

# A comparability adjustment transfer pricing model

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## Abbreviations

CAPM	Capital asset pricing method
CATPM	Comparable adjustment transfer pricing model
CP	Cost plus
CUP	Comparable uncontrolled price
FDI	Foreign direct investment
GDP	Gross Domestic Product
M&A	Merger and Acquisition
MNE	Multinational Enterprise
NCP	Net-cost-plus
OECD	Organisation for Economic Co-operation and Development
OM	Operating margin
Pli	Profit level indicator
PN	Practice Note - A practice note is a guideline provided by the SARS
PS	Profit Split
RP	Resale price
SARB	South African Reserve Bank
SARS	South African Revenue Service
the Act	Income Tax Act 1962 (Act No. 56 of 1962)
TNMM	Transactional net margin method
UNCTAD	United Nations Conference on Trade and Development

## DEDICATION

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# Opsomming en samevatting van die studie

## Agtergrond

Oordragprysvastelling behels 'n proses waardeur multinasionale ondernemings (MNO) interne pryse van goedere en dienste vastel. Hierdie oordragpryse wat deur die MNO gebruik word het 'n direkte invloed op die wins of verlies wat gerealiseer word in die lande waarin die MNO handel dryf. Indien 'n nie-markverwante prys betaal word vir die oordrag van goedere en dienste sal die wins wat die onderskeie dele van die MNO realiseer uit die transaksie nie in ooreenstemming wees met hulle onderskeie ekonomiese bydrae tot die transaksie.

Sodanig distorsie as gevolg van nie-markverwante pryse beïnvloed winsgewendheid sowel as belasting aanspreeklikheid van die partye tot die transaksie in die lande waar die partye besigheid bedryf. Om manipulاسie van interne pryse binne die MNO wat kan lei tot kunsmatige winste of verliese te beperk is oordragprysvastelling wetgewing wêreldwyd ingestel.

Belasting ooreenkomste tussen lande allokeer die reg om belasting te hef met betrekking tot die winste van 'n MNO. Spesifieke artikels in die belasting ooreenkomste handel oor spesifieke aspekte van internasionale beleasting. Oordragprysvastelling word aangespreek in terme van Artikel 9 wat vereis dat die transaksie tussen lede van die MNO vergelyk moet word met 'n soortgelyke, vergelykbare transaksie tussen onafhanklike partye, in effek, 'n hipotese. Die uiteinde van sodanige vergelyking is om effek te gee aan 'n transaksie waarby die partye tot die transaksie poog om die bes moontlike kondisie en opbrengs te beding, 'n gewillige koper verkoper beginsel, die arm lengte beginsel.

Om sodanige vergelyking te tref in die praktyk is subjektief en die subjektiewe aard van sodanige vergelyking word erken en aanspraak word gemaak op oordeel. Oordeel word vereis ten opsigte van metodologie seleksie, vergelykbaarheids analise (keuse van vergelykbare, onafhanklike ondernemings) en aanpassings tot die data wat gebruik word om die arm lengte vergoeding vas te stel. Onsekerheid, veral ten opsigte van die hipotese wat 'n onafhanklike onderneming sou gedoen het (arm lengte beginsel), beklemtoon die belangrikheid om 'n werkbare oplossing te vind om onsekerheid en subjektiwiteit te beperk.

## **Doelwit van die studie**

Die studie poog om 'n vergelykbaarheids aanpassings oordragprysvasstellings model te ontwikkel, definieer en te toets om sodende 'n bydrae te lewer om subjektiwiteit en onsekerheid ten opsigte van die arm lengte beginsel uit die weg te ruim.

## **Bereik met die studie**

Deur die ontwikkeling van 'n vergelykbaarheids aanpassings oordragprysvasstellings model is die volgende nagevolg en bereik:

- Verbetering van die vergelykbaarheids analise deur gebruik te maak van finansiële verhouding analises. Finansiële verhoudings en winsgewendheid aanwysers verskaf meting van funksies, bates en risiko's wat gebruik word in die bepaling van wat geag kan word as 'n arm lengte vergoeding.
- Uitbreiding van die vergelykbaarheids analise deur die kwantitatiewe beraming van gewigte van veranderlikes wat winsgewendheid beïnvloed.
- Uitbreiding van die vergelykbaarheids analise deur die formulering van objektiewe meting gebaseer op meervoudige regressie analise vir die kwantitatiewe beraming van punt ramings van die arm lengte vergoeding relatief tot die inter-kwartiel reeks.
- Verskaf objektiewe toepassing van die oordragprysvastelling metodologieë en gepaardgaande winsgewendheid aanwysers.
- Beperk onsekerheid en vae toepassing van die arm lengte beginsel deur gebruik te maak van die vergelykbaarheids aanpassings oordragprysvasstellings model.
- Gebruik van 'n mark gebaseerde ekonomiese aanwyser vir risiko aanpassing ten opsigte van die arm lengte beginsel.
- Bewusmaking en internalisering van die bestuur van MNO oor die belangrikheid van oordragprysvastelling.

## **Abstract**

The birth of democracy in South Africa on 27 April 1994 brought about irrevocable change. Markets opened up, economic activity and trade accelerated resulting in the South African economy being catapulted into the global market.

Globalisation became a reality. Globalisation comprises structural transformation that affects enterprises and countries giving rise to new relationships and interdependencies. Globalisation creates a multiplicity of linkages and interconnections amongst countries and societies that constitutes the present world economic system. The multiplicity of linkages and interconnections aligns the Multinational Enterprise (MNE) as it relates to an integrated production and market network spread over various geographic locations.

Historically, South Africa had stringent exchange controls to limit capital flows. Since democratisation in 1994, South Africa introduced transfer pricing legislation to administer transfer prices of goods and services within an MNE. The goods and services transferred within an MNE are not geographically bound and do not necessarily reflect economic market conditions. Hence, the approach used in transfer pricing is to determine the arm's length consideration based on what a willing buyer and seller would do, the market price.

To establish the arm's length consideration, comparative benchmarks are used. Comparability, in this context, give effect to "what would have been if a willing buyer and seller" transacted. The concept of "what would have been", the comparative benchmark, could be ambiguous. Ambiguity is the result of the interpretation of "what would have been". In order to minimise ambiguity insofar as comparability, a comparability adjustment transfer pricing model (CATPM) is designed to recognise factors obtained from comparative benchmarks.

The CATPM provides greater clarity insofar as the determination of the arm's length consideration. Clarity is achieved despite constraints such as unavailable South African comparable information with inconsistent use of foreign comparable data that results in ambiguous, subjective conclusions on the arm's length nature of transactions.

# Chapter 1 Introduction

The South African economic landscape has evolved significantly since the birth of the democratic dispensation on 27 April 1994. Foreign Direct Investment (FDI) flows are indicative of the new horizons opening up to the African continent, but more specifically, to the rainbow nation. As a result, Africa's FDI has escalated to significantly higher levels since 1999 (US\$ 9 billion) to 2001 (US\$ 17 billion), (UNCTAD, 2002: xvii). Large projects in Morocco and South Africa, for example, contributed to the considerable increase in FDI (UNCTAD, 2003: 8). It would not be sustainable as tragedy struck one of the leading countries supporting FDI in Africa.

Looking at the United States of America (USA), the devastating 9/11 attack on the pinnacle of American prosperity, The World Trade Centre in 2001, global economic volatility had a profound effect on FDI flows to Africa in 2002. UNCTAD (2003: 8) recorded a 41% decline of FDI flows to Africa in 2002.

Giving global perspective to the above, the FDI flows to Africa amounts to a mere 2% of global FDI flows. Despite meagre inflows of FDI and a volatile global economy, opportunity for expansion in Africa is abundantly alive.

Globalisation is gaining momentum with global shareholding of 64 000 multinational enterprises controlling 870 000 foreign affiliates increased by 10 per cent in 2002 and amounting to more than US\$ 7 trillion (UNCTAD, 2003: 14). Value added activities by foreign affiliates in 2002 are estimated to account for about 10 per cent of world Gross Domestic Product (GDP) with global sales by multinational enterprises reaching US\$ 18 trillion.

Globalisation stretches across national boundaries, which in turn, exert pressure on tax administrations to ensure the protection of their tax base by introducing and administering legislation to prevent untaxed profits to emigrate. Various policy measures have been devised by administrations to address the erosion of the tax base. These include transfer pricing legislation and double taxation agreements to provide certainty and transparency in the assessment of international transactions.

South Africa has historically strict exchange control measures which provided some level of protection against the significant manipulation of transfer prices aimed at profit transfers from

South Africa to other and sometimes, low tax jurisdictions. In anticipation of the further relaxation of exchange controls and the envisaged adverse effect of capital flight and profit shifting on the South African tax base, Section 31 of the Income Tax Act 1962 (the Act) was introduced in 1995.

Against this background, this research proposes a transfer pricing model. Such a model is founded on theoretical and empirical evidence in the determination of the arm's length consideration, as recognised in South Africa and internationally.

## 1.1 Problem Statement

Transfer pricing involves a process by which MNE's determine the prices at which they transfer goods or services internally. Transfer of goods and services within an MNE does not necessarily reflect market conditions. Hence, the approach in transfer pricing concerning an MNE is to determine the arm's length price based on what a willing buyer and seller would do, the market price. The market price is the culmination where each party strives to get the utmost benefit from the transaction.

Since 1995, transfer pricing remains the prominent international tax issue for MNE's (Ernst & Young, 2001:5). Eighty-six per cent of parent and ninety three per cent of subsidiary respondents to the Ernst & Young survey identified transfer pricing as the most important international tax issue they currently face (Ernst & Young, 2003:7).

Transfer pricing is formulated on the requirements of Article 9 of the Organisation for Economic Cooperation and Development (OECD) Model Tax Convention, which states "... *[When] conditions are made or imposed amongst ... two [associated] enterprises in their commercial or financial relations which differ from those which would have been made amongst unconnected parties (own emphasis), then any profits which ... have not so accrued, may be included in the profits of that enterprise and taxed accordingly*" (OECD, 2000:7).

Article 9 requires a comparison between the affected transaction of the MNE and a comparable transaction of comparable enterprises (unconnected parties), which are not part of an MNE. Ensuing from these comparative benchmarks, effect is given to "what would have been if a willing buyer and seller" transacted upon which the arm's length consideration is based.

The formulation of “what would have been”, the comparative benchmark, could be ambiguous. Ambiguity arises from transfer pricing and the arm’s length consideration being regarded as a non-exact science and “*requires judgment*” (South Africa, 1999:9, OECD, 1995:I-5,I-19,IV-3). Judgment concurs to methodology selection, selection of comparables, adjustments to enhance comparability and determination of the arm’s length range. Ambiguity and subjective interpretation of the arm’s length range is acknowledged by the OECD, “*...price may have to be estimated within a range of acceptable figures. Also, the choice of methodology for establishing arm’s length transfer pricing will not often be unambiguously clear*” (OECD, 1995:IV-3).

Globally, transfer pricing guidelines promulgated by the OECD, referred colloquially to, as the OECD Guidelines exist. In South Africa, the South African Revenue Service (SARS) has issued, Practice Note (PN) 7, which is based on the OECD Guidelines, in 1999. PN 7 provides guidance insofar as transfer pricing in South Africa (South Africa, 1999:1); however, these are *guidelines without authoritative or prescriptive requirements*.

Uncertainty, and in particular the *what would have been* hypothesis, which forms the basis of the arm’s length principle accentuates the need to clarify the ambiguity surrounding transfer pricing, especially comparability. *Currently no objective measure is promulgated by either the OECD Guidelines or PN 7 apart from casual reference to economic circumstances to be adjusted. The lack of clear guidance and an objective measure that complies with economic theory and the arm’s length principle, which can be regarded as a fair proxy for comparability, provides impetus for this research.*

In order to ensure consistent administration of transfer pricing in South Africa in accordance with the international norm, as recognised in the OECD Guidelines and PN 7, a model founded on the requirements to determine the arm’s length consideration (price or margin determined that is based on the arm’s length principle) is imperative. The comparability adjustment transfer pricing model (CATPM) aims to minimise ambiguity insofar as comparability. *The CATPM is designed to establish comparative benchmarks in accordance with comparability requirements as well as the comparative benchmarks’ impact on profitability, the arm’s length consideration.* Furthermore, a consistent framework, as put forward by the CATPM will have insurmountable value to management of MNE’s and tax administrations in terms of establishing transfer pricing in accordance with the arm’s length principle.

### **1.1.1 Economic theory underpinning the arm's length consideration**

A price for a particular good or service should be a fair representation of the market forces of supply–demand equilibrium under a given set of circumstances. Transfer pricing recognises the free market principle and acknowledges that numerous factors such as government regulations, terms and conditions of transactions influence prices and, consequently transfer prices (OECD, 1995:I-1,I-7; South Africa, 1999:12). In following such an approach, a transfer pricing model should be based on the market dynamics of supply and demand, as well as the interaction thereof.

In order to capture market dynamics of supply and demand as well as factors such as government regulations, transfer pricing is based on an analysis of independent transactions. Substantiating this approach is the premise that independent transactions amongst unconnected parties are characterised by the behaviour of the transacting parties where each party to the transaction strives to derive the utmost benefit from the transaction that is the economic principle of minimum input and maximum output.

The transaction motive to derive the utmost benefit from the transaction undertaken is not as profound in connected transactions compared to independent transactions. This is evident when semi-finished goods are transferred amongst members of MNE when a market for such goods does not exist or when transactions are viewed at a consolidated basis rather than a series of individual transactions. Transfer pricing is concerned with the pricing of individual transactions.

