45.3
1976	809	525	284	64.9	35.1
1977	596	298	298	50.0	50.0
1978	824	436	388	52.9	47.1
1979	1254	733	521	58.5	41.5
1980	2463	1871	592	76.0	24.0
1981	2170	1274	896	58.7	41.3
1982	1587	764	823	49.2	50.8
1983	1734	761	973	43.9	56.1
1984	2456	1798	658	73.2	26.8
1985	1445	859	586	59.4	40.6
1986	2188	1053	1135	48.1	51.9
1987	591	-712	1303	-120.5	220.5
1988	1754	365	1389	20.1	79.2

Source: McGrath and Jenkins (1985:37)
SA Reserve Bank Quarterly Bulletin, various issues

FIGURE 4.3

PERCENTAGE OF PROFIT RETAINED1957 - 1988

Source: Table 4.2

TABLE 4.3

FOREIGN DIRECT INVESTMENT AND FACTOR PAYMENTSIN THE SOUTH AFRICAN ECONOMY, 1957-1988 (Rm)

Year	Direct Long Term Private Capital Inflows	Repatriated Profits	Royalty Payments	Net FDI Flow
1957	12	-93	-	-81
1958	39	-91	-	-52
1959	34	-90	-	-56
1960	-8	-100	-	-108
1961	-4	-123	-4	-131
1962	12	-103	-5	-96
1963	-22	-106	-11	-139
1964	3	-125	-11	-133
1965	50	-150	-17	-117
1966	85	-124	-19	-58
1967	42	-152	-23	-133
1968	144	-175	-24	-55
1969	139	-213	-26	-100
1970	157	-212	-31	-86
1971	115	-175	-32	-92
1972	138	-208	-46	-116
1973	63	-254	-51	-242
1974	65	-186	-45	-166
1975	159	-203	-72	-116
1976	134	-284	-92	-242
1977	5	-298	-114	-407
1978	-27	-388	-139	-554
1979	18	-521	-129	-632
1980	124	-592	-148	-616
1981	307	-896	-179	-768
1982	270	-823	-389	-942
1983	184	-973	-216	-1005
1984	300	-658	-224	-582
1985	-10	-586	-249	-845
1986	-224	-1135	-271	-1630
1987	-277	-1303	-341	-1921
1988	115	-1389	-356	-1630

Source: SA Reserve Bank Quarterly Bulletin, various issues
 McGrath and Jenkins (1985:37)
 SA Reserve Bank, private communication

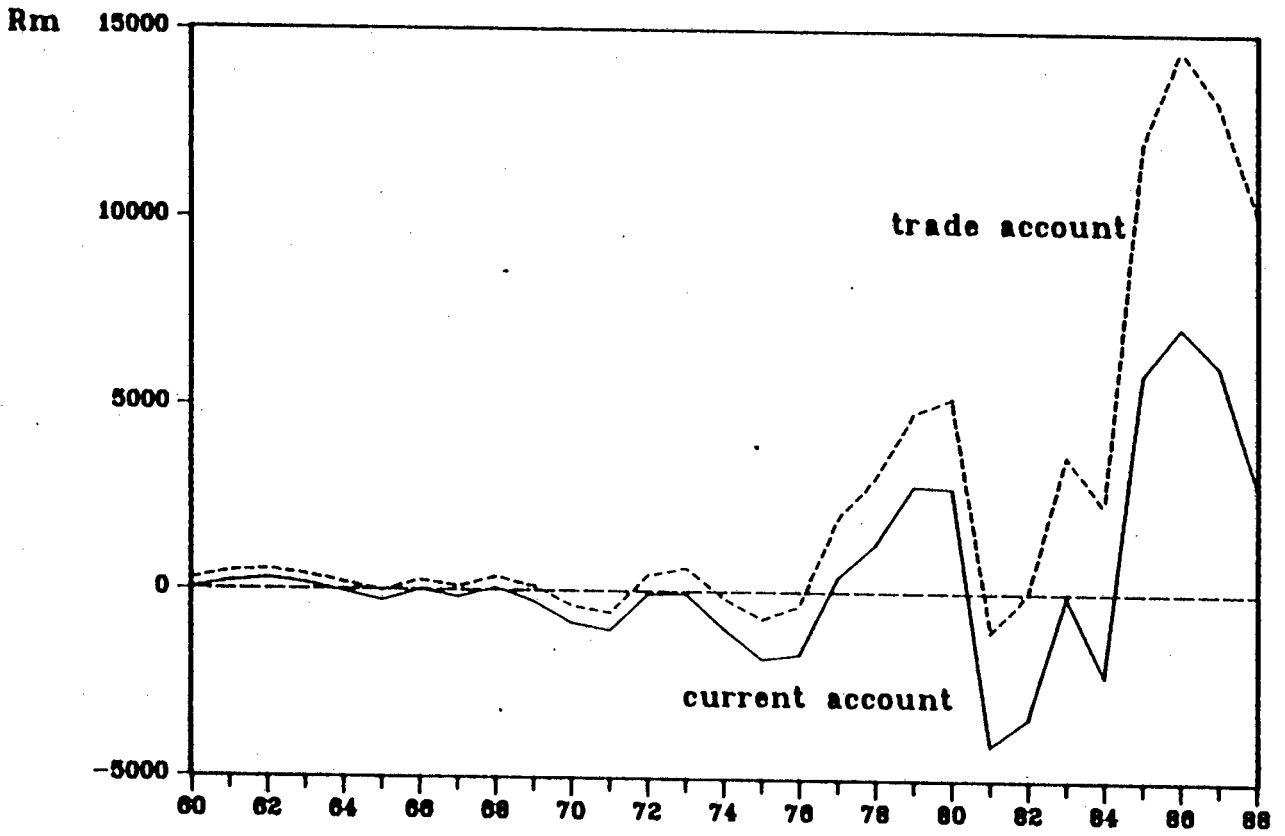
transfer, given the relatively small inflow of direct long term private capital after 1957. Also interesting is the substantial increase in royalty payments, particularly in the 1980s.

This negative basic transfer has added to the burden of financing the balance of payments which corroborates Kahn's (1991:75) finding that, in general, factor service payments have often been substantial enough to bring about current account deficits, despite almost persistent surpluses on the trade account. This is illustrated in Figure 4.4.

The Department of Trade and Industry sets and monitors strict guidelines for the value of royalty payments in an attempt to prevent exploitation by foreign licensors (DTI, 1991). This watchdog role extends to advising the Reserve Bank, who are concerned to prevent MNCs loading royalty payments as a method of disinvestment. Assuming that the DTI and the Reserve Bank have been successful, the increasing nominal value of royalty payments (apart from reflecting inflation) reinforce the argument put forward in Chapter 2, as well as the observations of Innes (1989), that the "disinvestment" of the last fifteen years has been a sham exercise involving the replacement of foreign production with licensing, distribution, franchising and marketing agreements.

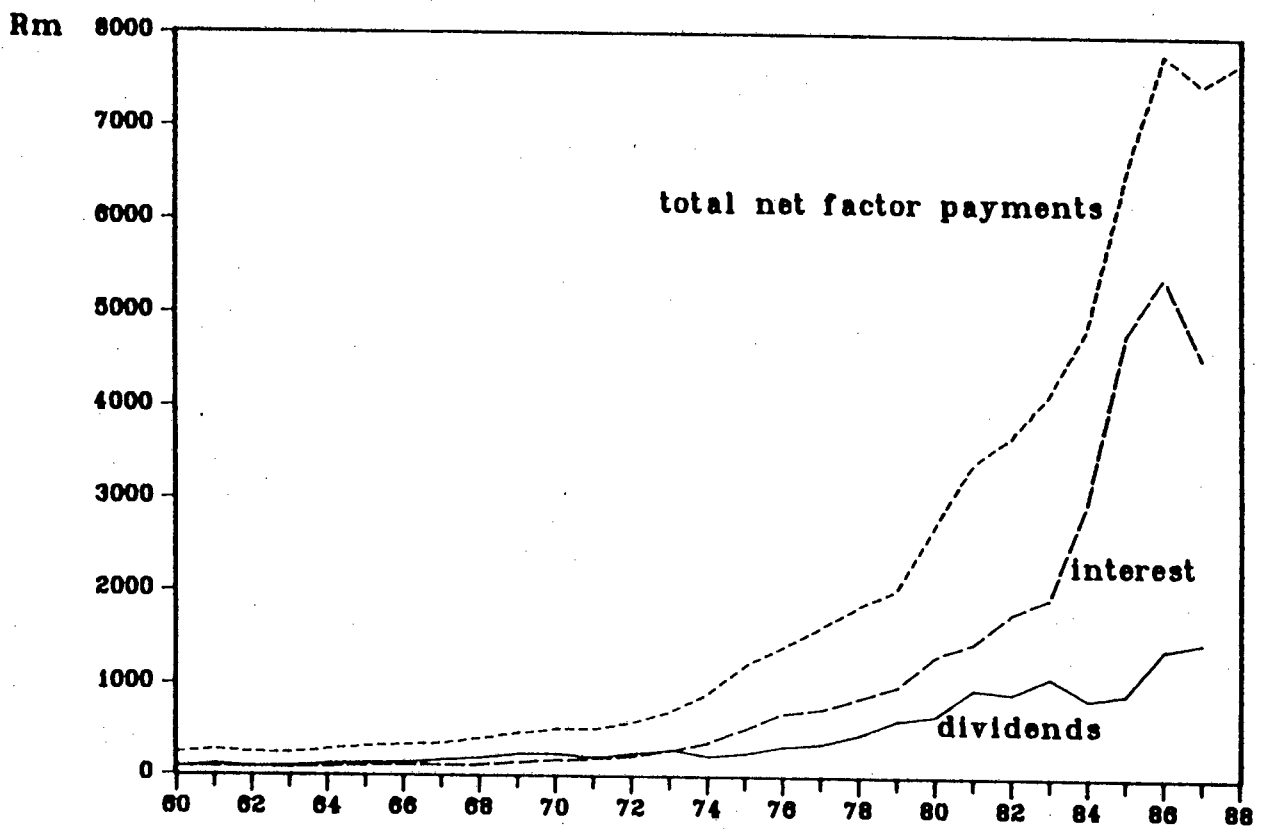
For comparative purposes, Figure 4.5 shows the breakdown of factor payments, including non-FDI interest payments, which

FIGURE 4.4

CURRENT ACCOUNT AND TRADE ACCOUNT

Source: Kahn, 1991a

FIGURE 4.5

A BREAKDOWN OF SOUTH AFRICA'S FACTOR PAYMENTS1960 - 1988

Source: Kahn, 1991a

rose rapidly in the 1970s, and at a faster rate than repatriated profits and royalty payments. As Kahn (1991a:75) has pointed out:

"... these payments have tightened the balance of payments constraint by placing a substantial additional burden on the current account. Even at the height of the debt crisis in 1985-6, South Africa maintained its commitment to allow free flows of interest and dividend payments. In this way the capital shortage came to be compounded, for net exports have to finance not only capital repayments but also net debt servicing and dividend payments".

Apart from the burden of factor payments on the current account balance, in recent years it appears that significant transfer pricing and exchange control evasion has occurred. Both Smit and Mocke (1991) and Kahn (1991b) have presented estimates of this capital flight from South Africa. A problem intrinsic to the analysis of capital flight is that of definition (see Williamson and Lesard, 1987). Neither Smit and Mocke nor Kahn are able to resolve this problem, and we are left unable to distinguish between resident and non-resident capital flight, and between short and long term capital flows. In short, although both studies show that large-scale private capital outflows have occurred, at times amounting to as much as 10 per cent of gross domestic fixed investment (Kahn, 1991:29), it is not clear to what extent MNCs were involved, although they are clearly better placed institutionally to take advantage of the potential for transfer pricing (Natke and Newfarmer, 1985; UNTNC, 1985), and some evidence does exist that this is the major channel for exchange control evasion (Kahn, 1991b:9;

Financial Mail, 1989:25). Whatever the precise figures, the subtraction of capital flight (estimates range from \$12 billion to \$22 billion for the period 1970-88) and trade misinvoicing (estimated at more than \$20 billion for the period 1970-85) from foreign exchange reserves impose a considerable further burden on the balance of payments.

Despite the evidence of the inefficiency of exchange controls presented in these studies mentioned above, this does not constitute grounds for abolishing them. The fact that they are porous is not undesirable. The marginal costs of ensuring zero leakages would clearly be greater than the marginal benefits of the extra rand retained domestically. A familiar argument is that the existence of controls raises the cost of FDI in South Africa (Meyer and Vorhies, 1991) by restricting disinvestment. However, the evidence shows that the major concern of direct foreign investors is not exchange controls (since this investment is inherently long term) but the general economic climate and other measures such as double taxation that reduce the rate of return on their investments. The intensification of exchange controls after 1961 did not lead to a decrease in FDI, whilst their lifting in the mid-1980s coincided with major disinvestment. This is not to say that exchange controls have no effect on foreign investment decisions, but they are only a small part of a much larger picture.

Following equation (1) above, since the basic transfer is negative after 1957, the conditions necessary for obtaining a net positive balance of payments financial effect are not met.

