HUMAN RESOURCE DEVELOPMENT: *A SINE QUA NON*[1] FOR FOREIGN DIRECT INVESTMENT IN SOUTH AFRICA

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1. INTRODUCTION

Foreign Direct Investment (FDI) refers to net inflows of investment from abroad to acquire a lasting management interest (10 per cent or more of voting stock) in an enterprise operating in an economy other than that of the investor. FDI has three components: equity investment, reinvested earnings and short and long term inter-company loans between parents and foreign affiliates. In 2001 the total volume of FDI flows across the globe amounted to US $ 1.3 trillion. FDI supplies capital and provides for spillovers of foreign technology and know-how to host economies. This may aid growth and development

FDI remains vitally important for South Africa, indeed for the whole of Sub-Saharan Africa, to obtain sufficiently high economic growths so as to reduce unemployment and poverty. The South African challenge is clear from the following. Between 1994 and 2000 the average annual, economic growth was only 2.7% and substantially below the target of 6% identified in the Growth, Employment and Redistribution (GEAR) macro-economic strategy as necessary to start making inroads into unemployment. Despite sharp depreciation in the Rand exchange rate in 1996, 1998 and 2001 strong and sustained export growth did not yet take place. Employment in the private sector declined by 15% between 1994 and 2000 and the unemployment rate (broadly defined) is estimated at 37%.

One of the major reasons for South Africa's slow growth is the poor investment response by the private sector. Indeed South Africa is investment constrained with investment by private business that stagnated since 1994 and is now (at 10.7% of GDP) lower than in 1994. Especially disappointing was the poor inflow of FDI after 1994 and in comparison to other developing countries, South Africa received very little FDI inflows since 1998. In this South Africa share the broad African experience: despite the fact that returns on FDI in Africa was almost 60% higher than that in other developing regions during the period 1990-94[2], it attracted less than 2% of all flows to developing countries by 1995 (roughly US $2bn. Per annum, exc. South Africa) (see Jaspersen, *et al.*, 1998; Bhattacharya, *et al.*, 1996).

We argue in this paper that one of the major reasons for the slow inflow of FDI into South Africa since 1994 is due to the country's inadequate supply of human capital. It is important to note at the outset that physical and human capital work in a complementary fashion – if human capital cannot – due to inappropriate human resource development – compliment physical capital, investment will be reduced. Gries (1995a,b) analyses the role of human capital accumulation in the international allocation of goods and capital and finds that if human and real capital are complements, the domestic availability of human capital may determine the rate of domestic physical investments.

The degree to which human capital can act as a complement to physical capital depends in part on the skills of the labour force (Gries, 1995a). A skill relates to the ability to use a certain technology. Technologies are embodied in capital goods: A certain capital good embodies a certain technology by the productive

[1] **sine qua non** \sin-ih-kwah-NON; -NOHN; sy-nih-kway-\, *noun*: An essential condition or element; an indispensable thing; an absolute prerequisite.

[2] Since 1990, the rate of return in Africa has averaged 29 per cent; since 1991, it has been higher that in any other region, including developed countries as a group.

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properties of the machinery. Hence the technology defines the link between human capital and real capital. This fixed link implies that a country with a certain human capital stock and structure will efficiently employ the adequate stock and structure of real capital. As such human resource development strategies could play an important role to complement the investment promotion activities of the South African government and its investment promotion agencies (IPAs) by providing human resources with the appropriate skills.

The paper is structured as follows. In section two the FDI profile for South Africa is given. Section three discusses the determinants of FDI. Section four introduces human resource development as a crucial determinant for FDI. Section five concludes with an assessment of South Africa's human resource constraints (from an FDI view) and makes some recommendations for a human resource development strategy that will assist the government and its IPAs in attracting FDI to South Africa.

2. THE PROFILE OF FDI IN SOUTH AFRICA

In 1996 the South African government adopted the GEAR macro-economic strategy. It replaced the inward-looking and interventionists policies of the Apartheid government. The GEAR macro-economic strategy seeks to make the private sector the engine of growth and to fully integrate the South African economy into the global economy. In particular, the South African government has substantially liberalized international trade with the aim of expanding job creation through export-led growth and higher FDI.

As stated by the DTI (TISA; see website www.tisa.org.za) key tenets of the GEAR-strategy that are aimed at presenting an attractive and viable investment destination to foreign investors include fiscal deficit reduction, trade and foreign exchange rate liberalization, the restructuring of state assets, and the promotion of skills and development. These are all recognized to be necessary conditions for increased flows of FDI. In addition, South Africa has made courageous efforts to open up the domestic economy to international competition through:

- The lowering of tariff barriers, ahead of the WTO timetable agreed to in 1994;
- A market related and competitive exchange rate;
- The conclusion of FTAs with SADC and the EU and the expansion of these in the near future to Mercosur countries.

In an opened-up, global market place, South African firms need to improve their competitiveness if they are to survive and prosper. A proper understanding of the very concept of competitiveness (see below) suggests that improving the competitiveness of South Africa as a location for firms should be an important pillar of South Africa's economic development strategy. According to the overall ranking of the WEF in its annual ACR, South Africa is ranked the 7th most competitive country in Africa[3].