In order to comply with transfer pricing regulations as well as the administration thereof, a market is imposed in accordance with the authoritative statement of the arm's length principle is found in paragraph 1 of Article 9 of the OECD Model Tax Convention. Paragraph 1 of Article 9 forms the basis of bilateral tax treaties involving OECD Member countries and a number of non-Member countries, such as South Africa. Article 9 provides that “...[When] conditions are made or imposed between ... two [associated] enterprises in their commercial or financial relations which differ from those which would be made between independent enterprises, then any profits which would, but for those conditions, have accrued to one of the enterprises, but, by reason of those conditions, have not so accrued, may be included in the profits of that enterprise and taxed accordingly” (OECD, 2000:7).

The arm's length principle follows the approach of treating the members of an MNE group as operating as separate entities rather than as inseparable parts of a single unified business (OECD, 1995:G-1; South Africa, 1999:5). Because the separate entity approach treats the members of an MNE group as if they were independent entities, attention is focused on the nature of the dealings between those members. The focus is on adjustment of profits by reference to *the conditions, which would have been obtained between independent enterprises in comparable transactions and comparable circumstances* (OECD, 1995:I-8; South Africa, 1999:29).

#### ***1.1.1.1 Globalisation***

Adherence to transfer pricing legislation as well as administration thereof is concerned with the pricing attached to transactions amongst members of multinational enterprises. The multinational enterprise is closely associated with the advent and escalation of globalisation. South Africa's democratisation resulted in dramatic changes over the last decade. The increased level of economic openness is indicative of the globalisation thrust experienced in the domestic market (refer to section 2.2.1.1 with South Africa as an illustrative example for more details).

The significance of the multinational enterprise within the context of globalisation is comprehensible from merger and acquisition (M&A) activity. UNCTAD (2003:1) states that M&A cases have declined significantly from 7 894 cases in 2000 to 4 493 cases in 2002, with the average value of these cases declining from US\$145 million to US\$82 million over the same period. M&A activity in deals worth more than US\$1 billion declined since 2000. However 81 such deals were concluded in 2002, still an indication of the significance of these deals.

Against the background of increased economic openness and increased activity of M&A, transfer pricing is instituted to protect the domestic tax base. Tax competition amongst countries is a reality and internationally, organisations such as the OECD attempts to limit harmful tax competition through the establishment of international standards to give rise to global harmonisation. The focus of this research is transfer pricing. However, reference to tax competition is made in Chapter 2 to position transfer pricing within the domain of international tax.

#### 1.1.1.1.1 The multinational enterprise

Transfer pricing is practiced within the MNE, commonly referred to as intra-group trade, hence the evolution of the MNE influences transfer pricing. Transfer pricing, within the context of this research, is concerned with intra-group trade, which spans across national boundaries. The 2002 UNCTAD World Investment Report estimates that 64 000 MNE's with 870 000 foreign affiliates across the world realised sales of almost US\$ 19 trillion in 2001. The report estimates that foreign members of MNE's in 2001 accounts for 10% of world Gross Domestic Product (GDP) and one-third of world exports (UNCTAD, 2002:i). The value of MNE activities associated with non-equity relationships (shareholding) is estimated to account for larger shares in global aggregate Gross Domestic Product (GDP) and exports (UNCTAD, 2003:14). MNE activities that give rise to transfer pricing include the following:

- International subcontracting where the MNE subcontracts part of global contracts to subsidiaries. In a South African context, the defence procurement programme requires an MNE with defence procurement contracts to meet particular counter trade requirements. These counter trade requirements include procurement from South African entities or investment in South Africa. Some of these MNE's such as FerroStahl (Germany) has established operations in South Africa and invested in South African enterprises.
- Licensing where MNE's licence the right to manufacture or distribute products and services in specific regions or countries to various members of the MNE, commonly referred to as connected parties (the colloquial term used in the research).
- Contract manufacturing where MNE's divest in their subsidiaries in terms of assets and consequently risk with the controlling entities within the MNE assuming the manufacturing risk. The contract manufacturer provides an assembling service to the MNE with the MNE realising a bigger reward because of assuming the manufacturing risk. This particular tendency is evident in the automotive sector where companies such as BMW and DaimlerChrysler operate as contract manufacturers for their respective MNE parent companies.

In order to administer transfer pricing rules, understanding the faster evolution of the MNE within the context of globalisation provides some light on organisational dynamics and transfer price

setting, as well as realizing the increasing importance of the managing thereof in the business environment.

### **1.1.2 The transfer pricing of international transactions**

Transfer prices are prices at which various connected parties transfer physical goods, services and intangible property amongst one another amongst national economies and corresponding legislative frameworks. The transfer prices adopted by an MNE have a direct bearing on the profit or loss it derives from its activities in each country it operates. If a non-market value is paid for the transfer of goods or services the profit attributed to each of the members of an MNE will be inconsistent with their relative economic contributions (South Africa, 1999:5).

The distortion amongst the non-market value paid for goods and services and relative economic contribution of transactions amongst members of MNE's impacts on the level of profitability, tax revenues and tax liabilities realised in the relevant tax jurisdictions in which they operate. In order to minimise the detrimental effect such distortions have on a country's economy, transfer pricing legislation have been introduced in various countries in the world. South Africa, is no exception, the issues relating to transfer pricing in South Africa are primarily dealt with by the introduction in 1995 of Section 31 in the Income Tax Act 1962 (Act No. 56 of 1962).

The impact of transfer pricing on the South African economy falls outside the scope of the research, the focus is on the prevalence thereof. Transfer pricing, within this research, is concerned with the pricing of transactions amongst members of an MNE across national boundaries.

#### ***1.1.2.1 Arm's length principle***

The administration of transfer pricing regulations is based on the separate entity approach being applied to intra group transactions. In essence, according to the separate entity approach, group members of an MNE must transact as stand-alone enterprises (unconnected parties) would transact. This approach is in accordance with the requirements of Article 9 of the OECD Model Tax Convention "*...conditions are made or imposed amongst ... two [associated] enterprises in their commercial or financial relations which differ from those which would have been made amongst unconnected parties, ...*" (OECD, 2000:7).

The correct application of the separate entity approach in conjunction with the arm's length principle in effect allocates income and expenses amongst MNE members that commensurate with their relative economic contribution, as evidenced by reference to unconnected parties. In following a separate entity approach and applying the arm's length principle, a complex issue to be resolved is the determination of an arm's length transfer price amongst MNE members as it *would have been* amongst unconnected parties.

One of the analyses undertaken in determining what would have been is to prepare a functional analysis. A functional analysis is a method of identifying and organising facts about an MNE's functions, assets and risks. It determines how functions, assets and risks are divided between the connected parties involved in the transaction under review. A functional analysis identifies the economically significant activities (functions performed, assets employed and risks assumed) that are undertaken by the member of a multinational and for which it should expect to be rewarded.

#### ***1.1.2.2 Transfer pricing methodologies***

The determination of arm's length consideration can be based on a number of recognised transfer pricing methodologies. The use of transfer pricing methodologies and the determination of the arm's length consideration are dependent on the facts pertaining to each case. Various factors such as availability of data and applicability of the method under specific circumstances influence the selection of the most appropriate transfer pricing method.

An analysis of the transfer pricing methods promulgated by the Organisation for Economic Cooperation and Development (OECD) guidelines as well as the methods acceptable to the Commissioner of the South African Revenue Service (SARS) and other methods the Inland Revenue Service, the tax administration in the United States are investigated. The OECD methods which are also the methods used by South Africa can be broadly characterised into two broad categories. Each of the broad categories has specific methods associated with it and is as follows:

- Traditional transactional methods
  - Comparable uncontrolled price (CUP)
  - Cost plus (CP)
  - Resale price (RP)

- Transactional profit methods
  - Transactional net margin method (TNNM)
  - Profit split (PS)

Other methods, predominantly used by the Inland Revenue Service (IRS) of the United States of America (US) promulgates are the comparable transaction method (CUT) which is comparable to the CUP and the comparable profit method (CPM) which is comparable to the TNMM the method used in this research.

### ***1.1.2.3 Comparability***

Comparability, as with the separate entity approach, is crucial in the determination of the arm's length consideration. Comparability in terms of Article 9 of the OECD Model Tax Convention requires "... *[When] conditions are made or imposed amongst ... two [associated] enterprises in their commercial or financial relations which differ from those which would have been made amongst unconnected parties...*" (OECD, 2000:7).

The principle of comparability is entrenched in South African practice (South Africa, 1999:9) which follows the international norm as expressed in the OECD Guidelines (OECD, 1995:I-7). Application of the arm's length principle is generally based on a comparison of the conditions in a controlled transaction with the conditions in transactions amongst unconnected parties. In order for such comparisons to be useful, the economically relevant characteristics of the situations being compared must be sufficiently comparable. *To be comparable means that none of the differences (if any) amongst the situations being compared could materially affect the condition being examined in the methodology (e.g. price or margin), or that reasonably accurate adjustments can be made to eliminate the effect of any such differences.*

Differences amongst national economies, each with its own domestic market, regulatory or legislative environment exists and differences must be addressed in administering transfer pricing regulations. In South Africa, comparable information constraints necessitate the use of foreign comparables. Using foreign comparables challenge transfer pricing rules administration in South Africa insofar as material differences must and should be recognised and adjusted to accurately reflect the comparable differences in determining a result consistent with the arm's length principle.

#### ***1.1.2.4 International trends pertaining to transfer pricing***

International trends in transfer pricing, particularly detail pertaining to transactions and determined arm's length consideration is not publicly available nor is it published within the domain of the OECD. Authorities participate in the various working groups of the OECD and share experiences but such co-operation is restricted to generic and theoretical aspects of transfer pricing.

Exchange of information pertaining to specific entities or taxpayers is accommodated in accordance with double taxation agreements (DTA's) and the use of such information is strictly used in accordance with the relevant articles governing it in the DTA's. This lack of coherent information on international trends in transfer pricing does not deter its importance.

In surveys conducted by Ernst and Young (a leading auditing firm), multiple responses to specific questions in the questionnaire are allowed. This approach is in accordance with the concept of "*collectively exhaustive*" which aims to ensure the measurement of all factors, which could potentially influence the factors considered. In the context of this research, the incorporation and analysis of the Ernst & Young survey results allows transfer pricing trends to be identified which could assist management of MNE's and tax administrations in transfer pricing management.

#### ***1.1.2.5 A pragmatic approach in transfer pricing***

Alternative approaches and methodologies are used in the determination of transactional prices of connected party dealings with varying degree of success. *In South Africa, the biggest constraint in administering transfer pricing is the unavailability of South African comparables, which necessitates the use of foreign comparable information.* Adjustment of financial information of comparables to enhance comparability can be made although its subjective nature could threaten objectivity in the determination of the arm's length consideration.

In this research, a benchmark, which represents a fair proxy to country comparables differences, is put forward and incorporated as an alternative approach that can be used as support for the determination of an arm's length consideration. Having considered the abovementioned aspects underlying the transfer pricing environment in South Africa, *it is imperative to follow a consistent approach in the determination of the arm's length consideration.*

This research aims to develop, describe and apply the comparability adjustment transfer pricing model (CATPM). The CATPM aims to provide greater clarity insofar as the determination of the

arm's length consideration despite constraints such as unavailable South African comparable information with inconsistent use of foreign comparable data that results in ambiguous, subjective conclusions on the arm's length nature of transactions.

### **1.1.3 ZA Case 01**

For purpose of this research, a South African member of an MNE is evaluated in terms of South African transfer pricing regulations. The comparability adjustment transfer pricing model, which is developed, will be tested and applied to the case in addition to the conventional approach used in South Africa to date.

Conclusions and inferences that could be made on the results obtained from the comparability adjustment transfer pricing model are proposed. The conclusions and inferences focus on providing a substantially enhanced objective approach to the determination of the arm's length consideration.

Tangible goods account for the highest proportion of transfer pricing audits, although taxpayers are also concerned about services and financial transactions (Ernst & Young, 2003:1). This research follows a similar approach; the main focus is on tangible goods.

## **1.2 Objectives of the research**

### **1.2.1 Primary objective**

The primary objective of this research is to develop and apply a comparability adjustment transfer pricing model (CATPM).

### **1.2.2 Secondary objectives**

Through the development of a CATPM, the following secondary objectives will be pursued:

- To also realize a CATPM which in turn aims to:
  - To apply the consequently developed CATPM to a practical case
  - Improve the comparability analysis by using ratio analysis. Ratios or the relevant profit level indicators provides measures of functions, assets and risks, to use the

information contained in financial statements and to guide the analysis of comparables; even in the absence of industry comparables.

- Enhance comparability analysis by estimating weights that determine the quantitative impact of mutually exclusive and collectively exhaustive (“MECE”) ratios on profitability.
- Enhance the comparability analysis through providing an objective measure based on regression techniques to produce point estimates of the arm’s length consideration relative to the inter-quartile range.
- Provide objective clarity concerning the application of transfer pricing methodologies and their accompanying profit level indicators in the South African context. However, the results obtained from the research should provide a clear indication which profit level indicator is the most appropriate to use.
- Limit ambiguity caused by vague guidelines with an objective CATPM to determine the arm’s length consideration.
- Use of an independent, market based economic indicator for a country risk adjustment in the subsequently developed model. A 2005 technical working group of the OECD, identified country risk premiums as a point for discussion under comparability (OECD, 2005 (b): 6). *It is the first time that the country risk appears as an agenda item after it was raised by South Africa as a consideration pertaining to comparability.*
- Sensitising and internalizing business managers and tax authorities of the importance and financial magnitude of transfer pricing. In essence, provide input to good corporate governance and stewardship, which is a key to contemporary business management.
- Objective measurement and conceptualising of transfer pricing to business managers and tax authorities.
- Identify additional research to the CATPM.