However, using the growth rate of real GDP as a proxy for the growth rate of locally-owned firms in equation (2), according to Table 4.4 (last column), alienation of the domestic capital stock was only significant from about 1966 to 1976, and again in the early 1980s. This trend was rapidly reversed by disinvestment after 1985, and as a result, in terms of this measure, the average penetration of foreign capital dropped by 2,5 per cent between 1957 and 1988. In terms of the "Streeten dilemma", the country has avoided the alienation of its capital stock to foreign interests, but at the expense of a continuous net leakage of foreign exchange via the factor income account.

Figure 4.6 shows the growth rate of real GDP and the growth rate of FDI. Where the growth rate of FDI exceeds that of real GDP, the FDI trend line above that of real GDP. This is equivalent to alienation in the respective periods, and is indicated in the last column of Table 4.4 as a negative percentage. Although FDI is generally thought to be less sensitive to political factors than indirect investment, at least in the short run, it is interesting to note that the growth rate of net FDI (see column 6 in Table 4.4) was either negative or very low in the periods known to be affected by civil insurrection. This is not to say that economic factors such as overvalued exchange rates, large fiscal deficits, negative real interest rates and rates of return have no impact on foreign investment (Smit and Mocke, 1991; Smit, 1991) but as far as flows associated with FDI are concerned, it does seem that political factors are the dominant influence over net FDI

TABLE 4.4

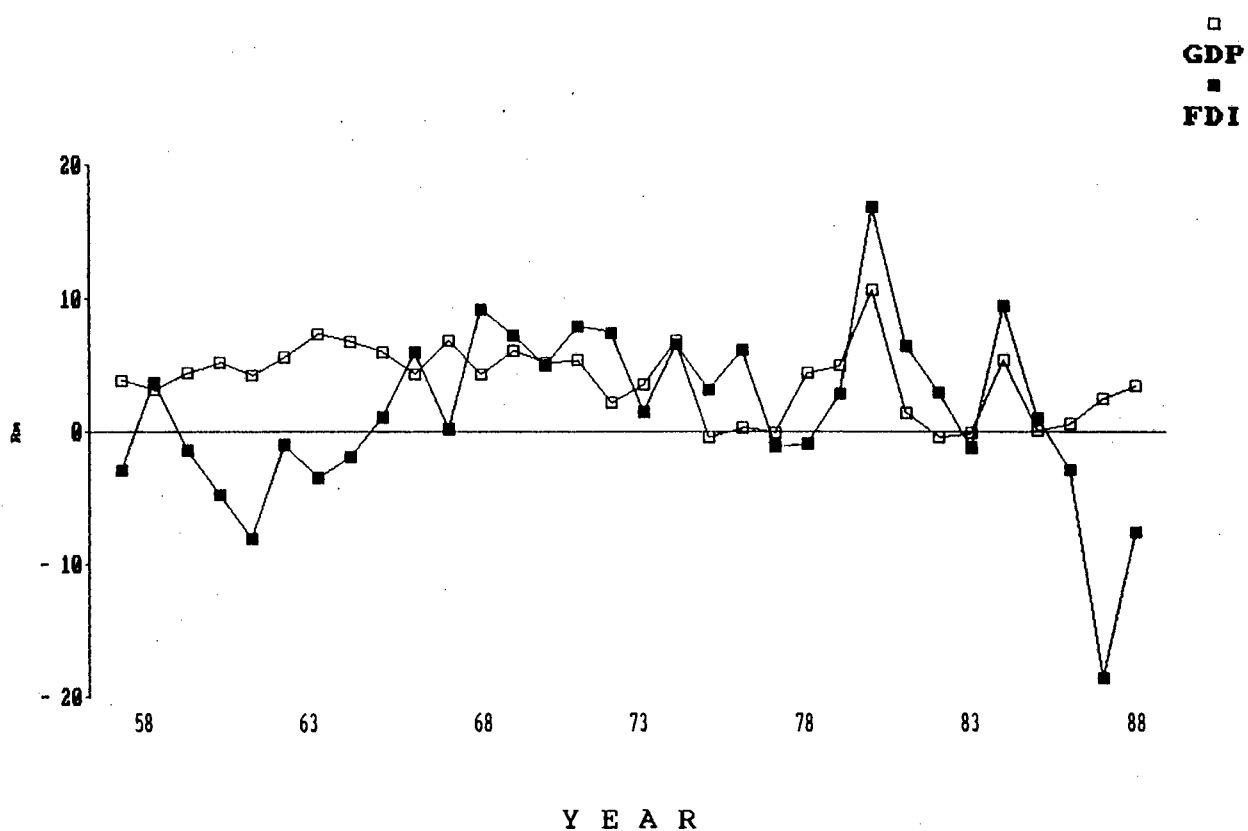
A COMPARISON BETWEEN THE GROWTH RATES OF DOMESTICALLY-
AND FOREIGN-OWNED CAPITAL STOCK 1957 - 1988

Year	Growth Rate of Real GDP %	Net FDI Flow	Value of FDI	% of Earnings Retained	Rate of Return %	Growth Rate of FDI %	Alienation* %
	A	N	B	j	i	(N/B+ji)	A-(N/B+ji)
1957	3.8	-81	1026	36.3	14.2	-2.8	6.6
1958	3.1	-52	1120	55.5	14.9	3.7	-.6
1959	4.4	-56	1182	30.2	10.9	-1.4	5.8
1960	5.2	-108	1242	33.3	12.1	-4.7	9.9
1961	4.2	-131	1267	16.9	12.0	-8.0	12.2
1962	5.6	-96	1363	43.7	13.8	-1.0	6.6
1963	7.3	-139	1428	44.5	14.1	-3.4	10.7
1964	6.7	-133	1533	44.2	15.3	-1.9	8.6
1965	6.0	-117	1683	46.0	17.5	1.1	4.9
1966	4.3	-58	1904	58.5	16.7	6.0	-1.7
1967	6.8	-133	2043	44.1	14.4	.2	6.6
1968	4.3	-55	2411	60.0	19.2	9.2	-4.9
1969	6.1	-100	2804	57.4	18.7	7.2	-1.1
1970	5.2	-86	3087	51.6	15.2	5.0	.2
1971	5.4	-92	3455	66.5	16.0	7.9	-2.5
1972	2.2	-116	3888	64.4	16.2	7.4	-5.2
1973	3.5	-242	4190	52.5	14.0	1.5	2.0
1974	6.8	-166	4725	70.7	14.4	6.6	.2
1975	-.4	-116	5095	54.7	10.0	3.1	3.5
1976	.3	-222	5713	64.9	15.7	6.2	-5.9
1977	-.1	-407	4953	50.0	14.3	-1.1	-1.0
1978	4.4	-554	5449	52.9	17.7	-.9	5.3
1979	5.0	-632	6197	58.5	22.3	2.8	2.2
1980	10.7	-616	8069	76.0	32.3	16.9	-6.2
1981	1.4	-768	9355	58.7	25.1	6.5	-5.1
1982	-.4	-942	11758	49.2	16.8	2.9	-3.3
1983	-.1	-1005	12503	43.9	15.6	-1.2	1.1
1984	5.4	-582	14464	73.2	18.5	9.5	-3.9
1985	.1	-845	15693	59.4	10.8	1.0	-.9
1986	.6	-1629	16661	48.1	14.7	-2.8	3.4
1987	2.4	-2633	15858	-33.4	5.9	-18.6	21.0
1988	3.4	-1630	16436	20.1	12.8	-7.5	10.9

Source: SA Reserve Bank Quarterly Bulletin, various issues;
SA Statistics 1986, Central Statistical Service

- Notes:
- Net FDI (N) includes royalty payments
 - The value of FDI (B) is taken to be long term non-bank private sector direct investment, excluding debentures, mortgages and other
 - The rate of return (i) is calculated in Rand terms as total profits (after tax) plus royalties, divided by B
 - * a minus sign indicates alienation

FIGURE 4.6

GROWTH RATES OF REAL GDP AND FDI1957 - 1988

Source: Table 4.4

in both the short and long term. Whilst it might be expected that the financial rand mechanism would insulate the capital account from the vicissitudes of capital flight, both factor payments and direct long term private capital inflows are very sensitive to political sentiment in South Africa and abroad. In contrast, real rates of return seem to have played only a minor role in the determination of the FDI pattern over the last thirty or so years. Only when the commercial rand premium over the financial rand is added to real rates of return does any correlative pattern emerge with factor payments and direct long term private capital inflows, which is hardly surprising since this premium reflects political expectations. The commercial rand premium (see Table 2.4) is often regarded as a measure of foreign business confidence, i.e. risk. Figure 4.7 shows how the annual average commercial rand premium has moved since 1974 when records were started. Notable are the peaks in 1976 and 1986.

According to Table 4.4 the average real (as opposed to financial) post-tax rate of return on FDI between 1957 and 1988 was 15,7 per cent, which is considerably higher than the 6,2 per cent calculated by Van der Merwe and Bester (1983:31) for 1956 to 1981. Our figures are more consistent with those published by the U.S. Department of Commerce in their Survey of Current Business, according to which the average rate of return on U.S. FDI in South Africa between 1960 and 1980 was 16,1 per cent (C. Jenkins, 1986:89). Table 4.5 gives yet

FIGURE 4.7

AVERAGE ANNUAL COMMERCIAL RAND PREMIUM

1974 - 1988



Source: Table 2.4

another comparison of overall South African rates of return and those of U.S. FDI abroad for the early 1980's.

TABLE 4.5

A COMPARISON OF SOME RATES OF RETURN, 1980-85

	1980	1981	1982	1983	1984	1985
South Africa	30,5	23,2	13,5	13,8	17,0	9,2
U.S. FDI in Latin America*	18,8	15,8	7,6	2,4	5,4	10,0
U.S. FDI in other LDCs*	41,3	40,9	29,9	22,5	23,8	18,6

Source: Transnational Corporations in World Development: Trends and Prospects (1988), UNCTC, p.82.

* including petroleum

Whilst South African rates of return between 1980 and 1985 are consistently higher than those on U.S. FDI in Latin America, they are consistently lower than those on U.S. FDI in other less developed countries.

Three features stand out from this analysis. Firstly, FDI inflows and factor payments are more sensitive to political than economic events, depending of course on how "political" and "economic" are defined. Secondly, despite the operation of exchange controls designed to protect net reserves and the external value of the rand, the steady leakage of net FDI via the current account continues to be a significant burden on the

balance of payments. The extent of capital flight is also a worrying feature but we cannot be sure to what extent non-residents are involved. Thirdly, the limited inflow of private long term capital after 1956, coupled with the free flow of factor payments, contrived to push the country into a negative basic transfer, at least as far as FDI is concerned.

3.3 Trade Effect

According to the theory presented above, in the long run in the absence of exchange controls the burden of ensuring that FDI has a positive impact on a host country's balance of payments falls entirely on its contribution to exports and import substitution. In the case of South Africa, where the financial effect is markedly negative, this imposes a further burden on the performance of net exports, especially since it is often argued that few viable further opportunities for import substitution remain (Reynders, 1972). Unfortunately it is not possible to be quantitatively precise about the relationship between FDI and foreign trade, but a picture can be drawn of those sectors where concentration of foreign-ownership is highest and this can be compared with a corresponding picture of imports and exports.

As noted in Chapter 2 above, foreign-ownership is concentrated in intermediate and heavy industry, particularly in chemicals, rubber and plastics, fabricated metals, machinery and equipment, and non-metallic minerals. This concentration can be compared with the pattern of imports given in Table 4.6

TABLE 4.6

TOTAL IMPORT-INTENSITY* BY MANUFACTURING SECTOR,
1971 AND 1985

SIC	Sector	1971	1985
		%	%
311	Food Processing	9.1	11.5
313	Beverage Industries	8.5	11.4
314	Tobacco Products	21.0	8.9
321	Wool and Textiles	57.1	26.9
322	Clothing	29.5	9.6
323	Leather & leather products	36.3	18.7
324	Footwear	20.8	22.6
331	Wood and wood products	30.8	14.7
332	Furniture	8.4	3.9
341	Pulp and Paper	34.1	26.3
342	Printing and Publishing	21.9	28.2
351	Fertilizers, plastics and petroleum	50.3	30.1
352	Chemical products	30.9	33.1
355	Rubber products	30.0	20.6
356	Other plastic products	29.2	17.1
362	Glass and glass products	44.6	37.6
369	Non-metallic minerals	12.3	12.9
371	Iron and steel basic industries	27.2	9.8
372	Non-ferrous metal industries	19.4	9.7
381	Metal products	20.1	16.6
382	Machinery, except electrical	143.1	129.8
383	Electrical machinery	71.8	88.1
384	Motor vehicles	100.8	61.4
385	Transport Equipment	72.0	153.1
386	Other Manufacturing	106.9	88.5
	Average All Manufacturing	41.4	35.6

Source: Input-Output Tables, 1971, 1985, Government Printer, Pretoria.

* See equations 9 and 10 and Appendix 3

which gives the ratio of total imports to sectoral output for 1971 and 1985.

The most import-intensive sectors in both 1971 and 1985 lie at the heavy end of the industrial spectrum; namely, all types of machinery, motor vehicles and transport equipment. Outside of these sectors, import-intensity drops rapidly, although intermediate sectors like chemical products still register an average propensity to import of about one-third of output. At the light end of the industrial spectrum, including sectors like food processing, beverage industries and furniture, import-intensity is much lower.

For manufacturing as a whole, the average propensity to import fell from 41,4 per cent to 35,6 per cent, with 17 out of the 25 sectors registering a drop. In other words, the period is characterised by a significant degree of import substitution. The question now is to what extent FDI penetration is connected with the level and trend of import-intensity, remembering that FDI penetration itself has fallen.