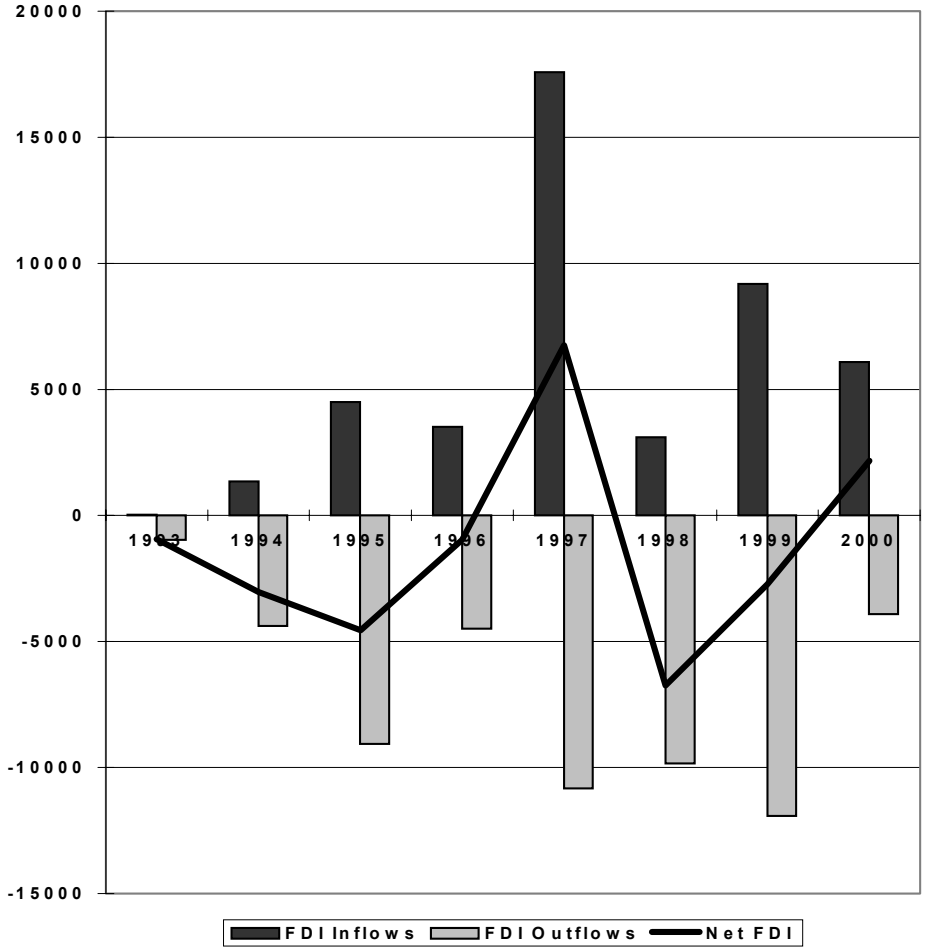
The performance of the South African economy since the adoption of GEAR has been disappointing. Economic growth rates during 1998-2000 were below the projected 4% in GEAR – and more around 2.7% as noted in the introduction. According to TIPS (2000:5) the basic reasons for this disappointing growth is due to poor investment rates, "*especially foreign direct investment which has failed to materialize in the quantities expected*". Between 1998 and 2000 the volume of FDI into South Africa was in the region of US$ 3 billion (less than 1% of total world-wide FDI flows). Not only has South Africa's absolute levels of FDI inflow been low, compared to other developing countries the inflows are also low. Between 1994 and 1999 South Africa attracted $32 per head of FDI inflows, compared with $106 for Brazil, $252 for Argentina and $333 for Chile. Furthermore, between 1994 and 1999 more capital left South Africa than flowed into the economy: FDI outflows amounted to $9.8 billion over this period compared to the total inflow of FDI of about $8 billion.

Furthermore, FDI inflows typically contribute roughly 10 per cent of gross fixed capital formation in developing countries world-wide (UNCTAD, 1999). However in South Africa, the ratio of net FDI flows to gross capital formation reached a peak of 6.2% in 1997 and has subsequently declined (SARB, 2001). Net FDI inflows amounted to 6 per cent of gross capital formation in South Africa in 1997, and –5.3 per cent of GCF in 1998, recovering to 1.6 per cent of GCF in 2000. The high levels of FDI in 1997 were achieved with the partial privatisation of state assets: Telkom and the Airports Company among them.

[3] The six most competitive countries in Africa are (in order): Tunisia, Mauritius, Botswana, Namibia, Morocco and Egypt.

Figure 1 below gives a profile of net FDI flows to and from South Africa up until 2000. What is particularly noticeable is that net FDI is particularly volatile, with significant positive and negative spikes.

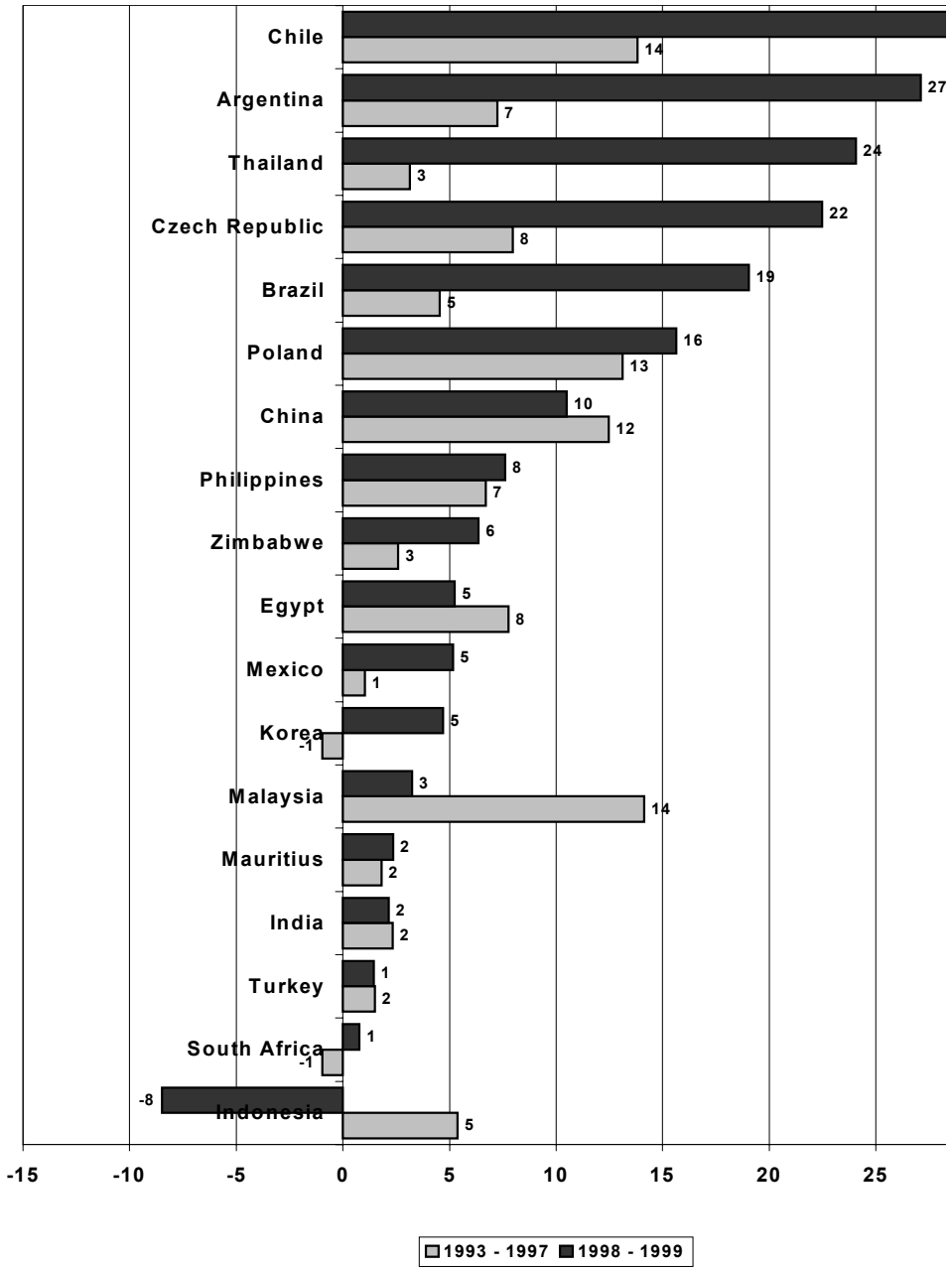
Figure 1: Trends in Net Foreign Direct Investment into South Africa



Source: SA Reserve Bank Quarterly Bulletin

Figure 2 below contains a comparative view on FDI in South Africa. Its shows that South Africa is almost at the bottom of the ladder in terms of the inflows of FDI amongst developing countries.