### **1.3 Scope of the research**

The research aims to put forward a transfer pricing model, which empirically highlights comparability adjustments in order to determine an objective, arm's length consideration for transactions amongst connected parties within the South African context.

### **1.4 Research methodology**

#### **1.4.1 Literature study**

In order to establish a sound theoretical background a comprehensive literature study was conducted focusing on:

- Globalisation, its origins, trends, determinants, international tax and its implication on administering transfer pricing.
- Current global transfer pricing trends and its implication on transfer pricing administration.
- Transfer pricing guidelines and practice notes that provide guidance to the practical application of transfer pricing, from an administration as well as an advisory perspective.
- Theory and practical application of financial statement analysis in order to guide the analysis required to determine the arm's length consideration for transactions amongst connected parties.
- Author dominance is present with reference to the following publications:
  - The OECD Guidelines on Transfer Pricing is the internationally accepted guidelines by tax authorities of OECD member and non-member countries. It is an authoritative source on transfer pricing.
  - South Africa's Practice Note 7 as guidelines on transfer pricing in South Africa. Practice note 7 follows the OECD guidelines but make specific reference to situations pertinent to South African circumstances.
  - The National Association of Automobile Manufacturers of South Africa (NAAMSA) is the industry association representing the automobile manufacturers operating in South Africa. NAAMSA collects and publishes industry specific information. There is not an alternative source of information pertaining to the

automobile manufacturing sector. The empirical part of the research relied on information published by NAAMSA.

## **1.4.2 Empirical field investigation**

### ***1.4.2.1 Interviews***

Numerous interviews were conducted throughout the research process with the following interviews forming an integral part of the research methodology:

- Structured interviews were conducted with various personnel at ZA Case 01 that are in accordance with the normal practical analysis of connected parties for the purposes of transfer pricing. A complete interview questionnaire is included in the research; refer to Appendix 5.2 for more details. In order to maintain confidentiality, the positions rather than the name of the interviewees are disclosed and they are as follows:
  - Directors of the Executive Committee of ZA Case 01
  - Procurement manager
  - Production manager
  - Dealer principle and the management committee of a specific flagship dealership
- In addition to the structured interviews, unstructured interviews were conducted with various individuals at a number of relevant organisations and institutions which are as follows:
  - The OECD and in particular Bernhard Damsma based in Paris and John Neighbour based in London.
  - Inland Revenue, the United Kingdom's revenue service and in particular Ian Wood based in London.
  - Bureau van Dijk, the publisher of the Amadeus database, which is widely used in comparability analysis and Chris van der Walle, based in Brussels.
  - Ernst and Young's Global Transfer Pricing Practice and in particular the following individuals:

- John Hobster, Global transfer pricing practice leader based in New York and London.
- Robert Miall, Senior Economist based in London.
- Nigel Dolman, Senior Transfer Pricing Analyst based in London.
- Sean Kruger, Partner Transfer Pricing in Southern Africa based in Johannesburg.

#### *1.4.2.2 Confidential classification*

In order to achieve the mentioned objectives and formulate empirical conclusions and recommendations that are based on practice rather than a hypothesised entity, it is essential to base the research on an actual transfer pricing case. The empirical part of the research focus on the evaluation of a South African member of an MNE which is not in a start-up phase and commands a significant market share in the domestic South African market, the so-called “ZA Case 01”. In order to protect the identity of ZA Case 01 the research is classified as confidential based on the following grounds:

- ZA Case 01 is not a listed company on the Johannesburg Securities Exchange (JSE), nor any other securities or stock exchange globally. The financial information pertaining to ZA Case 01 is not publicly available and is confidential.
- The South African economy is relatively small with at most a handful of competitors in specific industries and sub-sectors of industry. This research focuses on a subsidiary of an MNE which is involved in the assembly, distribution and marketing of automotive products referred to as ZA Case 01. It would be relatively easy for anyone with knowledge of the automotive industry to identify ZA Case 01 and to gain access to the confidential and strategic information associated with ZA Case 01.
- Disclosure of any information regarding a specific taxpayer to any other party is in contravention of Article 4, the secrecy provisions of the Income Tax Act. In the research, specific information, which is not imperative to transfer pricing, is not disclosed. This non-disclosure does not remove the confidentiality classification from the research.

### *1.4.2.3 ZA Case 01*

In the assessment process the connected party is evaluated in terms of the functions the specific connected party is performing, the assets it used in performing these functions and the risk involved in the performance thereof. The focus will be on a company, which primarily supplies vehicles to the South African Commercial Vehicle Market. In assessing the transfer pricing practices of the South African subsidiary of an MNE and establishing the arm's length consideration that is in accordance with the approach used by other tax jurisdictions the investigation will focus on the following in establishing the connected party dealings:

- An overview of the MNE inclusive of the overall structure and nature of the business of the connected party that is the focus of the analysis.
- The general market conditions in which the connected party operates including the current business environment. Market and business conditions evaluation focus on the current as well as predicted changes. The market conditions are analysed in terms of its potential and actual impact on prices and profitability.
- Direct consideration of the transaction under review with consideration to:
  - the nature and terms of the transaction,
  - economic conditions and assets involved in the transaction and,
  - how the product or service that is the subject of the controlled transaction in question flows or are being transferred amongst the connected parties.
- Actual contractual terms of the transaction that often provides evidence about the form in which the responsibilities, risks and benefits have been assigned amongst the MNE.
- The functions undertaken by the relevant connected parties.
- The relative contributions of the various functions performed by connected parties in the value chain and the overall reward for all these functions. The number of functions performed by a particular member of an MNE is not decisive in determining whether that member should derive the greater share of the profit. Profit attribution is based on the relative importance and risk associated with each business function rather than the number of functions that has been performed.

- Risk appraisal with reference to the free market, the assumption of increased risk compensated by an increase in the expected return. The risks assumed by the connected party are taken into account in the functional analysis. The CATPM is based on the relationship amongst risk and accounting profitability.

A comparability analysis is undertaken to identify potentially comparable entities that constitutes the sample used for the determination of the arm's length consideration for ZA Case 01. The process followed in the analysis for the purpose of this research is two fold.

- Firstly the analysis, referred to as current approach, focuses on the querying the Amadeus database and individual screening to ensure comparability.
- Secondly, under the CATPM approach a similar querying process is followed to that of the current approach without any individual screening to determine comparable entities.

## **1.5 Limitations of the research**

Transfer pricing encompass an extensive field of research. In order to achieve the objective of the research, not all concepts and issues relating to transfer pricing are undertaken. The following limitations of the research are highlighted:

- Undisclosed company specific information will be used in the research and will not be disclosed as to enable any reader to identify the connected party being evaluated. As such, this is a classified study.
- South African comparable information pertaining to publicly disclosed financial statements on an unconsolidated basis is not freely available. In the event that the need arises to make use of comparable information, foreign comparable companies from Bureau Van Dijk's Amadeus Database with information of approximately 1.2 million companies in Europe are used.
- In the absence of provisions dealing with advance pricing arrangements (when companies engage the relevant tax authority on transfer pricing issues prior to entering into transfer pricing transactions that in effect give rise to a tax ruling) in the Act and PN 7, the research will not consider advance pricing arrangements.

- Although South African legislation concerning financial assistance as envisaged in PN 2 exist, financial assistance will be incorporated into the specific aspects as mentioned in the problem statement. It will not be covered in a separate section.
- The dynamics and trends underlying foreign direct investment (FDI) as a measure of globalisation is not discussed in any detail. The exclusion is based on the focus of the research being on the determination of the arm's length consideration and comparable adjustments to effect the arm's length consideration. Reference to FDI will be made insofar as it is essential to explain or contextualise transfer pricing.
- Double taxation agreements (DTA's) form an integral part of international transfer pricing. Reference to DTA's are made as and when required. It is not dealt in specific detail. Reference to the arm's length requirement, as contemplated in the DTA's is included. Definitions, as defined in DTA's, which refer, to transfer pricing are included under the terminology of the research.
- Transfer pricing involving intangible assets, royalties and cost contribution arrangements are not undertaken.
- The potential impact of transfer pricing on competition and the inferences with competition legislation falls outside the scope of the research.
- Transfer pricing involving natural persons, partnerships, trusts and close corporations falls outside the scope of this research.
- The research period covers the time period 1996 through 2002 years of assessment for ZA Case 01 insofar as the transfer pricing analysis.

## **1.6 Terminology of the research**

Terminology and definitions are based on the terminology and definitions as provided in the Income Tax Act 1962 (Act No. 56 of 1962) (the Act); Companies Act, 1973 (Act No. 61 of 1973) (the Companies Act); Organisation for Economic Co-operation and Development Transfer Pricing Guidelines for MNE's and tax administrators (OECD Guidelines); OECD Model Tax Convention on Income and on Capital (OECD Model Convention); PN 2: Income tax: Determination of taxable income where financial assistance has been granted by a non-resident of the Republic to a

resident of the Republic; and PN 7, Section 31 of the Income Tax Act, 1962: Determination of the taxable income of certain persons from international transactions: Transfer Pricing (PN 7).

### **1.6.1 Arm's length principle**

The first and overriding principle is that transactions amongst connected parties are to be conducted at arm's length. The transaction should have the substantive financial characteristics of a transaction amongst independent parties, where each party will strive to get the utmost possible benefit from the transaction.

### **1.6.2 Arm's length range**

A range of figures that are acceptable for establishing whether the conditions of a controlled transaction are at arm's length and that are derived from applying the same transfer pricing method either to multiple comparable data or from applying different transfer pricing methods.

### **1.6.3 Business strategies**

Business strategies are relevant in determining comparability for transfer pricing purposes. Business strategies are a legitimate aspect of arm's length operations. The arm's length principle, therefore, acknowledges those strategies. Business strategies would take into account many aspects of an enterprise, such as innovation and new product development, degree of diversification, risk aversion and other factors that have bearing upon the daily conduct of business.

### **1.6.4 Collectively exhaustive**

Collectively exhaustive means that everything applicable should be measured.

### **1.6.5 Comparability**

Comparability is fundamental to the application of the arm's length principle. The preferred arm's length methods are based on the concept of comparing the prices/margins achieved by connected parties in their dealings to those achieved by independent entities for the same or similar dealings. In order for such comparisons to be useful, the economically relevant characteristics of the situations being compared must be highly comparable. To be comparable means that none of the differences (if any) amongst the situations being compared could materially affect the condition

being examined in the method (e.g. price or margin), or that reasonably accurate adjustments can be made to eliminate the effect of any such differences. If suitable adjustments cannot be made, then the dealings cannot be considered comparable.

### **1.6.6 Comparability Adjustment Transfer Pricing Model (CATPM)**

The CATPM is a transfer pricing model founded on theoretical and empirical evidence that measure risk in order to quantify comparability adjustment(s) to comparable data in the determination of the arm's length consideration.

### **1.6.7 Comparability analysis**

Comparability analysis comprises of a comparison amongst a controlled transaction with an uncontrolled transaction or transactions. Controlled and uncontrolled transactions are comparable if none of the differences amongst the transactions could materially affect the factor being examined in the methodology (e.g. price or margin), or if reasonably accurate adjustments can be made to eliminate the material effects of any such differences.

### **1.6.8 Connected person (party)**

A "connected person" is defined in relation to each of the following categories of persons:

In relation to a company:

- its holding company, as defined in section 1 of the Companies Act, 1973 (Act No. 61 of 1973);
- its subsidiary, as defined in section 1 of the Companies Act;
  - the other company is a member thereof, and;
  - holds the majority of the voting rights therein;
  - has the right to appoint or remove directors holding a majority of the voting rights at meetings of the board; or
  - has the sole control of a majority of the voting rights therein, whether pursuant to an agreement with other members or otherwise;
  - it is a subsidiary of any company which is a subsidiary of that other company; or

- subsidiaries of that other company, or that other company and its subsidiaries, together hold the rights referred to above.

A body corporate or other undertaking which would have been a subsidiary of a company, had the body corporate or other undertaking been a company for purposes of the Companies Act, is deemed to be a subsidiary of that other company.

- any other company, where both such companies are subsidiaries (as defined) of the same holding company;
- any person, other than a company as defined in section 1 of the Companies Act, who individually or jointly with any connected person in relation to such person, holds (directly or indirectly) at least 20 per cent of the company's equity share capital or voting rights;
- any other company, if at least 20 per cent of the equity share capital of such company is held by such other company, and no shareholder holds the majority voting rights of such company;
- any other company, if such other company is managed or controlled by –
  - (aa) any person (A) who or which is a connected person in relation to such company or
  - (bb) any person who or which is a connected person in relation to A.

For example, two companies will be connected parties in the event of one company being managed or controlled by a connected person in relation to the other company, as well as where the companies are managed or controlled by persons who are connected parties in relation to each other.

In this research, transfer pricing relating to a natural person, trust, partnership and close corporation are not investigated. The definition of a connected person in relation to an individual, a trust, partnership and close corporation is thus excluded.

### **1.6.9 Controlled (affected) transaction**

A transaction in terms of which the ownership or control relationship is able to influence the transfer price set. In relation to section 31, of the Income Tax Act, a controlled transaction will be any transaction amongst connected parties.