The most highly penetrated industry group, chemicals, rubber and plastics (SIC 35), is of intermediate import-intensity. Fabricated metals, machinery and equipment (SIC 38) is the second most penetrated industry group, and it is also the group with the greatest import-intensity.

However, there is no direct evidence that foreign ownership per se is responsible for high import-intensity. For example, FDI penetration in SIC 38 dropped by sixty per cent between 1978 and 1990, without a similar reduction in import-intensity. A more likely explanation for the high import-intensity of these groups is to be found in their technological dependence (Ganiatsos, 1986). Countries at South Africa's stage of development almost always exhibit a similar pattern of import dependence, irrespective of ownership. Furthermore, the most highly penetrated sector is not the most import-intensive.

As far as the effect of FDI penetration on import substitution is concerned, the evidence contained in Table 4.6 suggests that highly penetrated sectors contributed little to this objective, which is hardly surprising given the highly inelastic demand for the type of (capital) goods that they need to import. It is the dominance of foreign-controlled technology that leads simultaneously to high import-intensity and high FDI penetration. Irrespective of ownership, efficient production in these sectors can only be achieved by using foreign technology.

International experience of foreign-ownership and export performance has been mixed. As the UN Centre on Transnational Corporations (1985:5) points out: "The issue at hand is clearly an empirical one, and conclusions may vary from country to country" (see also Oman, 1989). Some studies support the *a priori* proposition that MNC's can be powerful agents of export growth (Hellenier, 1973; Vernon, 1977; and Dunning, 1979;

ECLAC, 1985; Willmore, 1985) but considerable controversy exists over whether they have fulfilled this role (Vaitsos, 1978; Nayyar, 1978; R. Jenkins, 1979; and Newfarmer and Marsh, 1981; Natke and Newfarmer, 1985; UNCTC, 1988). Most studies reach qualified conclusions, reporting only tenuous links between ownership and export propensity (see Lall, 1981; and Lall and Mohammed, 1983 for a literature review). As pointed out by Erdilek (1982) in his case study of FDI in Turkish manufacturing, there are strong reasons to expect MNC export propensities to vary greatly between different host countries because of extraneous factors specific to their location, such as the level of development, trade and industrial policies, etc.

In other words, it is difficult to generalize about the international experience of foreign-ownership and export performance. The theoretical case is ambiguous, and many studies confuse the influence of ownership with other variables. In one of the most econometrically sophisticated studies undertaken thus far, Newfarmer and Marsh (1981) report that U.S. MNC's operating in Brazil tend to have the same export propensities as local firms, but that MNC's of other national origins have significantly higher export propensities; which raises yet another issue, that of national origin. Clearly the whole question of linkages between MNC's and host country economies is a complex one, requiring a careful empirical investigation for each particular host economy.

Since FDI has contributed little to import substitution in South Africa, it is particularly important to examine its impact on exports. For a number of reasons connected with trade policy and international trading conditions, manufacturing exports in South Africa have performed badly. Table 4.7 gives the breakdown of the ratio of manufacturing exports to total output by sector for 1971 and 1985. One of the first features to be noted in this table is that the average percentage contribution of exports to total output for the whole manufacturing sector doubled from 9,1 per cent in 1971 to 19,5 per cent in 1985. This is a most encouraging trend, from a foreign exchange earning point of view. But as we know from Chapter 2, FDI is concentrated in chemicals, rubber and plastics, fabricated metals, machinery and equipment, and non-metallic minerals, and comparing these industry groups with others listed in Table 4.7, we can see that all three industry groups perform very badly in terms of export earnings; and that the trend over time reinforces this pattern. In contrast, those industry groups with lower levels of FDI penetration, wood and wood products, other manufacturing, and textiles, clothing and leather, tend to export much higher proportions of their output. The most improved industry group in terms of export proportions is Basic metals which, according to the Input-Output Tables for 1985 (Government Printer) was the largest earner of foreign exchange in the manufacturing sector. This group is not highly penetrated by FDI, and its level of penetration dropped significantly, as compared with the average drop in manufacturing, over the period 1978 to 1990.

TABLE 4.7

EXPORT-INTENSITY BY MANUFACTURING SECTOR,
1971 AND 1985*

SIC	Sector	1971	1985
311	Food Processing	16.0	10.6
313	Beverage Industries	3.3	4.0
314	Tobacco Products	1.0	4.0
321	Wool and Textiles	14.1	20.1
322	Clothing	6.3	19.8
323	Leather & leather products	21.3	24.3
324	Footwear	2.3	6.3
331	Wood and wood products	1.6	7.2
332	Furniture	1.0	6.8
341	Pulp and Paper	8.6	13.5
342	Printing and Publishing	1.7	1.2
351	Fertilizers, plastics and petroleum	8.9	15.3
352	Chemical products	5.6	5.1
355	Rubber products	3.8	3.6
356	Other plastic products	1.9	1.0
362	Glass and glass products	5.3	11.0
369	Non-metallic minerals	4.2	2.9
371	Iron and steel basic industries	10.6	29.8
372	Non-ferrous metal industries	11.5	37.7
381	Metal products	5.6	3.9
382	Machinery, except electrical	9.8	6.1
383	Electrical machinery	4.4	3.3
384	Motor vehicles	1.5	4.8
385	Transport Equipment	6.0	7.0
386	Other Manufacturing	43.7	36.7
	Average All Manufacturing	9.1	19.5

Source: Input-Output Tables, 1971, 1985, Government Printer, Pretoria.

* See equation 12

Prima facie, it appears that FDI in manufacturing has contributed little to export performance, at least over the last twenty years or so. The reason for this is that FDI has been drawn to import-competing sectors by trade policy and dependence on foreign technology which is more pronounced in these sectors (Willmore, 1986). However, now that the costs of further import substitution are escalating this pattern is likely to change. In other words, factors such as trade policy, comparative advantage and real exchange rates are more important variables than ownership in explaining why FDI has not raised the level of exports (Krueger, 1974). On the other hand, a policy of export promotion can only be successful if it rests on the technological contribution of FDI. Exporters thus need every assistance in acquiring and assimilating foreign technology.

The simultaneous decline in FDI penetration and the increase in exports are largely unconnected, because the industry groups for which penetration is high are different to those for which export ratios are high. The contribution of FDI to exports and import substitution seems at best mediocre, and it is doubtful whether net exports (as a result of FDI) have been sufficient to offset the negative financial effect of FDI (see equation 7). Although we cannot be sure, owing to the crudeness of the data, it is also probable that the net trade effect of FDI is negative.

4. CONCLUSION

It emerges from the analysis above that the financial impact of FDI in the post-war period has been negative as a result of a negative basic transfer. This has come about because of unrestricted factor payments and a decline in new capital inflows. This net outflow position is aggravated by the likelihood of large transfer payments in the 1980s. At the same time, FDI appears to have contributed little to import substitution, and still less to exports. We must conclude that as far as the balance of payments is concerned, FDI since the war has been a drain on foreign exchange reserves. The resolution of this problem lies in attracting more FDI inflows and imposing stricter exchange controls. Alternatively, the case for FDI must rest on broader considerations than its impact on the level of foreign reserves.

Endnotes

1. For analytical clarity we also ignore (post-Keynesian) arguments against foreign investment based on the "Cambridge critique" (Harcourt, 1972) of capital aggregation, and the impact of the so-called "transfer problem", which involve changes in real exchange rates or national incomes (and hence domestic production) flowing from capital movements (Johnson, 1956).
2. The basic transfer of a country is defined as the net foreign exchange inflow (or outflow) associated with its international borrowing. It consists of the difference between the net capital inflow and interest payments on existing debt. The net capital inflow is the difference between the gross inflow and amortization on past debt. Following Frances Stewart (1985:192), the net capital inflow, F_n , may be expressed as a rate of increase of total foreign debt, so that if total foreign debt accumulated over the past is D , and d is the percentage rate of increase of this debt, then

$$F_n = d.D$$

Interest payments on past debt are equal to the average rate of interest, r , times the outstanding debt, D , so that interest payments consists of $r.D$. The basic transfer is the net capital inflow less interest payments, or

$$d.D - r.D = (d-r)D$$

The basic transfer will therefore be positive or negative according to whether d or r is greater. This is the Domar rule.

CHAPTER 5POLICY IMPLICATIONS1. INTRODUCTION

It is impossible to view the formulation of an appropriate policy framework for FDI in isolation from national and international economic and political trends. Foreign investment policies are only a subset of broader national policies aimed at promoting industrialisation. At the macro-economic level, these policies include monetary and fiscal management, exchange rate policy, and investment in physical infrastructure and human skills. At a micro-economic level, the important policies are those that affect the efficiency with which resources are allocated, and include especially those governing the regulation of trade. At an international level, factors such as protectionism, the establishment of free trade areas and attitudes towards risk exposure also play a role, not to mention in the case of South Africa, the high political profile of FDI.

Nevertheless, there is a range of policies in South Africa, as elsewhere, which specifically affect foreign investors, governing their financial operations, profit-repatriation, separate taxation, etc. Consequently, a proper analysis of the policy environment requires an examination of both general

industrial policies and of measures aimed directly at foreign investment, in addition to the general international climate of opinion about the desirability of economic links with South Africa. Before investigating the nature and scope of these policies, attention is focused on the economic rationale behind them, and the rationale for drawing a distinction between foreign and local firms, and between host country and MNC interests. In certain theoretical respects this focus is a logical continuation of the theory outlined in Chapter 1, particularly that relating to the determinants of FDI and the distribution of net gains between MNCs and host countries. The structure of this chapter is as follows: firstly, we examine the host country-FDI relationship; secondly, stabilisation policy; thirdly, trade and industrial policies; fourthly, tax policy; fifthly, policies specifically affecting FDI, and lastly the future prospects for FDI in South Africa, including a summary of the major findings of this study.

2. CARROTS AND STICKS : THE HOST COUNTRY-FDI RELATIONSHIP

For all their public rhetoric concerning the pernicious effects of FDI on their economies, in practice most developing countries have adopted a more ambivalent, even pragmatic, approach to foreign firms. Although there was a trend during much of the 1960s and 1970s towards greater restriction of FDI (IMF, 1985), and during the 1980s towards relaxation of these restrictions (Globerman, 1988; Pfefferman, 1988), these trends are often exaggerated in the literature. At the end of the

day, authorities in most LDCs have done business with foreign firms, although perhaps not willingly (Hill, 1988; UNCTC, 1988). At the same time, host countries have attempted to improve their net benefits through a combination of some degree of regulation and incentives.

The types of incentives offered include tax concessions, generous depreciation allowances, tariff protection and various subsidies. The specific nature and extent of regulation via bureaucratic controls differs from country to country but in general they include entry regulations specifying the sectors and industries in which foreign firms are not allowed to operate; stipulations concerning the extent of foreign equity participation; requirements that existing foreign firms should "dilute" their equity in favour of local nationals; performance requirements covering *inter alia* export obligations, utilisation and processing of domestic raw materials, employment generation and the setting up of domestic R and D facilities; requirements that local nationals should be appointed to managerial positions; and the imposition of ceilings on rates of royalties payable and the duration of technology licensing agreements (Balasubramanyam, 1984, 1991).

It may seem contradictory to use a policy framework that simultaneously includes incentives and disincentives, but this ambivalence is more apparent than real, and is largely the product of the special cost/benefit characteristic of the nation state - multinational company relationship that has been

well outlined by Behrman (1971). Positive economic analysis can, of course, only take us part of the way down the road when it comes to questions of bilateral countervailing market power. It is that grey normative area that remains, which, in part, makes the issue of FDI and development so interesting. Various suggestions like the setting up of international codes and institutions have been suggested from time to time in order to oversee the distribution of gains between home and host countries, and implicitly to weaken the position of MNCs (Hood and Young, 1979).

But given the practical difficulties involved in such schemes, not to mention the vexing problem of defining equity between nations, little has come of these proposals, although some regional groupings, for example the Andean Pact countries, have attempted to formulate a common policy on FDI (Grosse 1989), and trade-related investment measures have been included in the Uruguay Round of trade negotiations (Balasubramanyam, 1991). In any event, Kindleberger's famous comment in 1969 that "the national state is just about through as an economic unit" is clearly an overstatement in the developing world, if not elsewhere.

In a world of competing legal jurisdictions, each with its own sets of economic rules, supra-national institutions are unlikely to have much success in controlling the ebbs and flows of FDI. Kindleberger's point was, of course, a little different, but competition for FDI amongst LDCs, whilst perhaps weakening them collectively (Vaitsos, 1971), bolsters economic

nationalism (Parry, 1973). Similarly, host countries are learning how to deal with MNCs all the time, and hence how to extract better terms from them (Bergsten, Horst and Moran, 1978).

There are two ways of approaching the question of the relationship between the government and MNCs. The first approach is based on what Streeten (1972:227) has called the Anglo-Saxon conception of welfare, which views the state as a socially benevolent guardian, and consequently as a neutral instrument in protecting the national interest. Notwithstanding the well known problems associated with this orthodox welfare economics approach, it is the approach we have adopted because it has the great value of an individualistic, as opposed to class, basis. We are therefore concerned with the question of whether FDI in post-war South Africa has undermined development efforts, whilst ignoring its impact on the "relations of production".