Figure 2: Comparative shares of average net foreign direct investment inflows both prior to and after the Asian crisis.
Net foreign investment flows are shown as a percentage of gross capital formation



Source of basic data: World Development Indicators

The dominance of East Asian countries in the above graph is noticeable and is something that we will comment on below.

The most important countries of origin (or rather where the firms come from) of FDI inflows into South Africa tend to be (with some minor variation in order of size) the USA, UK and Germany. In recent years Malaysia, Switzerland and Ireland have also been significant investor-countries (see Heese, 1999).

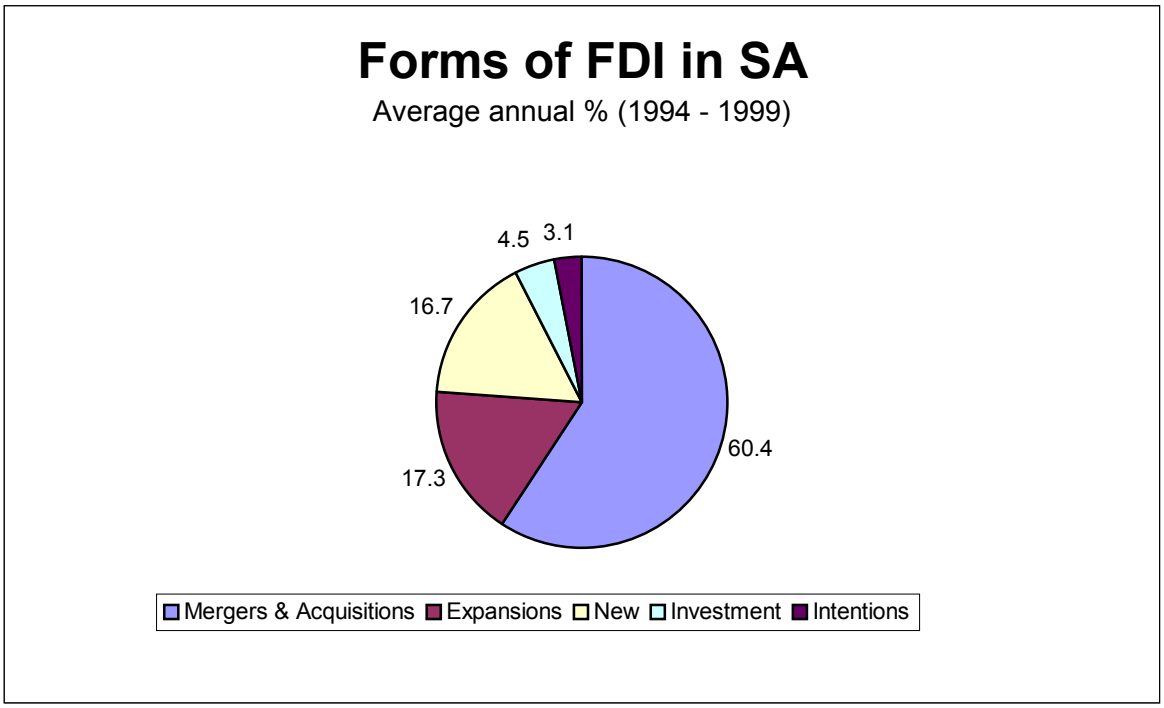
Most post-1994 FDI in South Africa went into the services sector and related industries such as information and communication technology (IT). It should be noted that these sectors are currently underdeveloped in the North West Province. For instance TNCs have found sectors such as transport and transport equipment, telecommunications and information infrastructure to be preferable sectors for investment. According to Cassim (2000:14) this may be because investment in manufacturing in South Africa may not be as attractive

to the type of TNCs as investment in services as that investment in IT and communication in South Africa is driven by the government's deregulation and privatization of the sector[4].

The largest proportion of FDI in South Africa is in the form of mergers and acquisitions, as shown in table 1 below. Thus 60% of South Africa's FDI consist solely of the transfer of existing assets from domestic to foreign firms.

Table 1: Forms of FDI in South Africa (1994-1999)

Form	Average Annual Percentage 1994-1999
Mergers and acquisitions	60.4%
Expansion	17.3%
New	16.7%
Investment	4.5%
Intention	3.1%
Liquidation	-0.6%
Disinvestment	-1.5%



It is often pointed out that there are different types and modes of foreign direct investment. Thus mergers and acquisitions are seen as being less favourable for economic development of a host country than mergers and acquisitions because the latter merely entails a change in ownership and is usually followed by job reductions and restructuring. In contrast, so-called "Greenfield- FDI" brings in new capital and is seen to be better for job creation and growth. Another distinction that is sometimes emphasized is between FDI that intends to supply the domestic market, and FDI that intends to supply foreign markets. The former is often seen as competition for domestic businesses, whilst the latter is not – and generates foreign exchange for a country through its exports. However, it must be noted that domestically oriented foreign investors often have closer links with local firms and can provide useful know-how and other basic technology to local firms. Through this they can enhance the export potential of indigenous entrepreneurs. "Greenfield" type of FDI is thus preferable from a human resource development perspective.

[4] Since 1996/7 the South African government commenced with a privatisation programme that included the partial sale of shares in large parastatals (often in monopolistic positions) such as Eskom (providing electricity), South African Airways, Transnet (in road and rail transport) and Telkom (providing the only land-line telephone service in South Africa. In addition the cellular (mobile) telephone market was deregulated in 1999/2000 with the granting by government of a 3rd licence for a service provider.

3. DETERMINANTS OF FDI

South Africa's (and many other African countries') experience since 1994 shows that free trade/outward-orientation alone is not sufficient to ensure FDI inflows. This raises the frequently asked question about the determinants of FDI. . Wang and Swain (1997) classify host country characteristics into micro-, macro- and strategic determinants of FDI. We will here deal with micro and macro-determinants and we will argue that the lack of adequate incorporation of human resource development as determinant is a significant omission that might explain the lack of predictive power of models build on these determinants as well as the frustrating failure in many countries to attract sufficient FDI using policies and programmes based on these determinants.

3.1 Micro-determinants of FDI

The micro-determinants of FDI are mainly concerned with those location-specific factors that have an impact on the profitability of FDI at firm or industry level. Host country characteristics that influence productivity and cost at this micro-level include market size and growth, labour costs, host government policies and tariffs and trade barriers.