### **1.6.10 Economic circumstances**

Arm's length prices may vary across different markets, even for transactions involving the same product or service. To achieve comparability, it is important to ensure that the markets in which the parties operate are comparable. Any differences must either not have a material effect on price, or be differences for which appropriate adjustments can be made. For example, economic circumstances in the pharmaceutical industry in South Africa is substantially different to that in Europe with South African industry being exposed to stringent price regulations and price controls at a retail level.

### **1.6.11 Elasticity**

An elastic demand supply curve indicates that consumers or producers are sensitive to changes in the price and that the accompanying change in the quantity is greater than the change in the price.

### **1.6.12 Elasticity of demand**

Elasticity of demand can be defined, as the relative change in the quantity demand in relation to the relative change in the price, which caused the change in the quantity demand.

### 1.6.13 Financial ratio's

The financial ratios (refer to 1.6.14 for explanation of acronyms) used in the research are as follows:

Description	Formula
Tax leverage	$TL_{ev} = \frac{NP}{EBT}$
Financial leverage	$FL_{ev} = \frac{EBT}{EBIT}$
Operating margin	$OM = \frac{EBIT}{Sales}$
Total assets turnover	$TAT = \frac{Sales}{TA}$
Asset structure	$AS = \frac{TA}{EBT}$
Accounts receivable turnover	$RecTO = \frac{Rec}{Inv}$
Inventory turnover	$ITO = \frac{Inventory}{Sales}$
Cash position	$CP = \frac{Sales}{CA}$
Short term liquidity	$STLiq = \frac{CA}{CL}$
Liability structure	$LiabSt = \frac{CL}{Debt}$
Long term solvency	$LTSol = \frac{Debt}{Capital}$
Financial structure and risk management	$\frac{Capital}{Equity}$

(Source: Brigham et al (1999: 86) and Libby et al (1998: 719) and own compilation)

### 1.6.14 Financial statement items

Financial statement items covered in the research to ensure a consistent basis on which any subsequent analysis is as follows:

Financial Statements Line Items	Acronym
<i>Income Statement</i>	
Sales (Turnover)	TO
Cost of goods sold	COGS
Gross Profit	GP
Operating expenses (Include selling, general and admin expenses, depreciating expenses often referred to as "SG&A")	OPEX
Earnings before interest and tax (also referred to as profit before interest and tax "PBIT")	EBIT
Interest expense	Int
Earnings before tax	EBT
Net Profit	NP
<i>Balance Sheet</i>	
<b>Assets</b>	
Cash and cash equivalents	Cash
Accounts receivables	Rec
Inventory	Inv
Other current assets	OCA
Current Assets	CA
Fixed assets (Net of depreciation)	FA
Property plant and equipment	PPE
Intangible assets	IA
Total Assets	TA
<b>Liabilities</b>	
Accrued expenses	AE
Accounts payable	Pay
Other Current liabilities	OCL
Current liabilities	CL
Long term debt	Debt
Equity	eQ

### 1.6.15 Financial transaction

The definition of services, as contained in Section 31 of the Income Tax Act, includes financial transactions and would thus apply to non-arm's length interest, discounts and other payments for the use of money.

### 1.6.16 Functional analysis

A functional analysis is a practical way of evaluating functional comparability; it is a method of finding and organising facts about a business' functions, assets (including intangible property) and risks it assumes. It aims to determine how these (functions) are divided amongst the parties involved in the transaction under review. A functional analysis identifies the economically

significant activities (functions performed, assets employed and risks assumed) that are undertaken by the member of an MNE, and for which it should expect to be rewarded. This identifies the nature and characteristics of the connected party dealings that have to be priced.

### **1.6.17 Globalisation**

Globalisation is the multiplicity of linkages and interconnections amongst countries, which make up the present world system. Globalisation describes the process by which events, decisions, and activities in one part of the world come to have significant consequences for individuals and communities in quite distant parts of the globe.

Globalisation has two distinct dimension, firstly scope (or stretching) and secondly, intensity (or deepening). On one hand, globalisation defines a set of processes which embrace most of the globe or which operate worldwide, the spatial connotation. On the other hand, globalisation also implies intensification on the levels of interaction, interconnectedness or interdependence amongst countries which constitute the world community.

### **1.6.18 Intangible property**

The term “intangible property” includes the rights to use industrial assets such as patents, trade marks, trade names, designs or models. PN 7 (South Africa, 1999:36) refers to Chapter VI of the OECD Guidelines, which deals specifically with intangible property. Chapter VI of the OECD Guidelines (OECD, 1995:VI-1) discusses special considerations that arise in seeking to establish whether the conditions made or imposed in transactions amongst associated enterprises involving intangible property reflect arm’s length dealings.

### **1.6.19 Juridical double taxation**

Juridical double taxation is the imposition of comparable taxes in two (or more) countries on the same taxpayer in respect of the same subject matter and for identical periods.

### **1.6.20 Know-how**

Know-how is all the undivulged technical information, whether capable of being patented or not, that is necessary for the industrial reproduction of a product or process. This could be directly and under the same conditions; in as much as it is derived from experience, know-how represents that

a manufacturer cannot know from mere examination of the product and mere knowledge of the progress of technique (OECD, 2000:152).

### **1.6.21 Managed or Controlled**

The concept of “managed or controlled” is used a number of times in the definition and the scope thereof is intended to be wider than the term “managed and controlled”, as used in other sections of the Act. In order to determine the place where an entity is managed or controlled, regard will be had to the business activities of the entity and business activities of connected parties, as well as the degree of autonomy under which the entity operates.

The South African Revenue Services (SARS) is of the view that the control of an entity is to be found at the meeting place of the persons who exercise authority over and control direction of the entity’s business operations. Its directors generally control a company. However, situations may be encountered where the directors of a company’s holding company or ultimate holding company effectively exercise control. The question of where the shareholders may reside or meet in an annual general meeting (in the case of a company) is therefore irrelevant.

The place where directors and other persons performing the same functions (in the case of entities other than companies) usually exercise their functions and direct the affairs of the entity is an indication of where an entity is controlled. In most cases, this will be the place where the entity's head office is located. The place where an entity is managed is usually the place where the day-to-day running of the business activities takes place. From the above it is evident that the place from which an entity is controlled is not necessarily the place from which it is managed.

### **1.6.22 Marketing intangible**

An intangible attributable to marketing activities of the enterprise, which advance the commercial exploitation of a product or service and/or has an important promotional value for the product concerned. Marketing intangibles as opposed to commercial intangibles, on the other hand is a special type of commercial intangible with a somewhat different nature. It includes trademarks and trade names that aid in the commercial exploitation of a product or service, customer lists, distribution channels and unique names, symbols or pictures that have an important promotional value for the product or services concerned.

Some marketing intangibles such as trademarks might be protected by law in the country concerned and used only with the owner's permission for the relevant product or services. The value of such intangible depends on a number of factors including the reputation and credibility of the trade name or trade mark fostered by the quality of goods and services provided under the name in the past, the degree of quality control, ongoing research and development, distribution and availability of goods and services being marketed (OECD, 1995:VI-2).

Intellectual property such as know-how and trade secrets can be trade intangibles or marketing intangibles. Know-how and trade secrets are proprietary information or knowledge that assist or improves a commercial activity, but that is not registered for protection similar to a patent or trademark.

### **1.6.23 Multinational Enterprises (MNE's)**

PN 7 (South Africa, 1999: 4) refers to a multinational and the OECD Guidelines (OECD, 1995: G-6) refers to an MNE with the term used to refer to any group of connected parties with members or business establishments in two or more countries. The term "members" refers to constituent parts (including natural persons) of that MNE, each having a separate legal existence.

Within the context of this research no distinction is made amongst the multinational, global, international and transnational enterprise (a term used in UNCTAD literature, transnational corporations (TNC's) comprise parent enterprises and their foreign affiliates with a parent enterprise being defined as one that controls assets of another entity or entities in a country or countries other than its home country, usually by owning a capital stake with an equity capital stake of at least 10% which is normally considered as a threshold for the control of assets in this context.) (UNCTAD, 2002:5).

### **1.6.24 Mutually exclusive**

Mutually exclusive means that the same aspect should not be measured twice.

### **1.6.25 Permanent Establishment**

Article 5 of the OECD "Model Tax Convention on Income and on Capital" (OECD, 2000:26) provides a definition of a Permanent Establishment (PE).

“Paragraph 1 For the purposes of this Convention, the term “permanent establishment” means a fixed place of business through which the business of an enterprise is wholly or partly carried on.

Paragraph 2 The term “permanent establishment” includes especially:

- a) a place of management;
- b) a branch;
- c) an office;
- d) a factory;
- e) a workshop, and
- f) a mine, an oil or gas well, a quarry or any other place of extraction of natural resources

Paragraph 3 A building site or construction or installation project constitutes a permanent establishment only if it lasts more than twelve months.

Paragraph 4 Notwithstanding the preceding provisions of this Article, the term “permanent establishment” shall be deemed not to include:

- a) the use of facilities solely for the purpose of storage, display or delivery of goods or merchandise belonging to the enterprise;
- b) the maintenance of a stock of goods or merchandise belonging to the enterprise solely for the purpose of storage, display or delivery;
- c) the maintenance of a stock of goods or merchandise belonging to the enterprise solely for processing by another enterprise;
- d) the maintenance of a fixed place of business solely for the purpose of purchasing goods or merchandise or of collecting information, for the enterprise;
- e) the maintenance of a fixed place of business solely for carrying on, for the enterprise, any other activity of a preparatory or auxiliary character;
- f) the maintenance of a fixed place of business solely for any combination of activities mentioned in subparagraphs (a) to (e), if the overall activity of the fixed place of business resulting from this combination is of a preparatory or auxiliary character.

Paragraph 5 Notwithstanding the provisions of paragraphs 1 and 2, where a person - other than an agent of an independent status to whom paragraph 6 applies - is acting on behalf of

an enterprise and has, and habitually exercises, in a Contracting State an authority to conclude contracts in the name of the enterprise, that enterprise shall be deemed to have a permanent establishment in that State in respect of any activities which that person undertakes for the enterprise, unless the activities of such person are limited to those mentioned in paragraph 4 which, if exercised through a fixed place of business, would not make this fixed place of business a permanent establishment under the provisions of that paragraph.

Paragraph 6 An enterprise shall not be deemed to have a permanent establishment in a Contracting State merely because it carries on business in that State through a broker, general commission agent or any other agent of an independent status, if such persons are acting in the ordinary course of their business.

Paragraph 7 The fact that a company which is a resident of a Contracting State controls or is controlled by a company which is a resident of the other Contracting State, or which carries on business in that other State (whether through a permanent establishment or otherwise), shall not of itself constitute either company a permanent establishment of the other. ”

### **1.6.26 Residence**

Article 3 of the OECD Model Tax Convention on Income and on Capital (OECD, 2000:23) provides a definition of residence.

“For the purposes of this Convention, the term "resident of a Contracting State" means any person who, under the laws of that State, is liable to tax therein by reason of his domicile, residence, place of management or any other criterion of a similar nature, and also includes that State and any political subdivision or local authority thereof. This term, however, does not include any person who is liable to tax in that State in respect only of income from sources in that State or capital situated therein. (1)

Where by reason of the provisions of paragraph 1 an individual is a resident of both Contracting States, then his status shall be determined as follows (2):

a) he shall be deemed to be a resident only of the State in which he has a permanent home available to him; if he has a permanent home available to him in both States, he shall be deemed to

be a resident only of the State with which his personal and economic relations are closer (centre of vital interests);

b) if the State in which he has his centre of vital interests cannot be determined, or if he has not a permanent home available to him in either State, he shall be deemed to be a resident only of the State in which he has an habitual abode;

c) if he has a habitual abode in both States or in neither of them, he shall be deemed to be a resident only of the State of which he is a national;

d) if he is a national of both States or of neither of them, the competent authorities of the Contracting States shall settle the question by mutual agreement.

Where by reason of the provisions of paragraph 1 a person other than an individual is a resident of both Contracting States, then it shall be deemed to be a resident only of the State in which its place of effective management is situated. (3)”

### **1.6.27 Royalty**

Royalty (South Africa 2002:35) is defined as any amount received by or accrued to any person as consideration for the use of, or the right to use, any copyright of literary, artistic or scientific work (including cinematograph films and films, tapes or discs for radio or television broadcasting), any patent, trade mark, design or model, plan, secret formula or process, or any other property or right of a similar nature, or for information concerning industrial, commercial or scientific experience (refer also to section 9 (1) (b), (bA), section 9C (1) (c) and section 35 of the Act).

The term royalties as defined in the OECD Model (OECD, 2000:33) under Article 12 means payments of any kind received as a consideration for the use of, or the right to use, any copyright of literary, artistic or scientific work including cinematograph films, any patent, trade mark, design or model, plan, secret formula or process, or for information concerning industrial, commercial or scientific experience.

### **1.6.28 Safe harbour**

Safe harbour, in the context of the arm’s length principle, is defined by the OECD Guidelines (OECD, 1995:IV-32) as “...providing circumstances in which taxpayers could follow a simple set

of rules under which transfer prices would be automatically accepted by the national tax administration. Such provisions would be referred to as a “safe harbour” or “safe haven”. A safe harbour is a statutory provision that applies to a given category of taxpayers and that relieves eligible taxpayers from certain obligations otherwise imposed by the tax code by substituting exceptional, usually simpler obligations.

In the specific instance of transfer pricing, the administrative requirements of a safe harbour varies from total relief of targeted taxpayers from the obligation to conform with a country’s transfer pricing legislation and regulations to the obligation to comply with various procedural rules as a condition for qualifying for the safe harbour. These rules could require taxpayers to establish transfer prices in a specific way, i.e. by applying a simplified transfer pricing method provided by the tax administration, or to satisfy specific information reporting and record maintenance provisions with regard to controlled transactions.