The second approach is class based, and addresses the political-economy of the state-FDI relationship within a general critique of capitalism, in which the state is believed to be a lackey of capitalism. This removes the notion of bilateral conflict between FDI and host country interests, because FDI is seen as supportive of certain class interests (*comprador bourgeoisie*) and destructive of others. This type of approach serves a useful function insofar as it focuses attention on what economic interests the state represents.

The debate about which notion of government is most appropriate, has been enriched in the case of South Africa by the existence of Apartheid, which is variously seen as an aberrant form of racial capitalism or racial socialism (Lipton, 1985). This debate is far from over, but in the New South Africa is perhaps best left to historians. Needless to add, in this study no attempt has been made to locate the debate about the impact of FDI on economic development within a wider critique of capitalism. Implicit in our view is the notion that the government, whilst not possessing perfect knowledge of how to do so, is committed to increasing the living standards of all South Africans where economically feasible, rather than to feathering its own nest. Helleiner (1989:1443) has expressed similar sentiments as follows:

"The possibility of alternative noncapitalist forms of global economic and political organisation is certainly deserving of study, but, in most of the literature of development economics, as opposed to political science or sociology, the current organisation of the world economy, TNCs and all, is assumed given. For economic analysts of development the key policy questions relate to the possibilities of more desirable developmental outcomes through alternative means of interacting with the present world, including the TNCs."

Quite apart from this problem of defining exactly what the host government's interests are and whether they are divorced from those of the citizenry-at-large, Streeten (1972) has also directed our attention to rather more mundane matters that concern those whose job it is to advise the developing host governments on how to harness the beneficial effects of the MNCs and to control or curtail the damaging effects. Two sets

of problems arise here. Firstly, whether it is technically feasible to exercise effective control over MNCs, and second, the extent to which the state is willing to confront the power of MNCs, assuming that this need arises.

In addition, the debate about the role of FDI in development has often been conducted as if this was the same issue as that of foreign capital flows in development. Whilst this approach may have been satisfactory in past periods where foreign capital flows were almost synonymous with FDI activity, in recent times, the growth of "new forms" of international business activity (Oman, 1984) introduces a number of new analytical and policy issues. Consequently, the designing of optimal policy has become more complex still. It is not, therefore, surprising that this design includes a mixture of the carrot and the stick.

Analysis of the technical feasibility of effectively controlling the FDI activities of MNCs goes to the heart of the conflict between national economic development and MNC profit maximising behaviour. In large part, the public rhetoric against MNCs is a sign of host country frustration at not being technically able to control FDI. The reasons for this are well known. The MNC is less responsive to monetary policy than local firms, because it can straddle national banking systems. It is more easily able to circumvent fiscal policy through transfer pricing of various types, ranging from the allocation of overhead and other joint costs to under- and over-invoicing

for inputs and intermediate outputs. Streeten (1972:226) concludes that:

"While illegal evasion of the law is more difficult for the foreign firm, it has more scope for legal avoidance. It is larger and more powerful than the domestic firm, it is less dependent on the goodwill of the Government and it can always go elsewhere".

At the same time, the existence of bureaucratic capture or rent seeking (Krueger, 1990) constitutes grounds for being cautious about interfering with market processes.

3. STABILISATION POLICY

Without getting involved in a detailed analysis of the conduct of monetary and fiscal policy (including exchange rate policy and control), it is important to note the impact of general stabilisation policies on economic conditions in South Africa, as elsewhere, because they are fundamental to the creation of a climate that may or may not attract FDI.

As a consequence of the "openness" of the South African economy, the unpredictability of its export earnings, and its high propensity to import especially capital goods, the stability requirements of the balance of payments have often overshadowed domestic considerations, notwithstanding the abandonment of fixed exchange rates in 1971. Truu and Contogiannis (1987:285) have remarked that "in South Africa it is the tail (the balance of payments) that wags the dog (the

domestic economy)". On several occasions, restrictive monetary and fiscal policy has had to be pursued in order to improve the balance of payments, although this conflicted with domestic demand conditions at the time.

As elaborated in Chapter 4, in the past, deficits on the current account of the balance of payments were often neutralised by net inflows of foreign capital, including short and long term debt. But in the 1970s and 1980s, this could no longer be generally relied on. In fact during this time, there occurred a decline in the country's net gold and other foreign reserves as a result of a net outflow of either short- or long-term capital, sometimes both, and a persistent depreciation of the rand. The virtual collapse of the currency in August 1985 forced the authorities to suspend foreign transactions in rand, and declare a moratorium on the repayment of the major part of outstanding foreign debt. Although the authorities also restored the previous two-tier exchange rate system, designed to stem the outflow of international capital, downward pressure has continued to be exerted on the exchange rate and the level of foreign reserves since then. This, in turn, has necessitated a continued policy of domestic demand contraction in order to preserve a positive balance on the trade account of the balance of payments. Stabilisation policy has consequently been severely constrained in recent years, especially with imported inflation being an everpresent threat.

As we pointed out in Chapter 4, the net contribution of FDI to foreign exchange reserves has been negative since the war, and large new inflows of long term private capital are needed to produce a positive basic transfer as far as FDI is concerned.

In order to attract FDI there is a need to improve both investor confidence and profitability. Macroeconomic policy cannot overcome these problems on its own. A horse can be taken to the water, but it cannot be forced to drink. Nevertheless, stabilisation policy has a necessary and important role in attracting FDI (or stemming capital flight). The authorities are keenly aware of this role and they appear to be going out of their way to make plain that by following IMF-style macropolicy they are attempting to get the economic fundamentals "right". Both the Reserve Bank and the Treasury have followed a conservative line since 1985 with the principal aim of restoring South Africa's international credit-worthiness. The Reserve Bank has also been keen not to repeat the "monetarist" experiment of 1984 which directly preceded and partly precipitated the debt crisis in 1985 (Innes, 1986). At the same time, the deficit before borrowing has been kept as manageable as possible.

Notwithstanding the laudable objectives of stabilisation policy during the post-war period, problems with its implementation still exist. For example, monetary policy has from time to time been pro-cyclical or destabilising, and low or even negative real interest rates have contributed to the process of capital deepening. High real exchange rates have also often

been to the disadvantage of non-mineral exporters. Whilst such problems are not peculiar to South Africa, nor do they only apply to FDI, they form part of the economic background which does concern foreign investors. In this regard the successful rescheduling of outstanding debt and the ability of the authorities to finance it by contractionary policies has won them praise in some foreign quarters, particularly amongst those who are keen to invest in the New South Africa (Business Day, 27/6/1991). Local bankers, too, have come out in support of the Reserve Bank's current high interest rate policy, as the following extract reveals:

"Standard Bank Group MD Conrad Strauss (said that) attempts to 'buy' political stability and goodwill with cheap money and increased government spending would trigger potentially uncontrollable inflation .. He said South American hyper-inflation and foreign debt crises were the consequences of easy money policies and reckless use of deficit financing by governments. Brazil's inflation rate in 1990 was 2938 per cent and Argentina's 6500 per cent. The average inflation rate for all developing countries in 1990 was 110 per cent". (Daily Dispatch 5/7/1991).

Whether "getting the economic fundamentals right" will in fact attract new or returning FDI in future is, of course, an open question. But, as the authorities correctly assess, unless this framework is in place, no amount of new-found political acceptability is going to create FDI. Unfortunately, as Kahn (1991b:15) has stated: "Confidence building is an asymmetric process - it is very easy to destroy confidence but it takes a long time to reverse it".

4. TRADE AND INDUSTRIAL POLICY

4.1 The Broad Historical Background

The macro-economic environment and general policies towards industry are far more important than policies which are targeted specifically at FDI (Hughes and Seng, 1969). The impact of foreign trade and industrialisation policies of host countries on FDI has been the subject of considerable controversy. In South Africa, the relatively poor performance of the economy in recent years has sharpened the debate over trade and industrial policy. The open nature of the economy, and a growing realisation that the foreign exchange earnings of mining will not always be available to cross-subsidise manufacturing, has increased the importance of the role of foreign trade and trade policy in generating industrial growth in South Africa. Broadly speaking, the policy adopted up to about 1970 can be described as one of unadulterated import substitution, especially in the field of consumer goods, which was originally aimed at solving the unemployment aspect of the "Poor White" problem by protecting local industry. Since the 1960s this has also been supplemented by measures designed to combat the threat of sanctions; and the sanctions themselves have been a form of artificial protection.

Since the late 1960s and early 1970s the belief has grown that opportunities for further large-scale private sector import substitution have run out (Reynders, 1972; Kleu, 1973; McCarthy, 1988), and attention has shifted to export promotion

as an alternative source of market growth. This has resulted in a twin-pronged approach of continued *ad hoc* protection and "targeted" export development assistance (see Nedbank, 1991 for a useful summary), culminating in the General Export Incentive Scheme of 1990 (Holden, 1990b). It is not yet clear, however, whether the direction of causation in South Africa runs from growth in exports to growth in manufacturing or the other way round, though Holden (1990c) argues that from 1947 to 1970, "manufactured exports failed to stimulate manufacturing output while the growth of manufactured output promoted the growth of exports" (p.364). In the period since 1968, Holden argues that causality was bidirectional, with exports and industrial growth reinforcing one another.

In the mid-1980s, industrial and trade policy underwent a further change, with the emphasis being placed on inward industrialisation, in terms of which it is argued that industrial growth should be based on the growth of domestic demand rather than on either exports or import substitution (Mercabank, 1986). Some reasons for this shift have been put forward by McCarthy (1988):

"In the mid-1980s a combination of developments in South Africa, such as pessimism on export-oriented growth in the face of sanctions, insufficient opportunities for viable import substitution, increasing capital intensity of production, disinvestment, the restrictions on the availability of foreign capital and especially increasing black urbanisation .. culminated in (the policy of) 'inward industrialisation'." (p.20)

4.2 Some Theory

On a theoretical level, Bhagwati (1978) has argued that, *ceteris paribus*, FDI will have a greater positive impact in the long run on those countries pursuing an export promotion strategy than on those pursuing an import substitution strategy. The reasoning behind this hypothesis is twofold. Firstly, by forcing LDCs to follow lines of comparative advantage more FDI is attracted than under the artificial and temporary inducements of tariffs and quotas. In other words, foreign firms are looking for permanent rather than temporary competitive advantages. Balasubramanyam (1984) finds support for this hypothesis based on a sample of LDCs for the period 1967-1978, although the data he used did not take into account licensing, etc.

Secondly, Bhagwati reasons that the welfare costs of foreign capital inflows under import substitution strategies are greater than those associated with export promotion owing to the tariff-induced misallocation of resources. As pointed out in Chapter 1 and Appendix 1, this is a theoretical argument based on an extension of the theory of domestic distortions. Although no empirical study exists as to whether this has occurred in South Africa, Holden (1989:17) has estimated that over the period 1978 to 1987 the terms of trade effect on economic welfare was positive and equal to 0,81 per cent of GDP. Unfortunately, the results of this study do not allow us to isolate the effects of tariff distortions from other influences on the terms of trade. From a broader welfare

perspective it is nevertheless obvious that in recent years South Africa has been subject to much greater negative external shocks via interest rate and exchange rate movements, than as a result of changes in the terms of trade (see Holden, 1989). The possible existence of tariff-induced misallocations of resources does however suggest that a strategy of import substitution needs to be carefully monitored, and the theory clearly shows that is imperative to tax foreign profits.

In addition, apart from the influence of distorted factor prices on the choice of techniques referred to earlier, protection leads to X-inefficiency because domestic markets are sheltered from international competition (Knight, 1988; Black, 1990:456). One of the effects of this may be to encourage capital deepening because firms are assured of their profit margins, and will therefore opt for more familiar (capital intensive) techniques, rather than incur the additional costs associated with cost minimising technologies.

Such X-inefficiency is inconsistent with the accepted view that the basic goal of MNCs is global profit maximisation. Balasubramanyam reconciles this inconsistency by arguing that MNCs operate in many separable markets, almost like a price discriminator. At the same time, MNCs have limited human resources of varying quality, and he suggests that the poorer quality management can be accommodated by using labour-saving technologies. This relatively inefficient method of production is only possible because of trade protection. By implication, those LDCs pursuing import substitution strategies are likely

to attract FDI that is less efficient, which lowers the potential contribution of foreign firms to the social product. In other words, Balasubramanyam is arguing that X-inefficiency, as such, is not present and that the observed high capital-intensity is merely a method of achieving global efficiency in the allocation of different quality factors. On the other hand, if it were not for protection, this group of LDCs would probably not attract any FDI because less efficient MNCs would not be able to compete internationally. Thus although import substitution strategies are unlikely to maximise the social product of host countries, half a loaf is perhaps better than none.

A study by Holden and Holden (1981) shows that export industries in South Africa are more labour-intensive than import-competing industries. Since export industries use the relatively abundant factor of production - labour - more intensively, it might be concluded that economic growth generated by export promotion enhances welfare more than import-substitution. On the other hand, it is uncertain whether an export promotion policy can be successfully pursued in the light of the intensification of international competition and the high cost structure present in South Africa (IDC, 1990).

4.3 Present Trade and Industrial Policy

As far as general industrial policies are concerned there are three issues of particular importance to FDI. These are trade

and protection policy, the regulatory system, and state enterprises.