- **Market size and growth**

FDI is likely to be attracted to host countries with large local markets and higher levels of economic development. A large, growing domestic economy ensures the TNC of a market for its product and provides for scale economies (Lucas, 1993). Transaction costs are also likely to be lower (McMillan, 1995).

Evidence from empirical studies provides strong support for the importance of market size as a determinant of FDI. Wang and Swain (1997) surveys a number of early studies from the 1960s and 1970s and concludes that most studies come out in support of the size or growth of the markets in the host countries, as a significant determinant of FDI. In more recent work, Schneider and Frey (1985) and Wheeler and Mody (1992) finds market size to be related to FDI flows.

- **Labour costs**

Labour costs are a clear consideration in a TNC's decision to employ its ownership advantages outside its home country. As wages rise, FDI aimed at low cost, efficient production, tends to be discouraged. Though, as wages rise relative to the cost of capital, there may be a tendency to substitute foreign capital in the place of labour (Lucas, 1993). Firms may also not only be interested in the lowest wages. TNCs may seek skilled labourers and professionals (Veugelers, 1991). Rather than just low wages, it is important that wages reflect productivity (Wang & Swain, 1997). TNCs aim to maximise profits through efficiency gains and/or cost minimisation. A related factor to take into account is that of labour disputes. A given host country is less attractive the greater is the incidence or severity of industrial disputes (Yang *et al*., 2000).

The results of time series and cross-country analyses are also strongly in favour of relative low wages as a significant determinant of FDI flows. Specifically in the case of developing countries, Wheeler and Mody (1992) and Lucas (1993) find a positive and significant relationship between lower labour costs and FDI inflows. Urata and Kawai (2000) ties this in with the nature of the TNC. They find that relative low wages are an important determinant of FDI by Japanese small and medium-sized enterprises (SMEs). The Japanese SMEs produce in neighbouring Asian countries in order to reduce their factor costs. Production is then exported back to Japan. In contrast, larger firms are more concerned with local sales and the size and growth of the host market.

- **Host government policies**

Host government policies are location specific factors that may influence profitability and TNCs' decision to undertake FDI, in a number of ways. Such policies include incentives and performance requirements (UN, 1995).

Host governments often offer incentives to increase the attractiveness of their location. The incentives aim to encourage FDI inflows by reducing costs and making investment more profitable. Specific measures include tax breaks and trade incentives, like duty-free imports of inputs. The incentive schemes are often closely linked to efforts by the host government to encourage investment in export industries, or preferred sectors, or in less developed areas of the country. Most host countries believe that incentive schemes are crucial for attracting FDI, because competing economies have similar schemes.

Related to incentives are performance requirements. A host government can place performance requirements on investors to try to ensure that the benefits of FDI accrue to the country. This takes the form of requirements concerning the hiring and training of local personnel, local content, technology transfer and exporting of output. Where incentive schemes may attract FDI, the interference of government performance requirements may deter it. To negate this possible negative effect governments often link meeting the requirements to fiscal incentives like tax rebates.

The empirical literature, however, finds the impact of government policies to be less straightforward. Helleiner (1989) finds that specific incentives do not have a major impact on FDI flows. Incentives influence the decisions of investors only at the margin. Dees (1998) adds to this, citing a survey according to which investment incentives are only moderately significant for the decision of US firms to invest in China. The evidence does show that removing restrictions and providing good business operating conditions will affect FDI flows positively.

- **Tariff and trade barriers**

The so-called "tariff hopping" hypothesis states that high protective trade barriers make exports by TNCs to a potential host country, uncompetitive. Potential marketing cost savings, from avoiding protectionist barriers, as well as transport cost reductions, encourage TNCs to rather enter the market through FDI and to serve their customers with local facilities (Wang & Swain, 1997). A growing internal market will add to the attractiveness of tariff hopping.

Jun and Singh (1996) tests the tariff hopping hypothesis and finds the relationship between taxes on international trade and transactions, and FDI, to be positive and significant. Yung *et al*. (2000) supports this result but with a different method. Measuring the openness of the Australian economy as the sum of exports and imports as percentage of GDP, they find a negative relationship with FDI. They subsequently argue that FDI inflows substitute for trade, much like the case made in the tariff-hopping hypothesis.

It should be noted that the influence of these location-specific micro-determinants of FDI depends on a number of factors. Firstly, the nature of the investment is important. If the investment is for export production, the expected return from a particular site will depend more heavily upon unit input costs. If the investment is intended to serve the local market, then the size and openness of the market will be of significance. The stage of the product's life cycle, as between a new, mature or standardised commodity may also be of significance. Locations with lower input costs are important when the product is standardised. One or a combination of these factors may tip the balance and encourage a firm to locate production facilities in a particular country.

3.2 Macro-determinants of FDI

The macro-determinants of FDI are the factors that influence profitability and the choice to invest at an economy-wide level. These are the size and growth of the host market and factor prices. Factor prices are in turn influenced by tariffs and taxes. Thus there is much of an overlap with the micro-determinants of FDI, though the emphasis here is on the influence that the general macroeconomic environment has on FDI flows. The effects of the macro-environment are also reflected in a number of additional determinants of FDI. These include openness and export orientation, exchange rates, the inflation rate, budget deficit, domestic investment as well as political risk.

- **Openness and exports**

There are number of arguments linking openness, and exports, and FDI flows. The tariff-hopping hypothesis described in the previous section posits that there is a negative relationship between openness and FDI. Closed economies receive FDI, which is substituting trade. The opposing view is that outward-orientated economies are more successful at attracting FDI. The pressure of international competition makes for higher productivity. An outward-orientated economy is also not handicapped by the size of its domestic economy when attracting FDI – it offers efficiency and access to world markets.

Empirical studies of whether a host country's export orientation may be important for attracting FDI flows find in favour of openness. Lucas (1993) finds that in Southeast Asian countries FDI is more elastic with respect to the demand for exports, than with respect to the aggregate domestic demand. Jun and Singh (1996) states that exports should be included as a control variable because of the higher export propensity of foreign affiliates. They find a particularly strong relationship between exports in general, and manufacturing exports in particular, and FDI. One should however note that the empirical literature raises a causation question – whether FDI flows are attracted to economies that are export orientated or whether FDI leads to increases in exports. Jun and Singh (1996) argues that the relationship is likely to be simultaneous, with current results supporting the general notion that exports precede FDI.

- **Exchange rates**

Related to openness is the importance of exchange rates as a determinant of FDI flows to host economies. There are broadly two lines of thought concerned with the significance of exchange rates as a determinant of FDI: the currency area hypothesis and considerations of exchange rate risk.

The currency area hypothesis argues that firms from harder currency areas are able to borrow at lower costs, and to capitalise the earnings on their FDI in softer currency areas at higher rates, than the local firms. The higher the share of capital value added and the size of the premium on the local currency, the greater the comparative advantage which foreign investors enjoy over local firms and that attracts FDI. Agarwal (1980) however emphasises that this hypothesis has never been empirically tested.