#### **1.6.29 Section 31 of the Income Tax Act No. 58 of 1962**

The particular section of the Income Tax Act No. 58 of 1962 (the Act) is as follows:

South Africa (2002:236) Section 31. “Determination of taxable income of certain persons in respect of international transactions.

(1) For the purposes of this section—

“goods” includes any corporeal movable thing, fixed property and any real right in any such thing or fixed property;

“international agreement” means a transaction, operation or scheme entered into amongst

- (a) (i) a resident; and
- (ii) any other person who is not a resident; or
- (b) (i) a person who is not a resident; and
- (ii) any other person who is not a resident,

for the supply of goods or services to or by a permanent establishment of either of such persons in the Republic; or

- (c) (i) a person who is a resident; and
- (ii) any other person who is a resident,

for the supply of goods or services to or by a permanent establishment of either of such persons outside the Republic; or

- (d) (i) a person who is a resident; and
- (ii) any other person who is a resident,

where either of such persons is as a result of the application of the provisions of any agreement entered into by the Republic for the prevention of double taxation, not subject to tax in the Republic; and

[Definition of “international agreement” substituted by s. 37 (1) of Act No. 30 of 1998, amended by s. 31 (1) of Act No. 53 of 1999 and substituted by s. 37 (a) of Act No. 59 of 2000.]

Wording of Sections

“permanent establishment” . . . . .

[Definition of “permanent establishment” inserted by s. 37 (b) of Act No. 59 of 2000 and deleted by s. 16 of Act No. 5 of 2001.]

Wording of Sections

“services” includes anything done or to be done, including, without limiting the generality of the foregoing—

- (a) the granting, assignment, cession or surrender of any right, benefit or privilege;
- (b) the making available of any facility or advantage;
- (c) the granting of financial assistance, including a loan, advance or debt, and the provision of any security or guarantee;
- (d) the performance of any work;
- (e) an agreement of insurance; or
- (f) the conferring of rights to incorporeal property.

(2) Where any goods or services are supplied or acquired in terms of an international agreement and—

- (a) the acquirer is a connected person in relation to the supplier; and
- (b) the goods or services are supplied or acquired at a price which is either—
  - (i) less than the price which such goods or services might have been expected to fetch if the parties to the transaction had been independent persons dealing at arm’s length (such price being the arm’s length price); or
  - (ii) greater than the arm’s length price,

then, for the purposes of this Act in relation to either the acquirer or supplier, the Commissioner may, in the determination of the taxable income of either the acquirer or supplier, adjust the consideration in respect of the transaction to reflect an arm's length price for the goods or services.

(3) (a) Where any person who is not a resident (hereinafter referred to as the investor) has granted financial assistance contemplated in paragraph (c) of the definition of "services" in subsection (1), whether directly or indirectly, to—

(i) any connected person in relation to the investor who is a resident; or

[Sub-para. (i) substituted by s. 37 (c) of Act No. 59 of 2000.]

Wording of Sections

(ii) any other person (in whom he has a direct or indirect interest) other than a natural person, which is a resident (hereinafter referred to as the recipient) and, by virtue of such interest, is entitled to participate in not less than 25 per cent of the dividends, profits or capital of the recipient, or is entitled, directly or indirectly, to exercise not less than 25 per cent of the votes of the recipient,

[Sub-para. (ii) substituted by s. 37 (c) of Act No. 59 of 2000.]

Wording of Sections

and the Commissioner is, having regard to the circumstances of the case, of the opinion that the value of the aggregate of all such financial assistance is excessive in relation to the fixed capital (being share capital, share premium, accumulated profits, whether of a capital nature or not, or any other permanent owners' capital, other than permanent capital in the form of financial assistance as so contemplated) of such connected person or recipient, any interest, finance charge or other consideration payable for or in relation to or in respect of the financial assistance shall, to the extent to which it relates to the amount which is excessive as contemplated in this paragraph, be disallowed as a deduction for the purposes of this Act.

[Para. (a) amended by s. 37 (c) of Act No. 59 of 2000.]

Wording of Sections

(b) For the purposes of paragraph (a), financial assistance granted indirectly shall be deemed to include any financial assistance granted by any third person who is not a connected person in relation to the investor, a connected person contemplated in paragraph (a) or the recipient, where such financial assistance has been granted by arrangement, directly or indirectly, with the investor and on the strength of any financial assistance granted, directly or indirectly, by the investor or any connected person in relation to the investor, to such third person.

[S. 31 substituted by s. 23 (1) of Act No. 21 of 1995.]”

### **1.6.30 Trade intangible**

Trade intangible is a commercial intangible other than a marketing intangible.

### **1.6.31 Tax treaties**

Article 7 of the OECD Model Tax Convention on Income and on Capital (OECD, 2000:28) provides *inter alia* for the attribution of profits to a permanent establishment of an enterprise. Article 9 (OECD, 2000:30) stipulates that the arm's length principle must be applied to commercial and financial relations amongst associated companies residing in the contracting states. These principles are embodied in each of South Africa's tax treaties. Tax treaties cannot impose tax liability; they merely allocate existing tax liabilities amongst countries.

### **1.6.32 Transfer prices**

Transfer prices are the prices at which an entity transfers goods and services to connected parties.

### **1.6.33 Transfer pricing**

The term transfer pricing describes the process by which entities set the prices at which they transfer goods or services amongst each other.

### **1.6.34 Tested party**

The tested party is the member of the MNE who is the subject of the analysis for which the arm's length consideration is determined.

### **1.6.35 Uncontrolled transaction**

An uncontrolled transaction is a transaction, which is concluded at arm's length amongst enterprises that are not, connected parties in relation to each other. This could, for example, include transactions at arm's length amongst a member of an MNE and an unconnected person. Uncontrolled transactions form the benchmark against which an MNE's transfer pricing is appraised in determining whether its prices are arm's length.

## 1.7 Layout of the research

**Chapter Two** investigates globalisation within the context of transfer pricing. The chapter commences with globalisation, its origin and current discernible trends, explores the openness of the South African economy. The progressive evolution of the MNE are explored insofar as international production and its policies and practices of income distribution with the accompanying challenge of tax exposure for MNE's and tax collection for administrations, in particular transfer pricing.

International tax is explored with reference to FDI flows within the MNE. Examples are used to illustrate the various concepts involved in international tax and transfer pricing. In order to explain the various concepts reference to the *country of origin* will be referred to as "**Home**" and the *recipient country* as "**Foreign**".

In **Chapter Three** the focus moves from globalisation and the MNE towards the pricing of the consequent international transactions. Regulations, international standards, transfer pricing methodologies are investigated in detail. The South African regulations and legislation is incorporated into the chapter to provide a clear understanding of the regulatory and legislative requirements of South Africa within the bigger global reference.

In **Chapter Four** a comparability adjustment transfer pricing model is developed. Adjustments to potentially comparable data are investigated in order to enhance comparability objectively in accordance with the arm's length principle, encapsulated by the comparability adjustment transfer pricing model (CATPM). PN 7 (South Africa, 1999:10) as well as the OECD Guidelines (OECD, 1995:I-9) promulgates the use of adjustments in order to obtain a result that is consistent with the arm's length principle.

Difficulties exist in the determination of an appropriate adjustment that takes cognisance of economic conditions in the various markets. The CATPM recognises factors that influences profitability and by virtue of multiple regression analysis estimate objectively "what would have been" in accordance with paragraph 1 of Article 9 of the OECD Model Tax Convention.

**Chapter Five**, encompass the evaluation and determination of the arms' length consideration of a South African member of an MNE, ZA Case 01. The investigation follows the South African

transfer pricing rules with reference to the OECD Guidelines. The CATPM is applied to ZA Case 01 in conjunction to the current approach used in South Africa.

The comparative analysis part of the research makes use of international comparables published by Bureau Van Dijk's Amadeus Database with information of approximately 1.2 million companies in Europe. The evaluation of ZA Case 01 are based on the data so obtained and the consideration consistent with the arm's length principle so determined, applied and tested to the actual financial and commercial information of ZA Case 01. The arm's length consideration and a conclusion on the nature of ZA Case 01 connected party dealings are drawn.

In **Chapter Six** the results of the CATPM are interpreted and recommendations concerning the implementation of the CATPM in the administration of transfer pricing in South Africa are made that could potentially influence current best practices. Recommendations for further research are explored.

## **1.8 Summary**

The formulation of "what would have been" contained paragraph 1 of Article 9 of the OECD Model Tax Convention, the comparative benchmark, could be subjective and ambiguous. Ambiguity is acknowledged with reference to transfer pricing being regarded as a non-exact science and "requires judgment".

The OECD guidelines clarify ambiguity in terms of the transfer price may have to be estimated within a range of acceptable figures with the assistance of transfer pricing methodologies with the choice of methodology for establishing arm's length transfer price not often be unambiguously clear. This research aims to **clarify** some of the uncertainty surrounding the ambiguity surrounding the "what would have been" hypothesis, which forms the basis of the arm's length principle.

In South Africa, the biggest constraint in administering transfer pricing is the unavailability of South African comparables, which necessitates the use of foreign comparable information. Alternative approaches and methodologies are used in the determination of transactional prices of connected party dealings. Working capital adjustments that are based on adjustments to financial statements of comparables to enhance comparability serve as an example.

This research aims to provide greater clarity on “what would have been” as envisaged by the arm’s length principle. The CATPM makes use of the comparables determined in accordance with comparability requirements, identifying factors (determined from the financial statements of comparables) that influences profitability and by virtue of a multi regression analysis model estimate objectively “what would have been” in accordance with paragraph 1 of Article 9 of the OECD Model Tax Convention. The CATPM provides an approach, which limits subjectivity and the non-exact nature of transfer pricing through multiple regression analysis, and provides a consistent approach in the determination of the arm’s length consideration. A multi regression model that estimates the arm’s length consideration based on the factors (that influences profitability), as determined by the comparables is clearly a substantial enhancement in the objective determination of a transfer price.

The consistent, objective measures of the approach provide considerable potential use for managers of MNE’s and tax administrations alike. Uncertainty concerning the interpretation and the judgment of the facts, which affects the arm’s length principle, is greatly reduced. The determination of the arm’s length consideration is based on the factors that influence profitability. These factors are established through multiple regression. The arm’s length range so determined will be based on the same factors, objectively determined, irrespective if the management of the MNE or the tax authority executes the CATPM model.

## Chapter 2      Transfer pricing in a globalising world

### 2.1 Introduction

Transfer pricing involves a process by which entities set the prices at which they transfer goods or services amongst each other. Conversely, a transfer price is the price at which an entity transfers, buys or sell goods or services. Within an MNE context, transfer prices have a direct bearing on the proportional profit the MNE derives in each country in which it operates.

If an excessive consideration is paid for the transfer of goods or services between the members of an MNE, the profit calculated for each of those members will be inconsistent with their relative economic contribution to the transfer (transaction.) For example, when a member of the MNE receives an excessive consideration for the selling of goods or services, profit is inflated (for the selling member) whilst the converse is true for the member who pays the consideration. This distortion impacts on profit calculations for members of the MNE within the geographical market they operate. In addition to the profit so recognised by the MNE, the recognised profit impacts on the tax revenues of the tax jurisdictions in which the MNE operate.

MNE's operate in an increasing globalising world. Deprez (2003:387) and Dunning (2001:207) views globalisation as a significant increase in economic interaction amongst different national economies resulting in a qualitative repositioning of relationships amongst various countries. The economic interaction is observable as MNE activity. UNCTAD (2002:xv) shares this view, indicating that a trend of interconnectedness of enterprises is apparent. Globally 64 000 MNE's control 870 000 foreign affiliates (UNCTAD, 2002:xv).

Against this background of economic interaction and the interconnectedness of enterprises, *transfer pricing is becoming increasingly important, for managers of MNE's and tax administrations alike.* The importance of transfer pricing is confirmed by Ernst and Young (2005:5) who reported that since 1995, *transfer pricing remains the prominent international tax issue for MNE's.* The 2003 research reiterated the importance of transfer pricing stating that *eighty-six per cent of parent companies and ninety-three per cent of subsidiaries identified transfer pricing as the most important international tax issue on the agenda* (Ernst and Young, 2003:7).

## 2.2 The context of globalisation

Dunning (2002:207) reiterates that consumers and competitors pressurise enterprises to perpetually introduce new products, enhance the quality, and reduce relative prices of goods and services thereby providing impetus to globalisation. This observation of Dunning effectively amounts to demand pull caused by external forces. Storm and Naastepad (2001:2) support Dunning's view of customers and competitors' demand-pull. Their perception is that perpetual innovation aimed at minimising escalating cost of research and development, shortening of product life cycles and searching for wider markets are an essential response to the external pressure.

The views and perceptions on globalisation, expressed by Dunning, Storm and Naastepad are significant in terms of transfer pricing. In the determination of transfer prices by MNE's cognisance of shortened product life cycles, new product introduction, downward pressure on prices and cost that implicitly affect profits, must be considered.

The convolution of transfer pricing is augmented by market supporting policies promulgated by national governments through the growth of market led regional integration. Tax competition (refer to section 2.4.2 for more detail), is a widely used instrument by national governments to achieve market growth. The lowering of trade barriers such as tariffs as well as tax incentives are examples of what Dunning identified as obstacles (2001:208). With globalisation gaining momentum and still growing, the transfer pricing challenge remains a prominent issue and increases in importance (Ernst & Young, 2001:5, and 2003:7).