South Africa's trade regime is characterised by large inter-sectoral differences. As pointed out in Chapter 2, manufacturing has been protected relative to mining and agriculture. For example, Holden (1990a) has estimated that when the price of gold is included in the price of exports, 71 per cent of the protection given to importables is shifted in the form of an implicit export tax onto exportables. McCarthy (1988) estimates that the effective protection afforded manufacturing averages 30 per cent. According to the Bureau of Economic Policy Analysis (1990), the effective rates of protection (ERPs) are also highly dispersed between manufacturing sectors (see Table 2.12). Whether tariffs are important instruments of protection is however debateable in view of the wide array of non-tariff barriers (NTBs) that have been legislated. These include import tax surcharges, various prohibitions on imports, import quotas, import licensing, local content regulations, etc. As a result of these non-tariff barriers the system of protection is opaque and the magnitude of import barriers is difficult to measure accurately.

Apart from the necessity of monitoring import tariffs, the reliance on NTBs imposes additional bureaucratic burdens on the system of trade regulation. The system is extraordinarily complex and pervasive, and almost certainly as important an obstacle to the development of an efficient manufacturing sector as the strategy of import substitution under present

conditions. The effect of various regulations is that firms contemplating importing or exporting have to comply with an enormous range of bureaucratic requirements. The costs of this are impossible to quantify but they are nevertheless important. A good part of the problem is the uncertainty which surrounds the conflicting objectives of macroeconomic stabilisation policy on the one hand, and trade and industrial policy on the other. The priority accorded stabilisation policy means that arbitrary *ad hoc* adjustments to both tariff and NTBs are frequently made.

An indication of this type of problem is contained in the following extract from Business Day (1 July 1991) which focuses on one fiscal aspect of the introduction of Phase VI of the local content requirement for motor manufacturers, in terms of which import penalties are expected to be offset by export rebates (see Bell, 1989). As this extract explains, motor manufacturers have responded to the new Phase VI programme more rapidly than the government expected with the result that export rebates now exceed import penalties, thus forcing the Board of Trade and Industry to impose a temporary and unexpected tax on vehicles in order to balance the fiscal books. In other words, motor manufacturers are being penalised for being too efficient in terms of Phase VI regulations.

"Toyota CE Bert Wessels has warned that an increase above the 70% local content requirement for motor manufacturers will create problems and could lead to more price increases for cars ... Wessels welcomed Trade and Industry Minister Org Marais' recent statement that Phase VI would be finalised in

September. Constant adjusting of local content targets by the Board of Trade and Industry (BTI) had up to now prevented manufacturers from formulating a long-term strategy under Phase VI ... He said the success of manufacturers under Phase VI had left government unable to balance its excise account with the motor industry ... Last year the BTI imposed a temporary 2.5% *ad valorem* duty on vehicles to compensate for a R64m shortfall in government revenue in the fiscal year to March, after export rebates due to manufacturers outstripped import penalties, Wessels said ... The additional 2% *ad valorem* duty announced in June would compound the problems faced by the motor industry, causing additional cost pressures and making it difficult for car-makers to keep price increases for the year to below inflation." (p.1)

Bureaucratic complexities also bedevil the formulation of consistent trade policy as a result of the separation of advisory and implementary functions. Hence, there exists a Board of Trade and Industry (a semi-autonomous non-statutory advisory body) and the official Department of Trade and Industry, which implements tariff and NTB policy. Unfortunately, the views of the two institutions often conflict. For example, in recent years the department has been critical of the board for being too interventionist, and for recommending cumbersome and complex structural adjustment programmes. The level of conflict between the department and the board depends largely on the views of the incumbent Minister of Trade and Industry, and the role of the board in shaping economic policy-making is prone to fluctuate as a result. In addition, the government has commissioned, and is now studying, a report on the Modification of Protection Policy prepared by the Industrial Development Corporation (IDC) (1991).

Broadly speaking, the department favours generalised export incentives, whereas the board (and now the IDC too) prefers targeted or selective intervention. Argument exists over the expense and vagueness of current (targeted) export incentives. At the same time, although the IDC report envisages a fundamental re-structuring of industry away from the import replacement strategy of the sanctions era to an outward policy designed to make industry more competitive internationally, the board continues to get four or five applications a week for increased tariffs (Financial Mail, 5/7/1991). In addition, with sanctions no longer a threat, the board is likely to be more confident of approving protectionist measures, even if they run counter to the spirit of GATT.

A final outstanding feature of industrial policy has the prominent role of state enterprises. As noted above, the policy of import substitution instituted in the 1920s had as one of its main objectives the eradication of the unemployment aspect of the "Poor White" problem. Since the 1960s this has also been supplemented by measures designed to combat the threat of sanctions, which resulted in so-called "strategic industries" (Cooper, 1983). A principal means by which these objectives have been pursued is via state enterprise, principally because the projects undertaken were either too risky or uneconomic for the private sector to contemplate. The Reserve Bank publication South Africa's National Accounts, 1946 to 1990 (1991) includes figures for gross domestic investment which give some indication of the extent of this state enterprise since the war. On average, according to Table 15 of this

publication, public corporations account for 16,9 per cent of gross domestic investment during this period, much of which is concentrated in institutions like ISCOR, ESCOM, SASOL and ARMSCOR (Knight, 1988).

Although these institutions were originally state funded, on the whole an attempt has been made to run them according to market principles, but in practice this has not always been possible and some large losses are still being carried. The effect of this has been to introduce scope for X-inefficiencies, though it is not clear whether this is the result of firm-level inefficiencies or government-imposed constraints. There are also important implications for the pattern of FDI because MNCs have been excluded from sectors in which they might otherwise have invested. Indirectly, the presence of public corporations in an industry may also have discouraged potential FDI, in view of state support for firms in which they have a direct stake (for example, import licensing arrangements, and price controls).

On the other hand, with privatisation of the public corporations now well under way, the recognition by government of the need for a more aggressive technology policy and the increasing readiness of MNCs to deal with South Africa, at the least on a joint venture basis, many of the problems associated with extensive state ownership may fall away. A good deal of the progress which could be made in this regard, depends, of

course, on the nature of the economic policies that will be followed in the New South Africa (see below).

5. TAX POLICY

A particular area of concern is where tax concessions are present. As was pointed out in Chapter 1, the taxation of foreign capital is the most important and potent single weapon in host-country armouries, the corollary of which is that the major benefit of foreign capital is the revenue it brings into the state coffers. Tax concessions thus considerably reduce the benefits accruing to host countries and weaken their bargaining position. In addition, the theory of economic policy suggests that it is much more sensible to tax profits directly, rather than indirectly by imposing conditions on the use of local supplies, local labour or local share capital. Rather than artificially (and temporarily) increasing MNC profit levels, governments should encourage MNCs to lower costs by drawing resources from wherever in the world they are cheapest, which they cannot do if regulation interferes with their commercial operations. Galbraith (1978) and Streeten (1972:227) are not alone in arguing that it is not sensible to seek the inter-country transfer of income "by attempting to transform the MNC from what it is - a profit-seeking animal - into something it is not - a public service".

Apart from being theoretically unsound, evidence from many studies suggests that, in practice, fiscal incentives simply do not work (Lim, 1983; O.E.C.D., 1983; Balasubramanyam, 1984, 1991). In addition Helleiner (1989:1468) has observed that: "Tax holidays and other incentives offered by developing countries appear to have largely offset one another (where they have not been nullified by home government policies or other influences), leaving the overall flow and pattern of FDI basically unchanged". Defensive host country reactions have reduced the net benefits of FDI, and compounded the situation.

Balasubramanyam (1984) argues that many LDCs offer tax concessions to compensate for their low resource endowments and labour skills, and to offset other disadvantages and risks inherent in investing in their countries. However, he says that these incentives appear to be of little significance in attracting FDI because most MNCs regard them as too volatile and transitory, and tax holidays as illusory and pointless since they are usually given to firms during the early years of their operations, when they are least likely to be profitable. Based on interviews with MNC management, Frank (1980) and Hughes and Seng (1969) report that MNCs regard market size, growth potential, political stability, and the availability of infrastructural facilities as the crucial variables in their investment decisions. This conclusion is consistent with the pattern of FDI location found in the Third World, where a limited number of countries meet these criteria. It is also consistent with experience inside South Africa where fiscal incentives to promote decentralisation have not been

successful. According to the United Nations Centre on Transnational Corporations' publication entitled Transnational Corporations in World Development (1988:80), capital inflows to the developing world were unevenly distributed, with only eighteen countries accounting for eighty-six per cent of FDI flows in the 1980s.

There is also little clear-cut evidence to support the contention that fiscal incentives are responsible for biasing FDI towards "inappropriate" capital-intensive techniques, and towards inherently capital-intensive industries (Balasubramanyam, 1983). Our survey (see Chapter 3) found little difference in choice of techniques between local and foreign firms. According to this survey the most important determinant of choice of technique was firm size not ownership or factor prices.

The capital deepening of recent years is related to product and factor market conditions, and in particular general economic policies which have distorted these conditions. The conduct of monetary and exchange rate policy (negative real interest rates and over-valued exchange rates), and of fiscal policy (generous depreciation allowances) in South Africa during the 1970s and 1980s lowered the market price of capital relative to its true social opportunity cost, despite the increase in the cost of imported capital goods. The point to note though is that this capital deepening is the result of general policies, and not those aimed specifically at FDI.

6. POLICIES SPECIFICALLY AFFECTING FDI

Generally speaking, the South African government has maintained a supportive attitude towards all foreign investment, including FDI, while at the same time stressing its national sovereignty. For example, the Franzen Commission Report (1970) states that:

"The government ... welcomes foreign investment and, in formulating economic policy, will endeavour to retain a favourable investment climate for foreign-controlled enterprises. On the other hand, the government would also appreciate the creation of more opportunities for South African participation in the management of foreign-controlled enterprises. The government, however, cannot allow foreign capital to be invested in such a manner or in such amounts as will enable foreign control to be exercised over the whole economy or over certain strategic sectors." (cited in C. Jenkins (1985:154)).

On the other hand, borrowing Hirshman's (1958) terminology, C. Jenkins (1985:154) argues that as a group foreign-controlled firms in South Africa have been too "mousy". In other words, she argues that they have not exerted pressure on the state for fundamental social change. This view is debateable in view of the fact that disinvestment is itself a form of pressure for change, although it is unclear whether foreign firms have disinvested for political or economic reasons. Because of disinvestment and capital flight in recent years, the state's bargaining position vis a vis FDI has been considerably weakened. Renewed access to international credit lines and I.M.F. funding (Business Times, 22 December, 1991) is likely to bolster the bargaining position of the state.

South Africa has no history of direct subsidisation of FDI in the form of tax credits or similar incentives, although the authorities have at all times maintained their commitment to the unimpeded repatriation of foreign profits, dividends and royalty payments. Some foreign investors have also located their operations in areas which qualify for decentralisation benefits, in which case they have been able to reap higher profits. However, as pointed out in Chapter 2, only a small proportion of foreign firms have actually located in these areas, and the current package of decentralisation incentives is in any event being phased out, although there has been some speculation that they may be replaced by export processing zones or the like (Ministry of Constitutional Development and Planning, June 2 1989).

On the contrary, foreign profits are subject to a 15 per cent non-residents or withholding tax. During the disinvestment era, as a method of encouraging disinvestment from and discouraging foreign investment to South Africa, the U.S. ended the double-taxation agreement with South Africa, which meant that U.S. firms were faced with an additional 34 per cent tax in the U.S. irrespective of whether profits were repatriated or not. This measure, together with the elimination of any tax credits (15 per cent on royalties and 10 per cent on interest), was a strong motivation to terminate operations in South Africa rather than run them down gradually. Obviously this legislation will fall away in the post-sanctions era but it is

evident that there is an awareness of the important role tax policy can play in the encouragement or discouragement of FDI.

Unlike many developing countries, South Africa also has no history of imposing domestic ownership requirements on foreign investors, although it does encourage local equity participation in terms of local borrowing regulations (see Chapter 3).

A policy that has a direct bearing on the cost of FDI is that of maintaining a two-tier exchange rate. This exchange rate system is primarily designed to protect the level of foreign reserves against fluctuating capital flows, but, at the same time, as long as the financial rand is at a discount to the trade-related commercial rand, it has the effect of increasing the cost of FDI by artificially increasing profits and dividends. Whilst it may not be possible to unify the rand in the foreseeable future, it must be recognised that both in terms of the balance of payments and the welfare of the country as a whole, a two-tier system represents a costly method of attracting foreign capital.

The main object of economic development in the 1950s and 1960s, as perceived in the expanding body of specialised literature on the subject at the time, was economic growth through capital accumulation. The obstacles to growth were seen to arise less from technological backwardness *per se* as from two sorts of economic constraints - the savings-investment gap and the import-export gap. There was no systematic consideration

either of the impact of technical progress on development or of how such change took place or could be aided. In this sense, the view of the role of technology in economic development has undergone a revolution, and as we have pointed out in several places in this study, the current view is that technology transfer to developing countries is a vital component of the FDI process, if not the most important single contribution of the FDI package.

Empirical research conducted during the last two decades has called into question the classic view that dependence on foreign technology is one of the principal restraining factors on development (UNCTAD, 1976). This research has focused attention on the economic and technological feasibility of domestic capital goods production in developing countries. The emerging consensus is that the viability of such production is circumscribed by global technological imperatives, and that more emphasis needs to be put on the diffusion and acquisition of foreign technology. Experience drawn from late industrialising nations shows that FDI is paramount in this respect, although the process of technology transfer must clearly be monitored to prevent abuse and to keep private and social costs as close together as possible.