The second line of argumentation takes account of the exchange rate risk to which TNCs are exposed when undertaking FDI and how that influences the decision to locate in a particular country. The nature of the risk firstly depends on the TNCs' activities in the host country. If the TNCs produce for export, depreciation is beneficial, making output more competitively priced. However, if a substantial portion of inputs is imported, depreciation raises costs. Even when the nature of TNC activity is not taken into account, the exchange rate may be important. Large fluctuations in the rate discourage FDI flows, as it increases uncertainty associated with the economic environment of the host country (Urata & Kawai, 2000). The exchange rate also determines the value of repatriated profits. In developing countries a deteriorating exchange rate and foreign exchange position may further threaten restrictions on such remittances, irrespective of what exchange controls are normally in place (Lucas, 1993).

Empirical evidence on the significance of the exchange rate as a determinant of FDI is indeterminate. Studies of the effect of exchange rate devaluation on FDI shows that it depends on whether TNCs in a country are dependent on the foreign market relatively more for the export of their outputs, or for the import of their inputs (Wang & Swain, 1997).

- **Inflation rates**

Where the exchange rate reflects external economic balance or imbalance, the inflation rate is an indicator of a country's internal macroeconomic stability. Increased instability adds to uncertainty and makes investment unattractive. A high rate of inflation is a sign of internal economic tension and the inability or unwillingness of the government and the central bank to balance the budget and to restrict money supply (Schneider & Frey, 1985). This increases uncertainty regarding the business environment. Inflation also increases the cost of production (Urata & Kawai, 2000). Consequently it has a negative impact on FDI flows. This is confirmed by Schneider and Frey (1985), Yung *et al.* (2000) and Urata and Kawai (2000).

- **Budget deficits**

The budget deficit is similarly related to uncertainty and the choice to invest. A high or increasing budget deficit is not a host country characteristic that encourages FDI flows. It is more likely to cause uncertainty regarding the sustainability of the host government's fiscal stance and about what that may imply for the cost and profitability of investment. Empirical work by Chaudhuri and Srivastava (1999) supports a negative and significant relationship between budget deficits and FDI flows.

- **Investment and infrastructure**

FDI supplements domestic capital but it may be argued that the causation also runs the other way: domestic investment crowds in FDI. It does so by increasing productive capacity (Chaudhuri & Srivastava, 1999). In the same way infrastructure creates an enabling environment for foreign investors. It increases productivity and reduces the cost of production, which draws in FDI. Empirical results from Wheeler and Mody (1992), Cheng and Kwan (2000) as well as Urata and Kawai (2000) confirm this relationship.

- **Political instability**

Political instability embodies a variety of concerns, ranging from production disruption to confiscation or damage to property, to threats to personnel, to a change in macroeconomic management or the regulatory environment (Lucas, 1993). Political instability is expected to decrease FDI because it increases uncertainty about the cost and profitability of investment. McMillan (1995) notes that stability may not however have the opposite positive effects. It adds to a general feeling of investment security, but does not have the specific "pull" as strong as that created by market forces.

3.3 Empirical Evidence

Empirical studies produce mixed results on the determinants of FDI. Wang and Swain (1997) find that evidence from surveys of TNCs and their executives support a negative correlation between FDI flows and political instability. Evidence from cross-section studies, on the other hand, shows that political variables are of minimum concern to investors and are generally given the same treatment in FDI decisions as in domestic investment decisions.

Recently many African countries, including South Africa have taken steps to attract FDI by improving their policy frameworks. Efforts include reforms aimed at increasing the role of the private sector in the economy, for example through privatisation. There are also steps taken to ensure and maintain macroeconomic stability, such as devaluation of overvalued currencies and the reduction of inflation rates and budget deficits. African countries are improving their regulatory frameworks for FDI – some 26 of the 32 least developed countries in Africa, surveyed by UNCTAD in 1997, have a liberal or relatively liberal regime for the repatriation of dividends and capital (UNCTAD, 1998). Progress is also being made with trade liberalisation, as well as the strengthening of the rule of law, and improvements in legal and other institutions that matter for the FDI climate. Finally, many African countries are establishing investment promotion agencies and have concluded bilateral investment and double taxation treaties that contribute to the creation of a more secure environment for foreign investors on the continent (UNCTAD, 1995). Though, as the statistics have shown, there has only been limited success in attracting FDI both in Africa generally and South Africa.

In the next section we will argue that not enough emphasis have been given on human resource development as a strategy in itself to attract FDI. The lack of proper and appropriate human resources may therefore be the an important factor currently limiting the flow of FDI to Africa and South Africa.

4. HUMAN RESOURCE DEVELOPMENT AS DETERMINANT OF FDI

In the previous section we had discussed all of the standard textbook determinants of FDI. Governments and their IPAs in designing strategies to attract FDI usually address these determinants. However, we have argued with reference to both empirical econometric studies and the practical experience of South Africa and many other African countries that these determinants may be at most necessary but not sufficient conditions for attracting FDI. Therefore, in this section we argue that the level of human resource development in a country may be a sine qua non for FDI. Our argument is based on both theoretical analyses of economic growth theory and observation and analysis of the success of the East Asian countries in attracting FDI.

4.1 Growth Theory

The traditional neo-classical growth theory of the Solow (1956, 1957), Swan (1956) type regarded technological progress as exogenously given. Technologies are equally available without costs in every country. As a result global convergence is predicted. Countries are expected to converge in per capita income terms to steady states determined by the rate of technological progress, savings and population growth. Testing the traditional Solow model Mankiw, Romer and Weil (1992) found that the effects of the saving rate and population growth are overestimated. Further, the traditional model is not able to explain observable differences in the level and growth rate of income across countries unless unreasonably high capital shares are used. Thus, the predictions of traditional neo-classical growth theory do not correspond with the stylized features of the global growth process.

Therefore, Mankiw, Romer and Weil (1992) introduced a new interpretation. They augmented the standard Solow model by including accumulation of human capital. The emphasis to include human capital is not new. Kendrick (1976) estimated that more than half of the total capital stock of the USA in 1969 consisted of human capital. Introducing human capital Mankiw, Romer and Weil (1992) show that the extended model provides a good explanation of the differences in the countries economic performance. Due to human capital the impact of the saving and population growth rate decrease. Or, to be more precise, if human capital accumulation is included and countries have different rates of accumulation and population growth, the implications of this extended Solow model cannot be rejected easily by the empirical facts.

The key factor in the *"new growth theory"* is human capital. But unlike in the extended versions of the traditional theory, human capital is not just accumulated. The new growth theory has identified human capital as an important factor that induces positive externalities, scale economies and innovations. On aggregate spill overs between firms and the multiple uses of techniques and skills in different fields give human capital almost the character of a public good. These positive externalities affect the production processes and generate increasing returns to scale at the aggregate level. With some special additional assumptions about the production of human capital or the creation of new technological knowledge, these models can generate endogenous growth processes. Technological progress is now endogenously generated.