Storm and Naastepad (2001:2) views the context of globalisation as the removal of barriers that inhibit international trade, investment and finance and identify two fronts on which it occurs:

- Firstly, the technological revolution in transport, communication and information technology and the reduced cost of international transactions makes participation in international trade easier.
- Secondly, globalisation is possible by accelerated trade liberalisation, substantial foreign direct investment (FDI) and foreign capital flows amongst countries. Foreign direct investment (FDI) global inflows into recipient countries increased from US\$ 59 billion in 1982 to US\$ 651 billion in 2002 at current prices with the annual growth rate 40.2 per cent in FDI inflows from 1996 to 2000 (UNCTAD, 2003:2).

These aforementioned globalisation views, referred to as removal of barriers, expressed by Dunning, Storm and Naastepad confers with the views of Deprez (2003:369), Dunning (2001:208), Dunning (2002:378) and Rakshit (2001:157). The integration is facilitated by technology enhancement and trade liberalisation, which occurs globally. This research is concerned with trade amongst members of the same entity, which operates globally, and in particular, the prices of such trade, commonly referred to as transfer pricing. Globalisation can be seen as the catalyst with the MNE as the architect of transfer pricing, hence, this chapter follows a similar approach.

Perez (1998:20) confirms the importance of technology, attributes technology as a major driving force in globalisation, and expands this view by drawing a continuum regarding technology and the MNE as mutually dependent. This view of Perez is corroborated by a survey conducted amongst managers of MNE's who perceives transactions involving intangibles and technology cost sharing agreements are more susceptible for transfer pricing audits in 2003 than in 2001 (Ernst & Young, 2001:5 and 2003:7).

Globalisation has two distinct dimensions; firstly scope (or stretching) and secondly, intensity (or deepening). On one hand, globalisation defines a set of processes which embrace most of the globe or which operate worldwide, the spatial connotation. On the other hand, globalisation also implies intensification on the levels of interaction, interconnectedness or interdependence amongst countries, which constitute the world community (Dunning, 2002:378).

Globalisation comprises structural transformation that affects enterprises and countries giving rise to new relationships and interdependencies. Globalisation creates a multiplicity of linkages and interconnections amongst countries and societies, which make up the present world system (Dunning, 2001:207 and 2002:83).

The multiplicity of linkages and interconnections is aligned to the spatial perspective, linking globalisation with the MNE insofar as it relates to an integrated production network being spread over various geographic locations, a form of economic integration stretching national boundaries. Transfer pricing concurs with this view, MNE's are impacted insofar as securing production factors (raw material, labour, capital and entrepreneurship) and markets to secure sustainable profitability. Countries, in which MNE's operates, are being affected by their ability to provide

production factors, secure market related payment as well as protecting their respective tax base through transfer pricing.

The impact the 9/11 terrorist attacks on the World Trade Centre had on the global economy emphasises another aspect of globalisation. Globalisation describes the process by which events, decisions, and activities in one part of the world come to have significant consequences for individuals and communities in quite distant parts of the globe. Divergence rather than convergence is observable if the massive increase in inequalities amongst nations is taken into account in the era of modern economic growth, which does not inspire confidence (Rao, 2001:50).

### **2.2.1 South Africa's economic integration**

In defining globalisation, it is apparent that the phenomenon is discernable as structural transformation affecting enterprises (such as the MNE) and countries, giving rise to new relationships and interdependencies. This economic integration amongst enterprises, which stretches across national boundaries, gives rise to multinational value creating activities resulting in the MNE earning economic rent in multiple countries, a form of cross-border economic integration.

The measurement of economic rent or return, within national parameters because of economic integration, and the subsequent tax consequence provides multinational and national challenges, which are addressed through transfer pricing regulations. Evidence of such economic integration exists and South Africa, post-1994 and democratisation became part of the phenomenon.

South Africa experienced a noticeable increase in economic integration since 1994. In order to illustrate the concepts concerning globalisation, an empirical analysis within the domain of international tax and transfer pricing is imperative. The empirical analysis is two-fold. Firstly, a measure of openness of the South African economy is undertaken and secondly, branch payments and receipts are used as an indicator of connected party dealings.

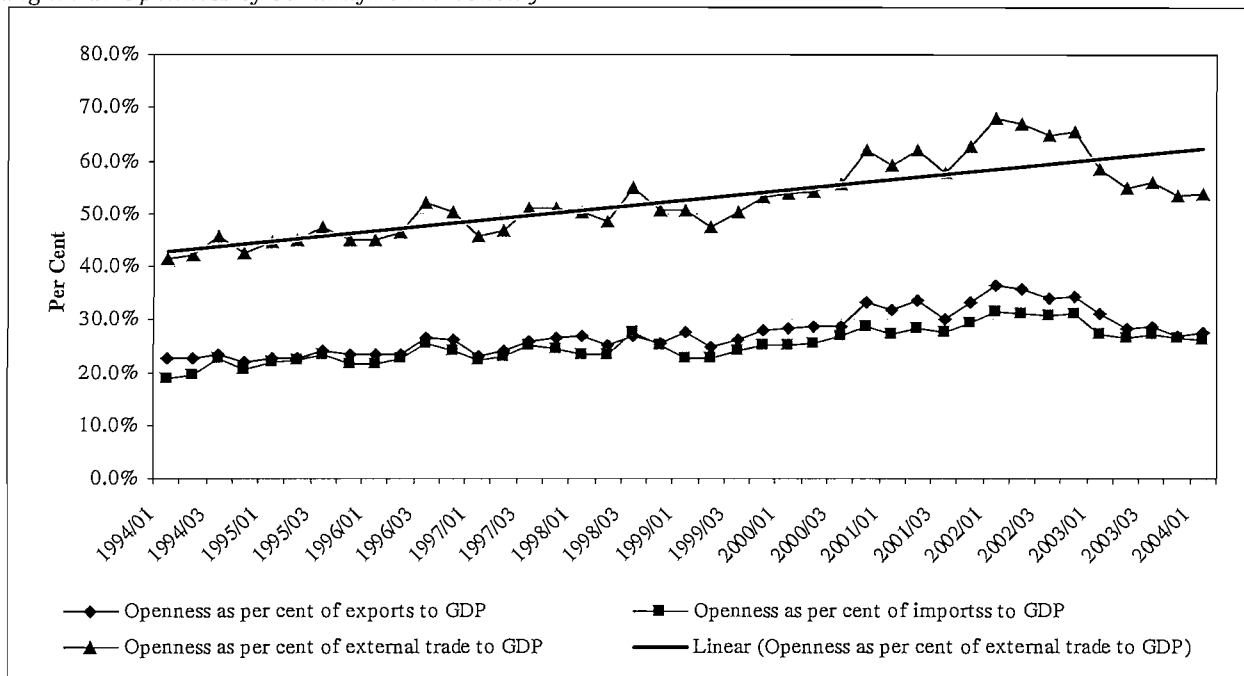
#### ***2.2.1.1 Openness of the South African Economy***

Openness of an economy can broadly be defined as the relation of exports and imports to gross domestic product (GDP) of the economy. It provides a measure of exposure to international trade and business trends. From an international tax and transfer pricing perspective, it is indicative of

the level of international interaction of the economy with a significant number of participants in the international interaction being driven by MNE's and connected party dealings.

Ordinarily, one would expect that a measure of openness would be directly indicative of the prevalence of international trade as well as the volume and value of potentially connected party dealings. It would also indicate the probability of multinational transactional activity in line with the underlying trend as illustrated in Figure 1.

Figure 1: Openness of South African Economy



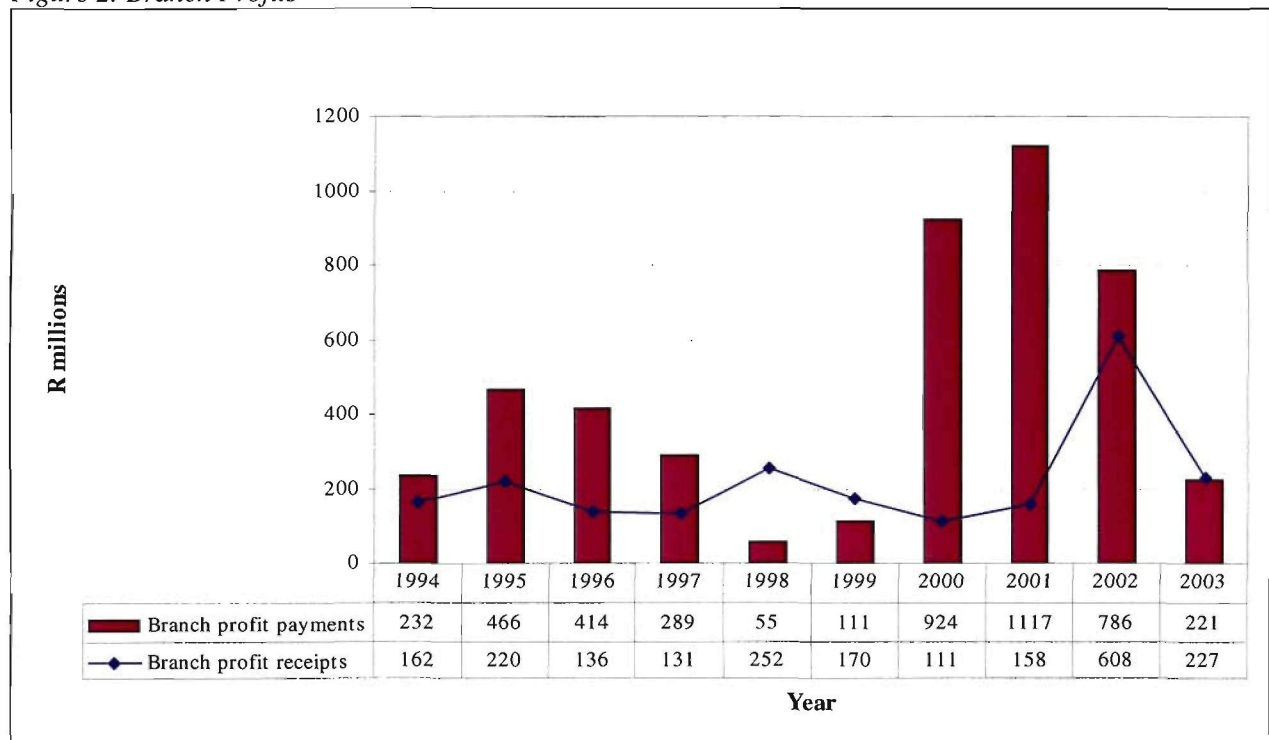
(Source: Own compilation from SARB Quarterly Bulletins)

From the illustration, it is apparent that since South Africa's re-entering the global marketplace, the economy opened up considerably. Openness peaked at 68 per cent of GDP during the first quarter of 2003 and declined since then, predominantly due to the relative strength of the domestic currency compared to the US\$. However, if the trend of the data is taken into consideration, it is apparent that international trade integration can be expected to continue which in turn would require additional resources to administer international tax and transfer pricing regulations in order to prevent the erosion of the tax base.

### 2.2.1.2 South African branches of foreign entities

A further measure of the magnitude of international transactions, which are intricately linked to the provisions of international tax and transfer pricing legislation are the prevalence and trends observable with regard to branch profits. Although branches are not considered within the ambit of Section 31 of the Act, nor a focus of this research, the arm's length principle is a prerequisite under the Double Taxation Agreements. Within this context, the arm's length nature of dealings amongst branches and their respective Head Quarters are administered.

Figure 2: Branch Profits



(Source: Own compilation from SARB Quarterly Bulletins)

Figure 2 is indicative of the magnitude of branch profit receipts and payments of South African branches to their respective foreign Head Quartered companies. The observed volatility and magnitude of these transactions makes it imperative to evaluate these receipts and payments in respect of the arm's length principle. In the absence thereof, it is not implausible that the tax base could emigrate with relative ease. The administration of the arm's length principle with respect to branches are not dealt with in this research, however, it has illustrative value within the context of this research.

A foreign Head Quartered company could set up a business enterprise, with relative ease as a branch in another country if compared to the legislative requirements to set up a foreign subsidiary. Branches of foreign Head Quartered companies, is predominantly financial services entities, which provides access to foreign capital and related services for domestic firms within the country where it is resident.

In Appendix 1 a detailed list of branches of foreign Head Quartered, companies are provided. In 2005, there were 79 branches of foreign Head Quartered companies providing financial and general services to companies in South Africa. The prevalence of branches in the other sectors of the economy is not as profound as in financial services and general services sectors due to factors such as regulatory requirements. Regulatory requirements ranges from registration as a taxpayer, obtaining a license i.e. insurance, to registration by the medicines control council if you are a pharmaceutical company.

### **2.2.2 Phases of globalisation**

Globalisation is dynamic with capital and production becoming a driving force towards economic integration notwithstanding the current traditional boundaries. Globalisation encompasses much more than the lowering of tariffs and the elimination of non-tariff barriers (Deprez, 2003:369, Dunning, 2002:378 and Rakshit, 2001:157).

This view is echoed by Storm and Naastepad (2001:2) who are of the opinion that globalisation was made possible by rapid trade liberalisation as well as technological revolution. Globalisation is a process of change with a definitive starting point and moving on a continuum of irrevocable change, with change clearly discernable into phases. The phases have unique characteristics attributable to it hence, classification is possible. Deprez (2003:367-373) stipulates that globalisation encompass three, distinct phases:

- In the first phase, the focus is on breaking down of traditional trade barriers,
- in the second phase the focus shifts towards deregulation and privatisation and,
- in the third phase, international coordination, harmonisation and standardisation become key issues.