Although the incorporation of technological dependence in estimations of FDI penetration levels increases these levels considerably, particularly in heavy industry, as we saw in Chapter 2, South Africa is on average less highly penetrated than most other countries at comparable stages of development.

In this respect there is no foundation for arguing that South Africa has an enclave or branch plant-type economy. Similarly, the hypothesis that MNCs are less likely to undertake R and D expenditure than local firms is not supported by our investigations.

As far as the question of technology transfer is concerned, the department of trade and industry (DTI) (1990) has submitted a draft report to the Minister of Trade and Industry which recognises the important role FDI has to play in the overall strategy of promoting technology in South Africa. This report recommends that the government take active steps to promote the transfer of technology, notwithstanding any restrictive conditions that licensing agreements may contain. It also recommends that in order to promote locally developed technology in the private sector, the government should provide cash incentives to lower the risk and cost to individual companies. Somewhat belatedly, the government has nonetheless recognised the urgent need for the more rapid development of an active technology policy underpinned by government support on a selective and targeted basis. "An example of this form of stimulation is the programme of support for innovation in the electronics industry to which an amount of R40 million per annum has been allocated for five years (DTI, 1990:17).

In time this policy must be extended to support the overall development of the capital goods industry, of which technological capability is a crucial part. The lead in this must

be taken by the private sector, a principle which the government recognises and supports, but state support is crucial, especially in providing a scientific infrastructure to boost local research and development. To this end, the draft report also recommends the establishment of industrial parks, the reorientation of the education system towards science and engineering, and the rationalisation of existing tertiary education facilities (see also Justman and Teubal, 1991).

Despite the danger that increased use of foreign technology may lead to further capital deepening, this is unavoidable if South African exports are to be competitive, and in this sense, even if capital intensive techniques are used, they may be regarded as "appropriate". The problem of capital deepening should rather be addressed by appropriate interest rate / exchange rate and tax policy. Capital deepening is a function of factor prices not technology imports.

A positive spin-off from the disinvestment era was the *de facto* unbundling of the FDI package which resulted from the methods used by many foreign firms to "disinvest" (see Innes, 1989). As this experience has shown, as long as patent and intellectual property rights are protected, and no restrictions are placed on licence fees, etc., technology can be obtained. Arguably "unbundling" may be an expensive method of acquiring technology (Balasubramanyam, 1984) but for countries like South Africa with dubious track records, it represents perhaps the only method. For the firm seeking to acquire the technology, the incremental cost of reproducing the same technology with

its own technical capabilities may be several multiples of the transfer cost.

As outlined above, the level of foreign reserves has historically been the binding constraint on macroeconomic policy making. In recent years this has been reinforced by capital flight. The overarching policy requirement is thus the reversal of the outflow on the capital account. In this respect FDI holds little or no promise because it is a limited source of foreign capital at the best of times. The authorities thus need to concentrate on re-establishing foreign creditworthiness and to open up new foreign credit lines, whilst simultaneously encouraging joint ventures. Although there is a need for both capital and technology, this can and perhaps should be obtained from diverse sources, especially if MNCs are reluctant to commit funds. Under these circumstances, reinvestment by MNCs is largely superfluous, providing that there is access to international capital markets and official lending agencies.

7. FUTURE PROSPECTS

One could write at length about the future prospects for existing and potential FDI in South Africa, but the imponderables are so many and so great that it is impossible to be specific. However, certain important policy conclusions stand out.

As pointed out above, macroeconomic policy exerts a stronger influence on FDI than trade and industrial policy. In this connection, the outflow on the capital account can only be reversed if investor confidence is restored. In the peculiar circumstances present in South Africa this requires not only sound monetary and fiscal policies but also a political solution that defuses the threat (perceived or otherwise) to personal security and property posed by continued violence. It also requires clarity on the issue of nationalisation and expropriation.

A possible solution to the need for clarity could be found in the formulation of an investment code which sets out attitudes towards FDI in particular and foreign investment in general, and establishes guidelines for monitoring FDI as well as guarantees on the repatriation of profits and royalties. Certain labour organisations have called for such a code with a view to imposing more stringent controls over FDI than exist at present. The National Union of Metalworkers of South Africa (NUMSA) resolved at the union's 1991 annual congress that its umbrella body the Congress of South African Trade Unions (COSATU) should urgently draw up a draft code of investment which would "direct investment in favour of the 'working masses' and exclude speculative financial or property investment" (Daily Dispatch, 25/6/1991). The views of labour organisations may not be representative, but the call for a code of investment makes good sense, and the same principle applies to the issue of nationalisation and expropriation, the

protection of intellectual property rights, and the free transfer of profits, licence fees, etc. Foreign investors need clarity on the course of future economic policy before they will consider investing in South Africa.

However, even assuming that South Africa remains capitalist, it is unlikely that a return to political stability will be sufficient to induce large-scale private foreign investment given the subcontinent's dubious history. The question is whether this actually matters. As long as technology is accessible in the form of joint ventures, licensing agreements, etc., there is little need for FDI capital inflows as such. In any event, the major source of foreign capital is bank lending. As the events of the disinvestment era have clearly demonstrated, access to foreign bank lending and to international agencies like the I.M.F. is more crucial to development than investment by MNCs. For countries like South Africa with a history of political instability and fluctuating economic performance, the unbundling of FDI is an efficient and rational response on the part of both MNCs (who are looking to minimise risk) and host countries (who are looking to maximise the potential contribution of FDI to development). FDI via the financial rand is also more "expensive" than bank lending as a source of development capital.

As far as trade and industrial policy is concerned, there is a clear need to simplify the existing tariff structure and to produce a consistent tariff policy. The frequent changes in tariffs in order to accomplish macroeconomic objectives in

recent years, has imposed an unnecessary burden on the manufacturing sector (Cooper and Hartzenberg, 1992). Future policy making must, if possible, avoid this trap. The scrapping of the system of decentralisation benefits is one example of this, although it was by-and-large unsuccessful as a means of attracting FDI. As we argued above, specific tax breaks and subsidies are not an efficient means of attracting FDI and are to be avoided wherever possible. A possible way of improving the terms of trade *vis a vis* FDI in the New South Africa is by increasing non-residents tax, or by introducing specific taxes on non-productive speculative financial or property investment. Another way might be to encourage joint ventures by imposing domestic ownership requirements.

Some commentators are of the opinion that the dual exchange rate should be done away with as soon as possible (Meyer and Vorhies, 1991), but a basic requirement for removing the two-tier system is long term political stability as the mid-1980s experiment with a unified exchange rate demonstrated. It makes no economic sense removing the system and then having to reintroduce it a few months or years later, a move akin to closing the stable door after the horse has bolted. Such changes in "the rules of the game" are potentially more destructive than leaving the system as it is, even if it is inefficient.

The financial rand mechanism could be a useful way of channelling investment funds into specific sectors, although

this would make the financial rand market narrower still. It would be extremely foolish to abolish the present system without first securing access to the IMF as a lender of last resort, especially since the \$6.6 billion of foreign debt held by the Public Investment Corporation in the wake of the 1985 standstill would flow out through the commercial rand (Business Times, 14/7/1991). This would cause a corresponding drop in reserves with disastrous consequences for the exchange rate and inflation.

As far as the attitude of MNCs is concerned, two principal factors are plainly emerging. The first is that despite the erosion of economic sanctions and disinvestment on an official government level, several non-governmental and state and local government bodies have declared that they will continue to support policies to isolate South Africa, at least until they are satisfied with the constitutional outcome of the current negotiations. This has been called a "guerilla-style" sanctions campaign and "local foreign politics". The point is that many MNCs will be reluctant to reinvest if public opinion in their home countries remains hostile to South Africa. MNCs are likely to be more sensitive to grassroots opinion than governments, especially in the U.S. where a strong anti-South African lobby exists. Perhaps European MNCs will be more prepared to reinvest in which case the pattern of trade and investment established during the disinvestment era will be reinforced.

The second principal factor, already implicit, if inoperative, in many licensing agreements, is that the New South Africa is seen as a "gateway to Africa". South Africa is generally perceived as a reliable supplier with a strong comparative advantage in African markets. Although the African market is small in global terms, fierce competition for foreign markets is likely to stimulate FDI in general and joint ventures in particular. This view of South Africa as an export platform is compatible with the government's commitment to an export promotion trade policy, but it also calls for the close monitoring of licensing agreements that may preclude exports. The likelihood of continued political instability and the threat of nationalisation will combine to discourage an inflow of foreign direct investment but this need not matter if foreign loan finance is available in conjunction with joint ventures.

APPENDIX 1IMMISERIZING GROWTH, FOREIGN CAPITAL AND TARIFFS :POLICY IMPLICATIONS

The theory of immiserizing growth is usually associated with the foreign distortions that are present in the large country case. In this case the growing country is a price maker in world markets (as a result of the distortions), and domestic growth, under free-trade conditions, causes a deterioration in the international terms of trade and consequently in the attainable level of welfare (Edgeworth, 1894; Bhagwati, 1958).

It is less well known that domestic distortions may also cause immiserizing growth, even in the small country case (Johnson, 1967), though Johnson himself did not use this term. In recent years many trade theorists have examined this more general cause of immiserizing growth in the context of a variety of domestic distortions (Bhagwati, 1968; Bhagwati and Brecher, 1980; Bhagwati and Tironi, 1980; Brecher and Diaz Alejandro, 1977; Brecher and Findlay, 1983; Jones, 1984; Neary and Ruane, 1988; Sechzer, 1988; Tsai, 1987). Despite this evidence of interest in domestic distortions as the cause of immiserizing growth, the policy implications have been largely neglected by most authors. The aim of this paper is to examine the policy implications of arguably the most important domestic distortion, namely tariff protection (Chacholiades, 1978). For analytical clarity we shall examine only the small

country case of tariff protection in order to avoid confusion with foreign distortions which are simultaneously present in the large country case when tariffs are levied¹.

As Johnson (1967:153) points out, as a result of a tariff, additional factors of production (especially capital, which is more mobile internationally) are attracted to the sector in which the host country does not have a comparative advantage. This misallocation causes additional welfare losses over and above those directly associated with tariff-induced distortions under initial free trade conditions. If this waste of resources is greater than the increase in potential output per head, immiserizing growth will occur.

In general, this possibility depends on the tariff rate, the nature of the factor used intensively in the protected sector, and the elasticities of substitution between factors. Capital inflows into capital-intensive protected sectors are a particular problem because as Corden (1974:334) points out, in the simple Heckscher-Ohlin-Samuelson model, with no factor or trade reversals, a country that is a net capital importer must have capital-intensive importables so that protection will induce capital inflow. The reason for this is that a country is likely to import that product which is intensive in the country's relatively scarce factor, and if the country imports capital, then, presumably, its scarce resource is capital.

FOREIGN CAPITAL, TARIFFS AND TARIFF REVENUE

Many countries attempt to attract foreign capital by means of tariffs although a production subsidy would be less costly (Corden, 1957). In line with the theory of noneconomic arguments for protection (Dixit and Norman, 1980), in this situation it is not possible to follow a first best solution to the problem of endogenous distortions, which would entail elimination of the tariff. A second best solution must therefore be sought. We argue here that this is achieved by transferring the tariff revenue as a subsidy to the exportables sector (specifically to that factor disadvantaged by protection) instead of returning the tariff revenue as a lump sum to consumers (Brecher and Diaz Alejandro, 1977; Chacholiades, 1978).

As part of an optimal tax package, this reduces the need for further distorting taxation, and is particularly relevant to developing countries where the role of tariffs as a source of revenue is significant (Cordon, 1974:78; World Development Report, 1988:84). Whether this transfer from consumers to producers is welfare-superior will depend on the tariff rate, consumer preferences and the elasticities of substitution between factors. In principle, the resulting level of welfare may even exceed the free trade pre-inflow level in contrast with the Brecher and Diaz Alejandro (1977) results, although the free trade post-inflow level is unattainable because the distortion in consumption remains.

This situation can be analysed with the help of Figure A.1. Before the capital inflow, the small country, which provides tariff protection to its capital-intensive import-competing industry, produces at P_0 and consumes at C_0 . The domestic (tariff-inclusive) terms of trade (given by the absolute slope of parallel broken lines, d_0 , d_1 , d_2 , d_3 and d_4) is lower than the fixed world terms of trade (given by the absolute slope of parallel unbroken lines f_0 , f_1 , f_2 and f_3). The capital inflow causes the transformation curve to shift outwards to $U'V'$. If we assume that the tariff revenue is transferred to consumers only, production shifts to P_1 , where the real value of production at fixed world prices is lower than at P_0 , because P_1C_1 lies everywhere inside P_0C_0 . This reflects overspecialisation in the wrong commodity induced by the combination of the tariff and the capital inflow.

Consumption shifts to C_1 , which lies on a lower community indifference curve than C_0 . If the tariff did not exist, production and consumption would have occurred at P_2 and C_2 , respectively, before the capital inflow, and at P_3 and C_3 , respectively, after the capital inflow. As a result of the tariff-induced distortion, capital accumulation reduces welfare.