While a model of endogenous growth was first suggested by Uzawa (1965) the idea of human capital externalities was developed by Romer (1986, 1990a, 1990b), Lucas (1988) and extended and modified by Azariadis and Drazen (1990), King and Rebelo (1990), Rebelo (1991), Grossman and Helpman (1991b) and others. Several causes for *increasing returns* to scale have been introduced (Backus, Kehoe and Kehoe (1992)). For instance Arrow's learning by doing (Arrow (1962)) was used by Lucas (1988, ch.5) and Young (1991). The role of R&D or education as a source of endogenous growth, was suggested by Lucas (1988), Stockey (1991) or Romer (1987, 1990a,b), Grossman and Helpman (1991b), Aghion and Howitt (1992).

4.2 The East Asian Success Story

We have already noted the significant flows of FDI that goes to East Asian countries in figure 2 (see section 2). The figures below shows industrial and export performance of East Asia compared with that of Africa and other developing regions, and also show the extent to which human resource development has been a key ingredient in these countries' performance.

Figure 3: Industrial Performance by Region, 1985 and 1998

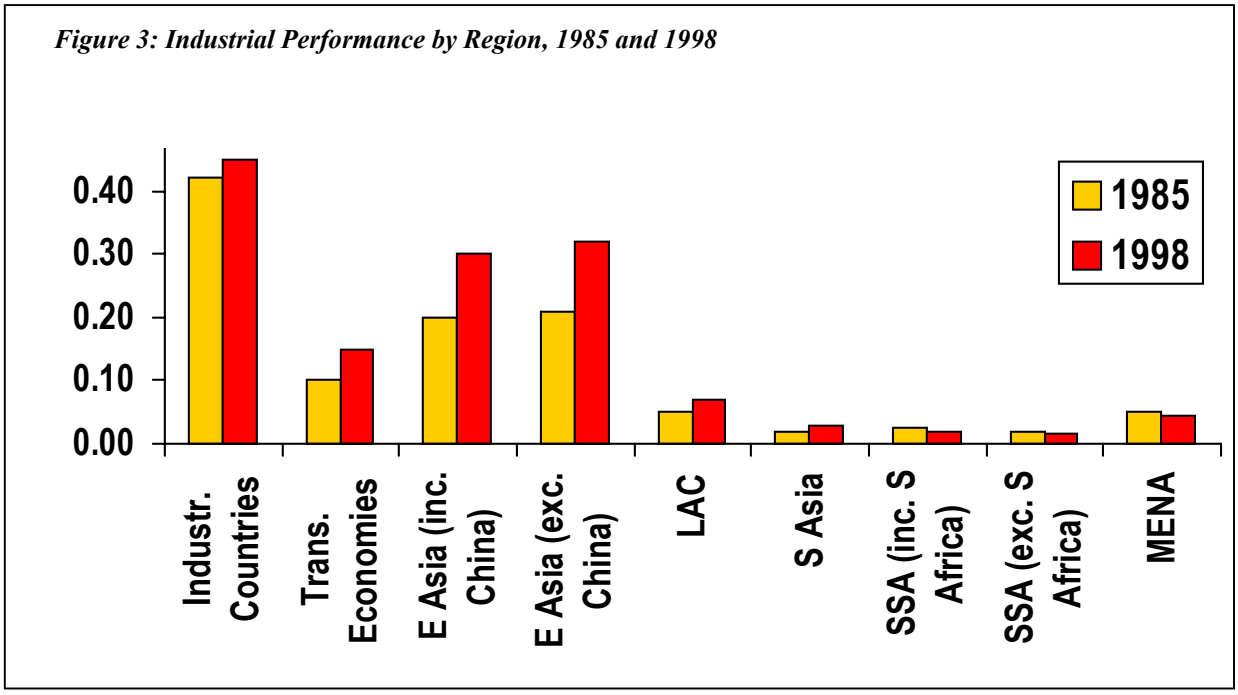
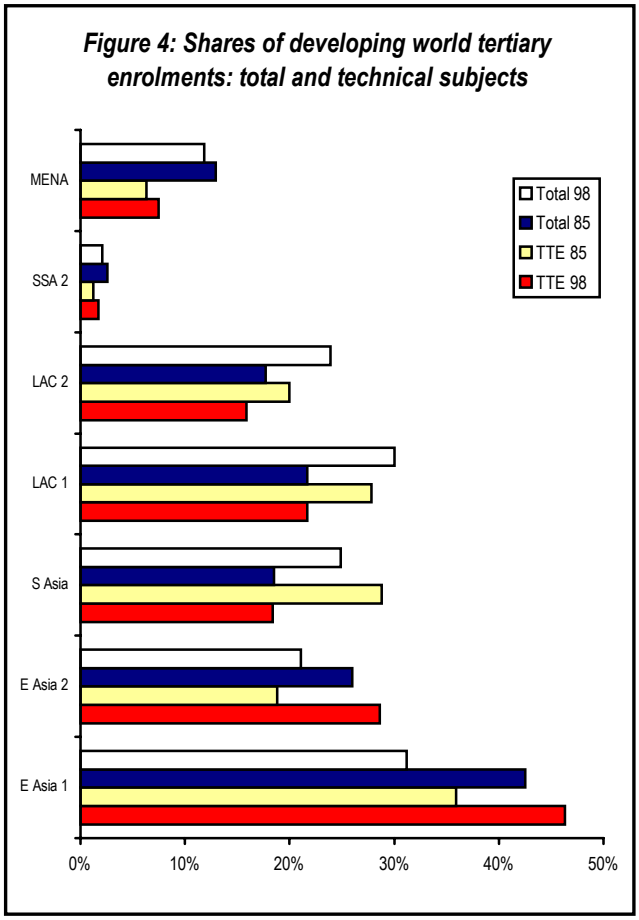


Figure 3 above shows that as far as industrial performance is concerned East Asian countries have made the most rapid progress between 1985 and 1998. In fact in 2001 China was the country with the largest inflows of FDI in the developing world, with US$ 40 billion in FDI receipts.

Figure 4 below is suggestive of the extent to which human resource development has played a role in this industrial performance and attraction of FDI. The figure indicates that by 1998 East Asia's human capital compliment far exceeded that of all other developing regions in terms of enrollment numbers.

Figure 4: Shares of developing world tertiary enrolments: total and technical subjects



In the next section we will conclude by identify the shortcomings in South Africa's human resource development (from a FDI viewpoint). We will make recommendations for a human development strategy that will facilitate the attraction of FDI by the goverment and its IPAs.