Transfer pricing, can be positioned within each of these phases with MNE's making use of the opportunities presented within each one of the discernable phases.

### ***2.2.2.1 Phase 1: Breaking down of traditional trade barriers***

During the *first phase of globalisation*, traditional trade barriers according to Deprez (2003:371), Dunning (2002:44), Lindert (1991:279) and Root (1978: 134–143) such as *tariffs, quotas, and non-tariff barriers such as import licences, product standards and bureaucratic red tape* are reduced and the aim is final abolishment. The General Agreement on Tariff and Trade (GATT) established in 1947 was initially devoted to the promotion of freer trade through multilateral trade negotiations in the trade of goods (Salvatore, 1987:228). According to Salvatore (1987:228) and Bennett (1999:13), GATT was based on three basic principles:

- firstly, on non-discrimination which accepts the most favoured nation principle
- secondly, on elimination of non-tariff barriers with the exception of agriculture products and for nations experiencing balance of payments difficulties
- thirdly, it was geared towards consultation amongst nations in solving trade disputes within the GATT framework, being replaced by the World Trade Organisation (WTO)

An attempt is made to settle disputes through bilateral talks and if the dispute cannot be settled, a working party is convened to investigate the matter and make recommendations accordingly. Should an offending country ignore the recommendations of the working party, the aggrieved country is permitted to retaliate (Bennett, 1999: 13).

Using the European integration as an example, with the Internal Market Program (IMP) being initiated by the European Commission in Brussels in 1985, the intention was the removal of all the remaining non-tariff barriers to trade in goods, services and assets amongst the member countries by the mid nineties. Dunning (2002:252) estimates that amongst 1985 and 1990 12-member states had 319 directives, which intended to remove or drastically reduce trade barriers. The World Investment Report sustains the view that since the dismantling of trade barriers has gained momentum, it allowed MNE's to pursue integrated international production strategies resulting in a portfolio of locational, or geographical dispersed assets, which provide diversification opportunities during economic turmoil (UNCTAD, 2003:27).

### 2.2.2.2 Phase 2: Privatisation and deregulation

With the advent of reducing trade barriers and non-tariff barriers, classified as phase one of globalisation, it is expected that sequential domestic economic adjustment needs to take place to give effect to these changes. During the second phase of globalisation, (Deprez 2003:372) the *restructuring of the domestic economy* is characterised by deregulation and privatisation.

#### 2.2.2.2.1 Privatisation

Privatisation by nature is not sustainable due to a relative *small, finite amount of centrally controlled companies that can be privatised*, and the FDI attracted in the event of privatisation is volatile (Adelman and Nak, 2001: 90). In South Africa, the steel producer ISCOR, synthetic fuel producer SASOL and Telkom, the fixed line telephone services provider were privatised.

Privatisation can result in *increased transfer pricing risk*. The privatisation of ISCOR in the South African economy is a case in point. The initial beneficiaries of the Iscor privatisation were employees, the general South African population and institutional investors. Unfortunately, shareholding tends to change, and in the Iscor example, Mittal Steel, bought out minorities, adding Iscor to its list of acquisitions. Iscor is an integral part of the Mittal Group with its influence stretching far beyond the national boundaries of South Africa, which give rise to transfer pricing risk. *Transactions, which were not previously recorded (before Iscor became part of Mittal), are becoming part of the MNE's transactions*. Management services are provided from India and London and supply agreements between members of the MNE, essentially Mittal Group companies replaced previous 3<sup>rd</sup> party supply agreements.

Privatisation can cause economic mayhem. Korea is a prime example. During the sixties and seventies, banks in Korea were under strict, centralised, government control with some specialised government owned banks. Privatisation in Korea started in the early eighties albeit under strict central control concerning lending. Banks were mandated by the Korean government to provide solvency to the corporate sector and support social incentives. Encouragement was extended to grant loans to aspiring homeowners (social policy) and instructed banks not to call on corporate loans in 1992 and 1997.

The expected moratorium on the calling of corporate loans lead to an unsustainable situation, banks were left with a very risky portfolio of loans with little, if any screening of projects and

credit-worthiness of borrowers. When the banks were privatised, the balance sheets of the banks were not purged of dubious assets, the legacy of dubious and questionable loans albeit that the banks enjoyed in essence insurance from insolvency from the central government increased the risk of failure (Adelman and Nak, 2001:91-93).

Historically, the Korean environment was centrally controlled and protected. With liberalisation and the consequential opening up of the Korean economy, the institutional Korean problems were compounded by deficiencies of the international financial system with vast quantities of money being transferred; resulting in the implosion of the Korean system (Adelman and Nak, 2001:93). Similarities between privatisation in Korea and Eastern Europe exist. Bennett identified the following difficulties experienced with privatisation in East Europe (1999:65):

- Many enterprises fail immediately upon their entry to the free market, leaving investors with worthless investments.
- Price reductions and special inducements needed to unload certain enterprises might be very costly to the national authorities, which could in turn render the venture uneconomical.
- Administrative systems established to organise privatisation are more often than not bureaucratic and inefficient themselves.
- Privatisation is an enormous task with little prospect over the short term if a long-term approach is not followed.
- Financial infrastructure to facilitate and assist in privatisation did not exist which compounds the problems experienced in privatisation.
- Privatisation enjoys a high profile and creates unrealistic expectations.
- A considerable amount of East European industries is worthless; however, parts of it show promise and potential and it is arguable that these potential parts were sold off at a big discount.

#### 2.2.2.2.2 Deregulation

Deregulation within a global perspective can be observed with the conclusion of the Uruguay Round in December 1993 and the establishment of the World Trade Organisation (WTO). On the

back of the conclusion of the Uruguay Round and the establishment of the WTO, deregulation, and a distinct phase of globalisation took effect. Tariffs were to be lowered by 40 per cent by 2000 with the US and the EU to lower tariffs on their products to one another by 50 per cent with immediate effect. GATT was restructured and the WTO emerged with increased powers.

The new dispensation included new measures to deal with the protection of intellectual property, prohibition of trade in counterfeit goods, reform of national agricultural subsidies and trade in services. The Uruguay settlement concerning intellectual property provides for the first time for the following (Bennett, 1991:14):

- Patent protection for 20 years
- Limitations on the use of compulsory licensing for patented products
- Copyright protection for at least 50 years from the creator's death
- All countries to introduce legislation to prevent the unauthorised disclosure of trade secrets
- Provision of equal treatment for domestic and foreign intellectual property holders

The inferences to intellectual property transactions within the MNE, is indicative of its importance. A chapter in the OECD Guidelines deals exclusively with transactions involving intangible property (OECD,1995:VI-1–VI-15). Therefore, with transfer pricing being the focus of the research and within the current text, the focus is on deregulation, (as a distinct part of the second phase of globalisation), and the Uruguay Round, where intangible property was first addressed.

The phasing in of the agreement was asymmetrical with developing countries having five years and least developed countries ten years respectively. The *World Investment Report* states that post the Uruguay Round the average tariff rate cut across all products is 4 per cent for industrial countries whilst for developing countries it is at 25 per cent (UNCTAD, 2003:31).

Tariffs and the reduction thereof provide further incentives for MNE's to transfer price. With an observed divergence amongst tariffs and corporate tax rate, the overall tax rate of an MNE can be artificially lowered. MNE's can by virtue of increasing the price of product bought from related parties, beyond the arm's length standard, end up *increasing customs exposure* but leverage the *customs exposure off against corporate tax*.

For example, a company imports a product with a tariff of 5 per cent. The imported product's price can easily be increased by 5 or even 10 per cent, effectively paying 5 per cent on the increased value instead of possibly 30 per cent corporate tax on the profit it would have made on the original (arm's length) price. The cost of the product is artificially increased with the retail price of the product being a constant; the resultant profit is lowered by at least the customs duty and the artificially increased portion of the price. By virtue of increasing the imported product's price, it is clear that profitability for the MNE and taxation can be lowered substantially in the specific country.

### ***2.2.2.3 Phase 3: International coordination, harmonisation and standardisation***

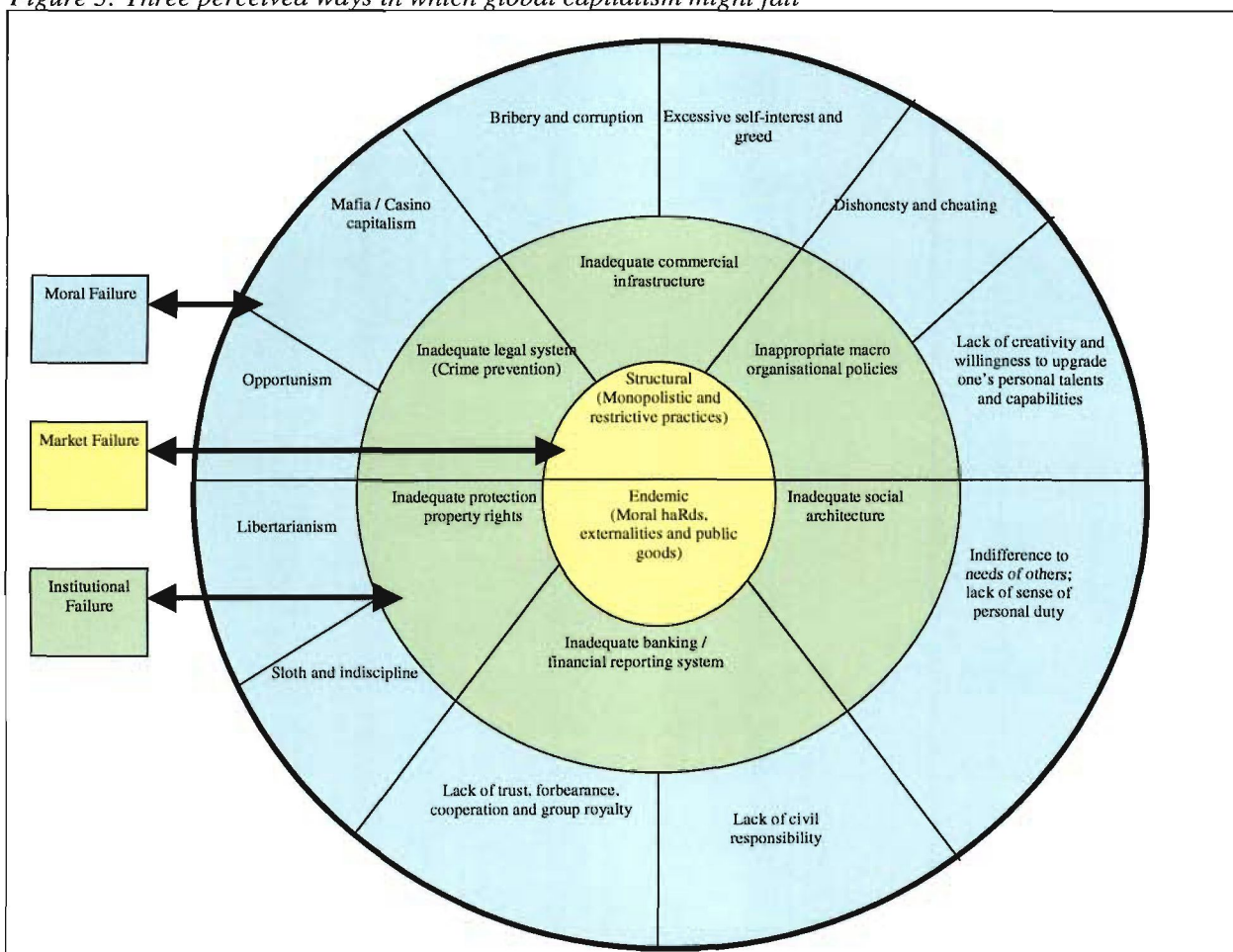
The removal, sometimes-asymmetrical removal of trade barriers between developed and least developed nations poses challenges of coordination and harmonisation. The removal of trade barriers, as envisaged by the Uruguay Round of the WTO and the consequent Doha Round, in the context of developed, developing and least developed nations, and the onset of privatisation and deregulation, some measure of global order organisation are needed to provide stability.

The desire of developed, developing and least developed nations exists to impose order (Deprez, 2003:372). This *desire to impose order* is a result of a general dissatisfaction with the market outcomes that are primarily a result of highly deregulated, privatised and an uncoordinated international market system. Dunning (2002:50) concurs with the views of Deprez (2003:372) and illustrated in Figure 3, the types of *inadequacies of the contemporary* markets and institutions inclusive of the *moral behaviour* underpinning these and should be addressed for globalisation to succeed in the future. *Market, institutional and moral failure* is counter-productive to global capitalism and globalisation.

Market failure is, according to Dunning (2002: 50), primarily driven by structural and endemic failures. According to the research undertaken by Dunning in seven countries, which is tabulated in Table 1, *moral failure* in five of the seven countries studied contributed to failures of global capitalism. *Structural failures*, discernable by *inappropriate macro economic policies, overvalued or tied (pegged) currency as well as the presence of a strong black market contributed to market failure of global capitalism.*

On the other hand, *institutional failure* is driven by various inadequacies. An *inadequate regulatory and supervisory system* was evident in all seven countries in which global capitalism failed. The *lack of transparency* and inadequate accounting standards (which is critical for transfer pricing transaction recognition) occurred in six of the seven countries whilst an inappropriate financial system led to the demise and failure of global capitalism in four of the seven countries.