However, if the tariff revenue is transferred to producers of exportables as a production subsidy, the production point could in principle shift to P_3 as a result of the capital accumulation. The real value of production at fixed world

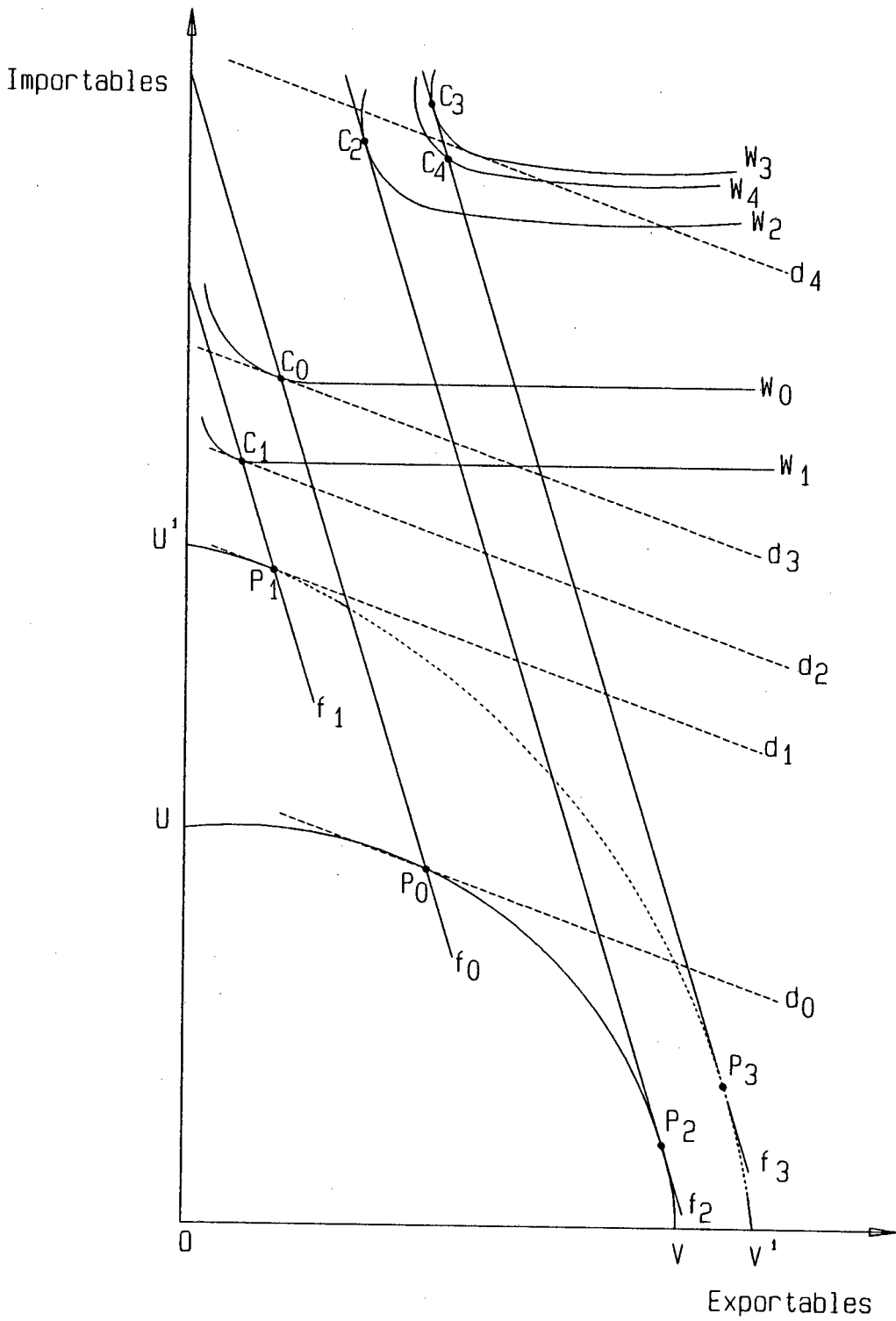


Figure A.1
 Foreign Capital, Tariffs and Tariff Revenue:
 Welfare Implications

prices is considerably higher at P_3 than P_1 and is even higher than that prevailing at P_2 . The existence of the tariff implies that the free trade post-inflow level associated with C_3 is unattainable, but the tariff-distorted consumption point C_4 still represents a higher level of welfare than the initial level C_0 .

POLICY IMPLICATIONS

The policy implications of this are quite striking. Whilst a first best policy response remains the elimination of tariff, if this is not possible, the second best policy response is to transfer the tariff revenue to producers of exportables in the form of a production subsidy. Depending on the extent of this transfer and the slopes of the income-consumption and Rybczynski curves (not shown), the tariff-induced production distortion can be completely eliminated, leaving only a divergence of domestic and international prices in consumption. Dixit and Norman (1980:156) express this point in the following way:

"If various elasticities and marginal propensities are in suitable ranges to be determined, it is possible for the income effect of the tariff revenues to outweigh the Stolper-Samuelson price effect ... Thus we can secure a Pareto improvement at home even in the absence of any other redistributive tools".

Whether this new equilibrium represents a higher or lower level of welfare than the free trade pre-inflow equilibrium is thus an empirical rather than theoretical issue. But this new

equilibrium will always be preferable to the one in which the tariff revenue is transferred lump sum to consumers.

Furthermore, the post-inflow equilibrium may be welfare-superior to the pre-inflow position, tariff distortions notwithstanding. In terms of Brecher and Diaz Alejandro's (1977) analysis of the three effects contributing to immiserization, the first two, which refer to the static and dynamic welfare implications of capital accumulation in the presence of tariffs, are greatly diminished, whilst "the loss arising when foreign profits are subtracted to determine national income" (p.317) remains the same. In terms of their Figure A.2, reproduced here, (in which they summarize the welfare implications of their paper and other literature on tariffs, capital accumulation and immiserization) the curve TAMM'D represents the pattern of tariff-induced welfare changes, on the assumption that the tariff revenue is redistributed to private consumers in the form of lump-sum transfers.

In Figure A.2, F denotes the free trade welfare level. T is the welfare level when a tariff is imposed without any foreign capital inflow. Brecher and Diaz Alejandro show that the inflow of capital will initially diminish the welfare of the host country, from T to A. Only when the inflow is large enough to extinguish the host country's imports (point A) will the welfare level start rising owing to the Stolper-Samuelson effect, from A to M, the free trade welfare level. If the

Home
Welfare

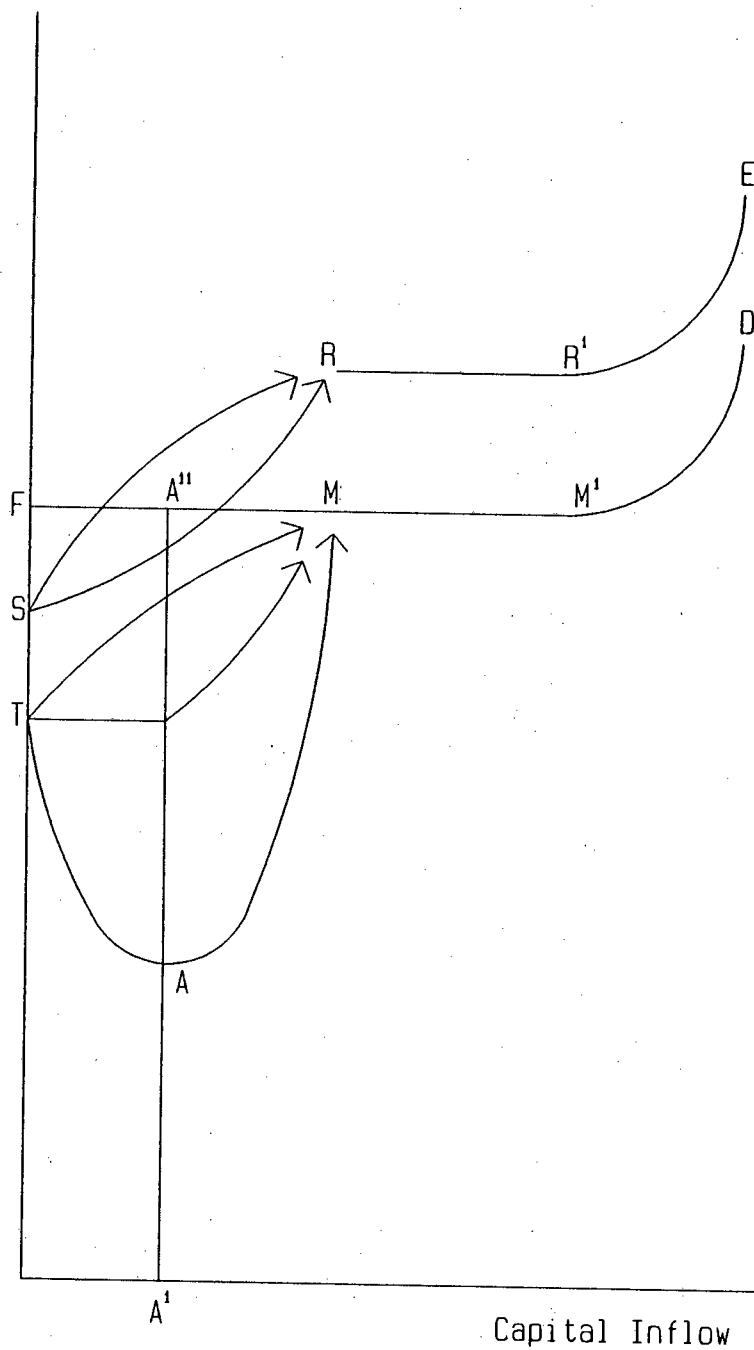


Figure A.2
Foreign Capital and Host Country Welfare:
A Summary

inflow continues to such a degree that the host country achieves complete specialisation in the capital-intensive imported commodity, then its welfare rises again (M'D) as shown by MacDougall (1960) (see Tsai, 1987).

The introduction of a transfer of tariff revenue to exporters as a production subsidy changes this pattern, so that the distance FT is reduced and the curved section TAM rises (rather than falls) from the vertical intercept, if we assume that foreign profits remain untaxed but less than the post-inflow gain. This result shows that a production subsidy to exporters paid out of tariff revenue will always be welfare-superior policy to that based on lump-sum transfer of tariff revenue to consumers. This is illustrated in Figure A.2 by the curve SRR'E which shows that the level of welfare may move to R (from S) through any vertical point which lies above TAM.

To some extent, this result is similar to the findings of Srinivasan (1983) and Tsai (1987), who have extended the basic $2 \times 2 \times 2$ model to analyse the welfare implications of introducing non-traded goods, an extension which requires the dropping of the assumption of a constant goods:price ratio, which underlies the Rybczynski Theorem. The effect of this is to make possible a positive post-inflow welfare impact, depending on the size of relative increases in the prices of non-traded goods and in wages. Under these circumstances, point A (which corresponds to the capital inflow just large enough to extinguish home imports) need not be the lowest

point on the curve TAMB'D, and may even lie above the level of welfare consistent with T. According to Tsai, the host country's level of welfare may move to M (from T) through any point on the vertical line A'A" in Figure A.2. In our case, although the standard Rybczynski Theorem applies, the elimination of both static and dynamic production distortions, produces similar, if stronger, results.

CONCLUSIONS

The conclusions derived by Brecher and Diaz Alejandro, regarding the welfare impact of a small increase in foreign investment in the import-competing capital-intensive sector, need modification when the distribution of the tariff revenue is an issue, which from a policy viewpoint it always is. In fact the argument here is that, taking the tariff as a binding constraint on policy, the optimal (but second best) policy is to subsidize producers of exportables from the tariff revenue rather than return it to consumers as a negative income-tax. Whilst this may not enable a small host country to attain Pareto optimality, it prevents unnecessary further policy-induced distortions, and thus immiserization on the scale envisaged by Brecher and Diaz Alejandro.

Endnotes:

1. Johnston (1967:154) is at pains to draw the distinction between foreign and domestic distortions. In fact he refers to "immiserizing growth" only in the context of foreign distortions. In the case of domestic distortions he prefers the term "income-reducing growth", which occurs under conditions in which foreign distortions are excluded by assumption. The clearest way to do this is to distinguish between "large" and "small countries".

APPENDIX 2SURVEY METHOD

The research method used to gather empirical information on FDI in host countries is determined largely by the purposes of the investigation. The well known study by Reuber (1973) was, for example, devoted to a cross sectional study of several countries, and the questionnaire method of gathering information was supplemented by many other secondary sources. Many other studies, before and after, have adopted this approach when the objective was/is to examine the overall impact of FDI on a host country's economy. It allows one the opportunity to investigate the distribution and penetration patterns of FDI, and hence to pass comment on overall trends and levels that are intrinsic to issues raised by allegations of "dependency". It also allows one the opportunity to examine the empirical validity of theoretical arguments about rates of return, concentration, the balance of payments life-cycle (also called the transfer problem), linkages, etc.

Although this approach has many advantages, the issues have often become unmanageably large and complex, requiring a micro rather than macro approach. This can of course be accommodated alongside the type of cross-sectional study described above by using case studies at the firm or industry level. These can be very useful, and, indeed, the detailed focus that is often required to get at the root of the differences-

according-to-ownership problem necessitate it. At the same time, though, one loses the large picture, and such case studies usually become illustrative of the types of costs and benefits encountered, whilst saying little about the macro impact of FDI on the entire economy. So, conversely, what one recoups on the swings is lost on the roundabouts.