5. CONCLUSIONS

We started this paper by claiming that FDI is important in that it can augment a country's investment capital and foreign exchange earnings and so lead to higher economic growth. Moreover, given that the bulk of FDI is through Transnational Corporations (TNCs) it becomes the mechanism through which the world economy is integrated into a global village. Currently annual FDI flows exceed US$ 1 billion. The problem facing South Africa and Africa is the very small trickle of FDI that flows towards them. Less than 2% of all FDI flows go towards Africa, and over the past few years South Africa had experienced disappointing and erratic inflows of FDI.

The theoretical determinants of FDI were discussed in section 3 because these typically form the basis from which countries and the IPAs design investor-targeting strategies. However we showed that these determinants are only necessary but not sufficient conditions, as both econometric studies and the experiences of many African countries (including South Africa) with strategies based on these could not explain adequately the poor FDI flows into South Africa. Based on theoretical considerations of the new growth theory as well as a cursory consideration of the East Asian success in industrialization, exports and FDI attraction (China obtained US $ 40 billion in 2001) we concluded in section 4 that human resources may be an important – if not sufficient – condition to explain the lack of FDI into South Africa and Africa. The new growth theory has identified human capital as an important factor that induces positive externalities, scale economies and innovations**.**

The question know remains: how is South Africa's human resources inadequate – if at all – in terms of the requirements of potential foreign investors. To answer this question we must briefly look at the type of labour, type of skills that are current demanded. In the analysis we will point out that a fundamental reason for South Africa's slow growth, high unemployment and lack of sufficient FDI may be due to the fact that the supply of adequately trained labour has not kept up with the demand.

Firstly, skills are at a premium. According to figures presented by Bhorat (1999:3) the growth in employment of professionals and administrative works (high-skilled workers) grew by over 300% between 1970 and 1995. In comparison, the demand for production workers and agricultural workers (low skilled) declined, by as much as 54% in case of the latter. This trend is consistent with observations made in South Africa that demand for high-skilled workers have increased, to the disadvantage of unskilled jobs.

The growth in demand for higher-skilled workers is consistent with the growth in the services/tertiary sector in South Africa. Bhorat (1999:5) states -significantly- in this regard that "*it cannot be doubted that the onset of the micro electronics revolution, epitomised by greater computer usage, has spurred on this preference within services for higher skilled individuals. The fact that the capital-labour ratios in the service sectors rose by as much as 117% strongly supports this notion*".

Since 1994 both changes in technology and the country's integration into the world economy[5] has had two important consequences for the structure of the South African economy. Firstly, it caused a shift in the sectoral composition in the economy towards service sectors. Secondly it caused a higher average skill requirement within sectors. The share of highly skilled and skilled workers increased from 38% in 1970 to over 57% in 1997/1998 whilst the share of unskilled workers declined over the same period from 62% to 43%. Both of these effects or consequences are reflected in the decline in employment (because of the lower demand for low skilled labour), increasing amount of capital per worker (representing "embodied technology") and increased output per worker. We have shown in section 3 that TNCs have found skill intensive sectors such as transport and transport equipment, telecommunications and information infrastructure to be preferable sectors for investment.

[5] The opening up of the South African economy since 1994 had made technological upgrading an essential response to the need for greater competitiveness in the international market place.

The increases in demand for skilled labour indicated in the figures quoted in the previous paragraph had overtaken the South African economy's supply thereof. Indeed South Africa's poor quality of people is perhaps the foremost factor that lowers its competitiveness. As measured by the IMD's World Competitiveness Report, the quality of people is measured by looking at the labour productivity, literacy rate, and skills. Let us briefly consider each of this in turn.

Regarding productivity: since 1995, although labour productivity (as measured by GDP per employee) grew by 2.5% per annum on average, this was still substantially lower than that of South Africa's main competitors, particularly the NICs of the East such as Taiwan, (4.7%), Korea (4.51%), Hong Kong (3.7%) and Singapore (3.0%). Labour productivity is closely linked to unit labour costs (which is a measure of both changes in the amount of labour used in the production process, as well as charges in the prise of labour). Particularly in manufacturing, rising unit labour costs had resulted in slower increases in labour productivity in South Africa than many other countries. It has been and still is a factor that impinges negatively on South African firms' capacity to compete in international markets on the basis of price.

Between 1972 and 1990, for instance, labour productivity in South Africa's manufacturing grew by only 0.9% on average annually, compared to 9.7% in China, 7.6% in Indonesia, 8.2% in Korea, 5.9% in Taiwan, etc. By 1993 the manufacturing earnings in South Africa were US$ 9088 per annum, compared to a much lower labour cost of US$656 in China, for instance. Neighbouring countries such as Botswana (US$3311) and Zimbabwe ($3550), also offers cheaper labour than South Africa. It would be futile for South Africa to compete only on the basis of labour costs with these countries, or attempt to follow the approach of the current NICs and base export-manufacturing strategy on cheap labour.

South African manufacturing firms, especially in labour-intensive sectors such as food processing, footwear, textiles, furniture, etc., would thus have to remain competitive despite relatively high labour costs. This requires higher labour productivity, through application of high-technology, automation and the like, and of finding manners by which to keep distribution costs as low as possible. These factors imply amongst others that:

- Highly-skilled workers will be in demand and that the demand for unskilled workers will decline further.

- Moves towards supplying the higher-end of the market where quality and service becomes important.

Regarding literacy and skills, the lack of highly skilled labour is particularly problematic in South Africa. The following aspects will serve to argue that it is this lack of sufficiently and appropriately skilled labour, exacerbated by the so-called brain drain that is currently on of the most significant constraints on FDI in South Africa.

- The science and engineering workforce of the country had declined from 3.6% of the total workforce in 1992 to currently less than 2% (Mani, 2001, 17).
- The enrolment in science and engineering course declined from 19% in 1985 to 16% in 1997.
- Estimates of emigration from South Africa over the period 1989-1997 amounts to over 200 000.
- Immigration laws and procedures, especially towards temporary migration of skilled labour, is restrictive and seriously hampers South Africa's ability to source appropriately skilled labour from abroad (Abedian & Antonie, 2001, Eisenberg, 1999).
- A survey of 800 small businesses in the Greater Johannesburg Area (GJA) found that between 30% and 40% reported a skills shortage in 1999. Despite this shortage SME training expenditure declined from an average of R1700 per employee per annum in 1997 to R400 per annum per employee in 1999(Chandra *et al*, 2001b:iv).. Large firms faced a similar problem but in the IT sector 53.8% of all firms had difficulty to find skilled labour (Hodge, 2001).
- The National Enterprise Survey (NES) conducted in 1999 by the President's Office found that the most significant obstacle to further investment in the producer services sector is lack of access to skilled human capital. It is especially this sector that is most severely affected by the "brain drain" : according to a survey by SAITIS (1999) in 1998 31% of IT managers, 29% of programmers and

23% of system analysts left South Africa that year. A survey by ITWweb in 1999 further found that 48% of respondents were likely or very likely to leave the country within the next two years.

- According to Cisco Systems the local skills shortage in IT is forecasted to rise from 33% in 1999 to 62% in 2003.

In addition to the above South Africa's Human Sciences Research Council (HSRC)[6] has recent completed a study on labour market trends and workforce needs in respect of formal employment for 1998 to 2003. The results are not very optimistic. In fact, it suggests that fewer than 50 000 jobs[7] will be created over the next five years, despite the estimated economic growth rate of 2.7%. Jobless growth seems to be a set feature over the next five years. Most job losses will be in semi-skilled and unskilled occupational categories, and the HSRC predicts that the highest growth of job creation will be in the field of information technology (IT), chartered accountancy, engineers (electrical & chemical). Employment is predicted to decline in four sectors, namely mining, manufacturing, electricity and services), increase in three (construction, trade and finance) and stay constant in transport and communications.

The above are all indications that a shortage of skills in precisely those sectors that are currently growing in the global economy (services, IT & high-tech manufacturing) may be lacking in South Africa. The context in which South Africa will have to address these shortages contains two challenges[8] (Van der Berg, 2001:175-177). First, the quality of education varies significantly – most former African schools perform much more poorly than white schools, and in 1998 only 13% of matriculants received university exemption. Secondly, the standards of education and subject choice remain problematic – mathematics and science are severely neglected. For instance only 45% of all matriculation candidates in 1997 wrote mathematics and only 21% passed.

We can now conclude with some recommendations for a human resource development policy for South Africa that will facilitate the efforts by the government and its IPAs to attract FDI.

Firstly, both physical and human capital is important and government programs must recognise this complementarity in developing human resources. In a survey on human capital Hamermesh (1986) states: "Perhaps the most consistent finding is that non production workers (presumable skilled labour) are less easily substitutable for physical capital than are production workers (unskilled labour). Indeed, a number of the studies find that non-production workers and physical capital are p-complements. Therefore Fagerberg (1994) concludes that countries should not invest in either education or physical capital, but in both assets.

Secondly, it is imperative that South Africa's 'Brain Drain" be reversed. The New Partnership for Africa's Development (NEPAD – see www.nepad.com recognises the importance for the whole of Africa in stemming the tide of skilled migrants by for instance provide greater safety and security and reducing crime. The latter is consistently found as a significant determinant of emigration.

Thirdly is it clear that South Africa should adopt a less restrictive policy on the recruitment and immigration of temporary skilled workers from abroad.

Fourthly, the orientation of our education system towards greater emphasis on science and mathematics and on improving the quality of education throughout, are steps in the right direction. This will only be fruitful if the system is oriented more strongly towards needs of industry (demand driven) and if firms take on more responsibility for training of workers. The Skills Development Act is consistent with these recommendations.

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[6] HSRC, 1999: SA Labour Market Trends and Future Workforce Needs.

[7] It must be borne in mind that about 250 000 new jobs (in net terms) must be created annually in South Africa simply to ensure unemployment does not rise. Ideally, 350 000 should be created.

[8] Considering the extent of human capital and fixed investment in South Africa and Africa, it is firstly clear, from public expenditure data, that public investment in human capital, as a share of potentially productive government expenditure to GDP, is high in Africa and South Africa. Province's already spend 85% of their budgets on social expenditure including education, health and welfare. It would thus appear that the provision of education services has not been markedly worse than elsewhere. However, in many cases in Africa and South Africathe implementation of education policies is deficient. Clearly in South Africa the legacy of apartheid is most keenly felt in the lack of adequately skilled labour.

Finally, although space limitations precluded an analysis of the impact of the HIV/AIDS pandemic on FDI, it can be concluded that if human resources are an important determinant of FDI, then any situation that negatively affects a country's stock of skilled human capital will negatively impact on FDI. Thus like violent crime HIV/AIDS not only makes it more expensive to create a job, but it also makes the investment in human capital (through training and efficiency wages) more risky. Understanding this link might explain why Sub-Saharan Africa, the region of the world with the highest incidence of HIV/AIDS, is also the region that attracts the smallest amounts of FDI. Addressing HV/AIDS is therefore a crucial component of any human resource development strategy for FDI.

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HUMAN RESOURCE DEVELOPMENT: *A SINE QUA NON* FOR FOREIGN DIRECT INVESTMENT IN SOUTH AFRICA

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- Age: 43 Years

Professional Experience

CORPORATE SOUTH AFRICA:

Buyer/Manager (1982 – 1991):

Responsible at senior management level for operational, financial and strategic management, control and direction at a leading retail outlet.

International Liaison (1991 – 1993):

Liaison with international investors and businessmen from the former East Block Countries, Russia, Dubai, Saudi Arabia and India. Investment promotion and trade relations as principal objective.

INTERNATIONAL EXPERIENCE:

Hong Kong and Beijing (Resident from 1993 – 1997):

Principal Objectives:

1. Promotion of trade and trade relations between South Africa and China.
2. Promotion of Chinese investments into South Africa.
3. Promotion and identification of bilateral technology transfer opportunities.

Principal Activities:

1. Management and budgetary control of office.
2. Trade and investment promotional visits into all major cities in China.
3. Presentation of investment and trade seminars.
4. Market research and market identification for South African export products.
5. Arrangement of visitor's programmes.
6. Liaison with Chinese Governmental and Provincial Authorities at senior level.

Successes Achieved:

1. Twelve foreign direct Chinese investments to South Africa were achieved.
2. Trade between South Africa and China increased from US $14 million to US $ 1.2 billion during 1994 and 1996.

RESIDENT RSA EXPERIENCE:

China – South Africa Trade and Investment Promotion Centres (1997 – 2000)

Managing Director with principal responsibility for all operational activities, as well as, trade and investment promotion between China and South Africa.

Invest North West (2001 – current)

Marketing Manager

Languages English, Afrikaans, some Spoken Chinese (Mandarin)

Prof. Wim Naudé is Director of Research in the Faculty of Economic and Management Sciences at the Potchefstroom University in South Africa. His field of specialization is the economic development of Africa. He studied at the University of Warwick (UK) where he obtained his M.Sc in quantitative development economics in 1991 and at Potchefstroom University where obtained his PhD in economics in 1993. From 1994 to 1996 he was a lecturer at the University of Oxford and Research Officer at the Centre for the Study of African Economies, Oxford. He also taught at the International Development Centre, Queen Elizabeth House, was Visiting Professor at the University of Addis Ababa, Ethiopia and consulted for the United Nations Development Programme. Since 1997 he is an economic policy advisor to the North West Provincial Government as Board Member of Invest North West. Since 2000 also serves as an elected Councillor on the Southern District Municipality in South Africa.

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