A few of the more remarkable studies, such as those of Lall and Streeten (1977), Biersteker (1978) and Evans (1979) have successfully bridged this gap in various ways. Jenkins (1990:206), in particular, is of the view that "the conventional cross-sectional analysis of the behaviour of firms is a poor guide to the impact of FDI on host countries and that longitudinal industry studies are a more fruitful approach for future research". It is, however, doubtful whether one can dispense entirely with the input from evidence beyond the firm and industry. We also need to know about the pattern of outputs and industrial linkages that characterise the host economy, quite apart from associated problems of balance of payments disequilibria, etc.

It seems then that there is no one "best" method of capturing the essence of the problem, and a wide variety of competing methods are still in evidence in the literature (Cardoso and Dornbusch, 1989). As pointed out above, the method chosen must be determined by the ends in mind, and in practice by the resources available. These resources expressed in terms of time and money often play a disproportionate role in this

determination. We all have to cut our clothes according to the cloth available.

In the case of this study, a data base on the number, size and sectoral affiliation of foreign firms operating in South Africa was constructed for some of the analysis in Chapter 2 and it formed the basis of the selection of firms in the questionnaire survey in Chapter 3. Ideally, all of the firms selected (both foreign and local) should have been interviewed on a personal basis but this was impracticable given their dispersed locations and the time it would have taken. The second best option of a postal questionnaire was instead adopted, and after a pilot study of six firms (three local, three foreign) in the East London area, questionnaires were sent out to one hundred and twenty firms (sixty local, sixty foreign). These firms were matched for size and sector in an attempt to reduce the probability of exogenous factors influencing our results. It was decided to limit the sample to one hundred and twenty in order to preserve the matching of pairs of firms within size and sector categories.

After a follow up questionnaire had been sent we ended up with fifty three usable replies, a return rate of forty four per cent, which was regarded as satisfactory for this type of survey, especially since the nature of the information that we asked for could be construed as sensitive to the firms themselves and perhaps the national interest. In fact, a further twenty one respondents replied that much as they

wanted to take part in the survey, they were constrained by company policy from doing so, or felt it was prudent not to. Of these twenty one, seven were able to provide some information, but insufficient to render their returns usable.

The stratification of the sample referred to above was based on the distribution of FDI in manufacturing in 1990 as revealed by our data base. Accordingly, one third of the sample was drawn from fabricated metals, machinery and equipment, one third from chemicals, rubber and plastics, one sixth from textiles, clothing and leather, and one sixth from other sectors. One tenth of the sample was drawn from firms employing between 51-300 people, and another one tenth from 301-500 employees. A fifth was taken from firms employing between 501-1000 employees, a quarter from the category 1001-3000, a further one fifth from 3001-5000, and lastly three twentieths from firms employing more than 5000.

Unfortunately, the pattern of returns was unevenly distributed according to firm size and industrial sector, leaving many "cells" with nil returns or with only either foreign or local firms, and in some other cases with only a small (one or two) number of firms that were matchable. So although the initial selection of local and foreign firms was on the basis of a stratified random sample, the small absolute number of returns that we eventually had to work with precludes any claim to representativeness. The only solution to this problem is to construct a larger sample or even include the entire universe of foreign firms in a survey. The results of our comparison

of foreign and local firms must then perforce be tempered by the recognition that the influences of size and sector have not been eliminated, except in some cases where we have been able to isolate the differences between firms according to sector. Notwithstanding these limitations we believe that the results of the survey provide a useful outline of the impact of FDI in manufacturing, although we also recognise the need to supplement this information with that from other sources.

The second part of this appendix contains a copy of the questionnaire itself as well as of the letters sent to firms.

QUESTIONNAIRE FOR THE STUDY OF FOREIGN DIRECT INVESTMENT
IN THE SOUTH AFRICAN MANUFACTURING SECTOR

RHODES UNIVERSITY

Contact Phone No: Howard Cooper 0431 - 22539 / 28315

QUESTIONNAIRE FOR THE STUDY OF FOREIGN DIRECT INVESTMENT
IN THE SOUTH AFRICAN MANUFACTURING SECTOR

Where necessary please ring the correct answer.

PART 1 : General Information

1. Name of firm:

2. Name and position in company of respondent:
.....

3. Contact telephone number:

4. Address of head office (if different):
.....
.....

5. Does your firm have any foreign shareholding, or is it subject to any foreign control? Yes/No
If yes, please indicate:

a) % of foreign share holding%

b) whether subsidiaryYes/No

c) whether licensing onlyYes/No

d) other; please specify

.....
.....

PART 2: Investment Background

1. Was your firm established by:
 - a) setting up new facilities
 - b) acquiring existing facilities
 - c) forming a joint venture with
 - i) other private firm(s)
 - ii) the public sector

2. Was your firm initially funded by:
 - a) transfer from parent firm overseas
 - b) debt raised locally
 - c) equity raised locally
 - d) a combination of the above; please specify
 -
 -

3. Have you built additional productive capacity since starting production?

Yes/No

If yes, was this funded by:

 - a) transfer from parent firm overseas
 - b) debt raised locally
 - c) equity raised locally
 - d) reinvested earnings
 - e) a combination of the above; please specify
 -
 -

PART 3: Choice of Technology

1. What percentage of your plant and equipment is imported?%

2. Are local substitutes available? Yes/No

If yes, what are your reasons for using imported plant and equipment? Please specify:

.....

3. If an innovation (a new product, production process or machine) is introduced from overseas, does your firm make adaptations and modifications to suit local conditions? Yes/No

If yes, is this owing to:

- a) differences in the size of firms in South Africa and overseas
- b) differences in labour costs
- c) Differences in capital costs.
- d) differences in the availability of technical staff
- e) a combination of the above; please specify

4. Is your firm currently using

- a) more
- b) less
- c) about the same

capital per worker than in the past?

4/If more,

If more, please rank below the importance of:

	Less	Not
Important	Important	Important

- a) higher labour costs
- b) more stringent quality control required
- c) shortage of skilled labour
- d) inflexible production techniques
- e) industrial action, strikes, etc.
- f) other, please specify:
-

5. Does your firm carry out research and development? Yes/No

If yes, approximately what percentage of your firm's budget is allocated to research and development%

6. Does your firm have technological ties or licensing agreements with foreign firms? Yes/No

If yes, please (i) specify the nature of the contract, i.e. does it include tie-in clauses or export restrictions, etc.

.....
.....
.....

(ii) specify the basis on which contract or license fees are determined:

.....
.....
.....

PART 4: Trade

1. Approximately what proportion by value of your firm's inputs are imported?
2. Approximately what proportion of your firm's turnover by value is exported?

PART 5: Employment and Labour Relations

1. Approximately what proportion of production have you lost annually on average over the last 5 years as a result of industrial action?
2. Does your firm have any recognition agreements with trade unions? Yes/No
3. Please indicate below by means of crosses the importance to your firm of the following factors in wage determination over the last 10 years:

	Very Important	Quite Important	Not Important
--	-------------------	--------------------	------------------

- a) trade union pressure
- b) codes of conduct
- c) shortage of skilled labour
- d) eradication of job reservation
- e) other (please specify)

.....

.....

4. What is your firm's general wage policy for
- | | going wage rate | higher % | lower % |
|-------------------------|-----------------|----------|---------|
| a) management | | | |
| b) semi-skilled workers | | | |
| c) unskilled workers | | | |
5. What proportion of your total budget is allocated to social responsibility programmes (e.g. educational and housing programmes, etc.)
-%

PART 6 : FOREIGN FIRMS ONLY TO ANSWER

1. Was your firm set up to:
- a) supply the local market
 - b) supply foreign markets
 - c) circumvent import tariffs on your firm's exports to South Africa
 - d) take advantage of lower local costs
 - e) compete with other local firms
 - f) compete with other foreign firms
 - g) take advantage of government incentives
 - h) other reasons; please specify
-
-
-

2. Does your firm receive some form of protection or incentive from the government? Yes/No
- If yes, which of the following forms does it take:
- a) tariffs on imports that compete with your products
 - b) quotas on imports that compete with your products
 - c) remission of tax or duty on exports
 - d) reduction of company tax (tax holiday)
 - e) accelerated depreciation allowances
 - f) other forms; please specify:.....
-
-

3. If your firm's import requirements are substantial, is this because local suppliers are:

- a) not available
- b) not competitive
- c) not up to quality specifications
- d) other, please specify:

.....

4. Does your firm in South Africa use approximately the same ratio of capital to labour (or capital to output) as your parent firm?

Yes/No

If no, is this explained by:

- a) differences in the size of firms
- b) differences in labour costs
- c) differences in capital costs
- d) differences in the availability of technical staff
- e) Other; please specify:

.....

5. Does your firm manufacture the same product range as your parent firm?

Yes/No

If no, please specify why this is so:

.....

6. Does your parent company have a specific strategy regarding
- a) sourcing of inputs Yes/No
 - b) marketing of output Yes/No

If yes, please specify:

.....

.....

7. Have any local suppliers, distributors or competitors come into being as a result, direct or indirect, of your activities? Yes/No
- If yes, approximately how many?
- Approximately how many jobs does this represent?

8. What proportion of local senior management positions is filled by local personnel?%

RHODES UNIVERSITY

EAST LONDON

Telephone 28315/22539



P.O. BOX 7426
EAST LONDON 5200
SOUTH AFRICA

DEPARTMENT OF ECONOMICS

14 January 1991

The Financial Manager

Dear Sir

As part of my doctoral dissertation on foreign investment in South Africa, I am canvassing manufacturing companies on a number of pertinent issues such as their general investment background, choice of technology, trade links etc. Please note that no financial disclosure is required - the questions are all of a general nature.

Both local- and foreign-owned companies have been selected to take part in this project, and the information gathered will be treated as strictly confidential. Your company's name will not be disclosed. I have included a stamped, self-addressed envelope for the return of the attached questionnaire. Experience gained during a pilot study shows that it should not take you more than fifteen minutes to complete.

If you have any questions about this survey please contact me at East London (0431) 22539 or 28315.

I look forward to hearing from you in the near future.

Yours faithfully



HOWARD COOPER
SENIOR LECTURER

HC/db

RHODES UNIVERSITY

EAST LONDON

Telephone 28315/22539



P.O. BOX 7426
EAST LONDON 5200
SOUTH AFRICA

20 February 1991

DEPARTMENT OF ECONOMICS

1~
2~
3~
4~
5~

Dear Sir

As part of my doctoral dissertation on foreign investment in South Africa, I am canvassing manufacturing companies on a number of pertinent issues such as their general investment background, choice of technology, trade links etc.

On the 14 January I sent you a questionnaire to complete as part of this project. In case it did not reach your desk or has been misfiled etc., I have taken the liberty of including with this letter a copy of the original questionnaire for your attention.

As before I must reiterate that the information will be treated in the strictest confidence, and furthermore you will notice that no financial disclosure is requested.

If you have any queries about this survey please contact me at East London (0431) 22539 or 28315.

I hope to hear from you in the near future.

Yours faithfully

HOWARD COOPER
SENIOR LECTURER

HC/db

APPENDIX 3

DIRECT AND INDIRECT IMPORTS AS A RATIO OF
TOTAL OUTPUT BY SECTOR, 1971, 1985

SIC	Sector	1971			1985		
		Direct ¹	Indirect ²	Total	Direct	Indirect	Total
311	Food Processing	0.069	0.022	0.091	0.075	0.040	0.115
313	Beverage Industries	0.032	0.053	0.085	0.066	0.048	0.114
314	Tobacco Products	0.163	0.047	0.210	0.075	0.014	0.089
321	Wool and Textiles	0.372	0.199	0.571	0.163	0.106	0.269
322	Clothing	0.092	0.203	0.295	0.021	0.075	0.096
323	Leather & leather products	0.286	0.077	0.363	0.132	0.055	0.187
324	Footwear	0.107	0.101	0.208	0.136	0.090	0.226
331	Wood and wood products	0.223	0.085	0.308	0.075	0.072	0.147
332	Furniture	0.005	0.079	0.084	0.010	0.029	0.039
341	Pulp and Paper	0.235	0.106	0.341	0.182	0.081	0.263
342	Printing and Publishing	0.149	0.070	0.219	0.199	0.083	0.282
351	Fertilizers, plastics and petroleum	0.426	0.077	0.503	0.235	0.061	0.301
352	Chemical products	0.194	0.115	0.309	0.254	0.077	0.331
355	Rubber products	0.169	0.131	0.300	0.138	0.068	0.206
356	Other plastic products	0.126	0.166	0.292	0.078	0.093	0.171
362	Glass and glass products	0.324	0.122	0.446	0.336	0.040	0.376
369	Non-metallic minerals	0.053	0.070	0.123	0.058	0.071	0.129
371	Iron and steel basic industries	0.175	0.097	0.272	0.047	0.051	0.098
372	Non-ferrous metal industries	0.138	0.056	0.194	0.073	0.024	0.097
381	Metal products	0.128	0.073	0.201	0.123	0.043	0.166
382	Machinery, except electrical	0.188	0.243	1.431	1.073	0.225	1.298
383	Electrical machinery	0.527	0.191	0.718	0.726	0.155	0.881
384	Motor vehicles	0.695	0.313	1.008	0.071	0.543	0.614
385	Transport Equipment	0.569	0.151	0.720	1.329	0.202	1.531
386	Other Manufacturing	1.007	0.062	1.069	0.847	0.038	0.885

Source: Input-Output Tables, 1971, 1985, Government Printer, Pretoria.

1) See Equation 12

2) See Equations 13 and 14

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