Figure 3: Three perceived ways in which global capitalism might fail



(Source: Dunning 2002:50)

Moral failure, especially nepotism, or Dunning's reference of crony or Mafia capitalism as well as the prevalence of bribery and corruption in five of the seven countries led to global capitalism failure. Dunning (2002: 51) list in Table 1 the three failure modes, discussed in the previous section, which were highlighted by the Asian financial crises and is evidenced by research in seven countries.

**Market, institutional and moral failure** cannot be singled out as the factor contributed to the actual “failure” of global capitalism. Some factors, such as inadequate regulatory/supervisory system are ever-present whilst others cannot be disregarded. Dunning stipulates that there seems to be a multiplicity of interconnected deficiencies when combined, results in failure and should be addressed (Dunning, 2002:50).

*Table 1: Failures of global capitalism in seven countries*

	<i>Japan</i>	<i>Korea</i>	<i>Indonesia</i>	<i>Thailand</i>	<i>Hong Kong</i>	<i>Malaysia</i>	<i>Russia</i>
<b>Market Failure</b>							
Moral failure		X	X	X	X	X	
Inappropriate macro economic policies	X	X	X	X			X
Excessive speculation	X				X		
Overvalued currency / Tied exchange rates				X			
Bad timing of short-term debt		X		X			
Presence of strong black market			X				X
Contagion (contamination) effect					X	X	
<b>Institutional Failure</b>							
Inadequate regulatory/supervisory system	X	X	X	X	X	X	X
Inadequate banking system	X	X		X			X
Inadequate legal and other infrastructure			X			X	X
Inappropriate financial system	X	X	X	X			
Inadequate protection of property rights			X				
Lack of transparency / inadequate accounting standards	X	X	X	X		X	X
<b>Moral Failure</b>							
Crony/ Mafia capitalism	X		X		X	X	X
Bribery and corruption	X	X	X	X			X
Lack of trust / social responsibility			X			X	X
Excessive greed of investors / institutions		X			X	X	

*(Source: Dunning 2002:51)*

The general strive towards order is not only limited to the abovementioned examples of failures. Deprez (2003:372) also identifies issues such as global warming (Kyoto protocol aimed at emission control) to take care of global issues that cannot be addressed only by the private markets. MNE’s are not exporters of pollution due to their relocation activities of production to

areas with less stringent emission controls with some often set, rather than follow environmentally friendly operations.

These relocation activities of production to countries with less stringent emission controls occur within the MNE, hence transfer pricing would become increasingly important in securing the national tax base in all the jurisdictions affected by such relocation activities. Relocation activities do not necessarily have to be in physical closure of facilities, it occurs as functional relocation as illustrated by distribution (refer to Table 7) and manufacturing structures (refer to Table 8 and Table 11) MNE's employ globally.

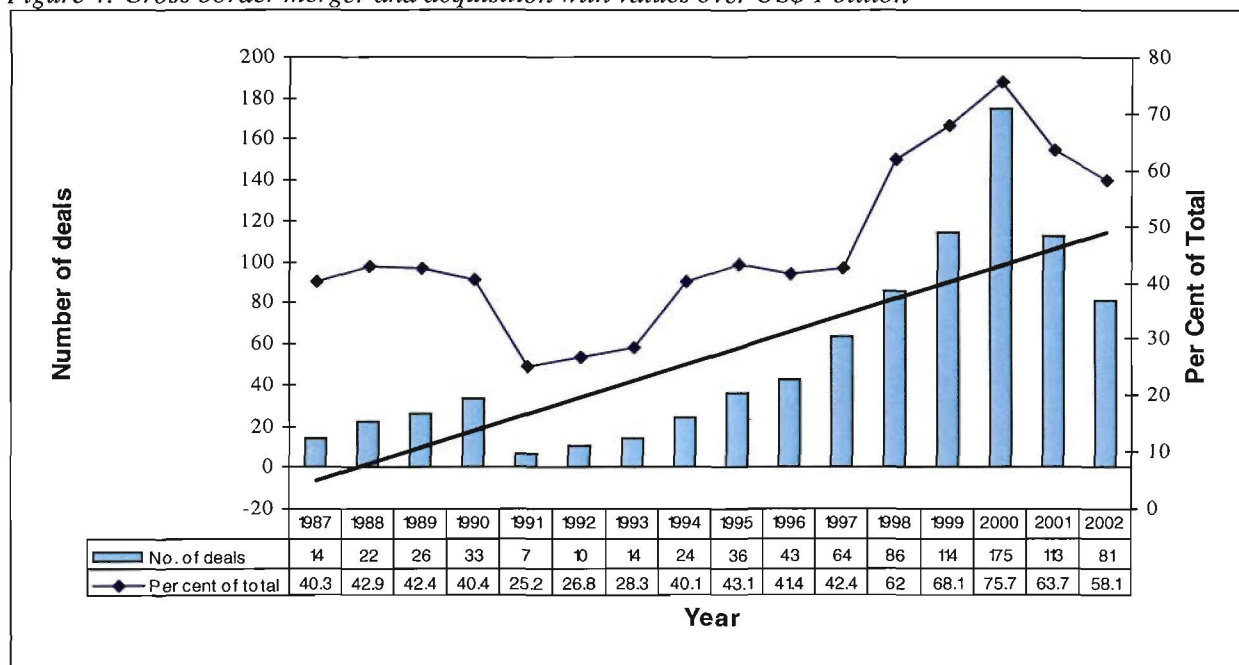
## **2.3 Multinational Enterprise**

In order to clarify the term MNE, a description was previously provided in section 1.6.23. However, in order to clarify the concept, for the purpose of this discussion, an MNE is an enterprise that controls and manages production located in at least two countries. The MNE is a key driver of globalisation and it provides the engine for FDI flows to and from developed and developing economies globally. The MNE's influence stretches beyond FDI flows; it is also a globalisation driver insofar as trade amongst members of MNE's.

### **2.3.1 Current environment**

Merger and acquisition represents one of the strategies an MNE might follow in the establishment, expansion or contraction of the MNE. By virtue of tracking the merger and acquisition activity over time, a general trend is expected to emerge, albeit that over the short term, volatility is expected due to economic up and downturns. Various factors, such as global economic growth, interest rates, and consumer demand etc. are expected to have an impact on the absolute level of the merger and acquisition activity. However, over time its illustrative trend is noteworthy, as depicted in Figure 4.

Figure 4: Cross border merger and acquisition with values over US\$ 1 billion



(Source: UNCTAD 2003:17)

In analysing and representing the data on a chart (Figure 4), it is obvious that merger and acquisition activity is on the increase, which is indicative of the prevalence of the MNE. The relative volatility observed in merger and acquisition activity as well as FDI flows, is expected in light of the up and downswings of the global economy. However, the *World Investment Report* cites volatility as being caused by the following microeconomic factors (UNCTAD, 2003:17-18):

- Decline in reinvested earnings because of the repayment of intra company loans
- Lower corporate profits combined with the MNE's ability or willingness to finance FDI through intra company loans in conjunction with a slowdown in corporate restructuring contributed to the downturn

Downward pressure on MNE's corporate profits increases the risk of transfer pricing. Transfer pricing risk in this instance refers to the risk of revenue authorities querying profitability followed by a transfer pricing investigation. Under conditions of declining profitability in conjunction with the use of intra company loans (from capital-endowed parts of the MNE to parts of the MNE that is a net capital consumer) the MNE internally receive interest payments in certain areas whereas other areas are paying interest.

MNE's manage their taxation expense as they would any other expense, hence it does not make commercial sense to pay tax in certain locations whilst in other locations the MNE is in a tax loss position. It would be more prudent to lower the taxes paid in profitable areas (through interest payments to other parts of the MNE) and receive payment in areas where the MNE has an assessed tax loss. The overall tax positions will reflect a significant lower taxation expense.

Volatility in merger and acquisition statistics can be seen from an investment perspective, a form of acquiring and merging of business enterprises into a bigger MNE or alternatively, a consolidation of businesses within the MNE or a move away from non-core operations. A decline in the merger and acquisition activities is indicative of disinvestment. Now, there is not any published information on divestment after merger by South African MNE's. The reality of disinvestment is tabled in Table 2, which illustrates the changes in the number of foreign affiliates and host countries of selected cases (UNCTAD, 2003:18).

*Table 2: Disinvestment after Merger*

<b>Merger Case (Partner names)</b>	<b>Merger Year</b>	<b>No. of foreign affiliates and host countries at the time of the merger</b>	<b>2002 (No. of foreign affiliates)</b>
Vivendi Universal (Vivendi-Seagram)	2000 52 host countries	904 foreign affiliates 50 host countries	704
BHP Billiton (BHP – Billiton)	2001 30 host countries	184 foreign affiliates 20 host countries	60
Unilever (Unilever – Bestfoods)	2000 50 host countries	275 foreign affiliates 44 host countries	242
Nestlè (Nestlè-Ralston Purina)	2001 63 host countries	428 foreign affiliates 86 host countries	398

*(Source: UNCTAD 2003: 17)*

Disinvestment, the inverse of investment is clear from the statistics as tabled in Table 2. A substantial number of subsidiaries of MNE's, spanning a wide number of countries were closed down, which is indicative of the observed volatility. Within merger and acquisition activity, there seems to be periods of investment (rise in merger and acquisition activity) that is followed by a period of consolidation (static and decrease in merger and acquisition activity). Merger and acquisition activity is at best an indication of the underlying trend of globalisation insofar as the MNE. Merger and acquisition activity is not explanatory of the MNE hence further analysis is required.

In an attempt to analyse the MNE, the analysis' point of departure are based on the basic fundamental issue of economics, as it would apply to any enterprise, i.e., scarcity (of production

factors such as capital, labour, raw material and entrepreneurship) within a national and global perspective. Scarcity in its simplest form is that the available resources and means are insufficient to fulfil all needs, i.e., unequal factor endowments.

### **2.3.2 Unequal Country Endowments**

This imbalance or disequilibrium amongst resources and needs is due to the unlimited nature of needs, which continues to expand in contrast to natural resources, which are finite and scarce. The economic reality and challenge is to satisfy unlimited demands (needs) with limited, scarce resources. Demand as well as scarce resources is not restricted to specific countries or regions, it is globally spread because of the unequal endowment between countries. Limited resources are available and utilised in the provision of goods and services, on a national or global basis which as discernable as the following production factors (Smit, *et al.*: 2002:6).

- Natural resources such as minerals
- Labour which includes physical and mental effort for reward
- Capital inclusive of assets used for the production of goods and services
- Entrepreneurs who recognises opportunities and economic demand (needs) and combines the production factors in order to fulfil the demand (needs)

An adjunct to the abovementioned resources, Dunning draws reference to competitive strategies MNE's follow to obtain a competitive advantage (Dunning, 2002:235). Competitive advantage is achieved through natural resource seeking, market seeking, efficiency seeking and strategic asset seeking (refer to Table 4 for more details) activities that results in value creation in access of the cost involved in securing it (Porter, 2004:4).

In order to achieve the objective of meeting demand, the allocation, production and distribution process requires consideration. In essence, scarcity involves the allocation of scarce resources, the production process utilising these resources and the distribution of these goods and services. Expanding on this approach, the MNE is the enabler through which scarce resources are allocated, utilised in production and distributed to fulfil demand on a multinational scale, globally. Dunning (2002:341) confers the abovementioned view and draws the attention to two commonly held albeit it divergent views of MNE's:

- Firstly, by virtue of their advantageous access to human and financial resources combined with the ability to limit geographic constraints by moving these resources across national boundaries and industries, which contributes to structural modernisation and transformation of the economies they came into contact with.
- Secondly, MNE's' resource allocation decisions, based on a global perspective might be counter productive and even detrimental to the long term health of the economies in which they operate.

AN MNE does secure access to resources through FDI. The FDI of the MNE have two distinct strategic dimensions (Dunning, 2002:222). Initially the FDI is geared towards obtaining access to natural resources and markets. Subsequent to obtaining access to natural resources and markets FDI changes focus aimed at achieving efficiencies and securing strategic assets. FDI of MNE's is not a once-off occurrence, it has an initial and sequential component that can be best illustrated as tabled in Table 3.

*Table 3: Four main types of FDI*

<b>Initial FDI</b>	<b>Sequential FDI</b>
1. Resource seeking (Natural) (a). Physical resources (b). Human resources	3. Efficiency seeking (Rationalisation of production to exploit economies of scope and specialisation) (a). Across value chains (product specialisation) (b). Along value chains (process specialisation)
2. Market seeking (a). Domestic markets (b). Adjacent market (regional)	4. Strategic- (created-) asset-seeking (To advance regional or global strategy) (a). Technology (b). Organisational capabilities (c). Markets

*(Source: Dunning 2002:233 and own compilation)*

The initial FDI as well as the sequential FDI poses challenges for transfer pricing. The challenges can be summarized as follows:

- **Resource seeking** FDI focus is on *access and allocation* of the scarce natural resources spanning geographical boundaries. Transfer pricing is concerned with the *supply agreements* between natural resource MNE's.
- **Market seeking** FDI, on the other hand is primarily involved in *establishing and securing demand* within the domestic and adjacent market in order to fulfil demand (need) for goods and services. Resource and market seeking FDI of MNE's converge through establishment

of specialised global marketing organisations. These global marketing organisations poses substantial transfer pricing challenges with their purchases of natural resources from affiliates globally, servicing their global customers from a single location. MNE's with substantial interest in the natural resource market such as Rio Tinto, Billiton, Total, and SASOL etc. are some examples.

- **Efficiency seeking** FDI is part of the broader sequential classification, which aims to achieve increasing efficiency of regional and global activities by MNE's through *integration of assets, production, and markets*. Often, sequential and first time investment are in form and substance strategic asset seeking investment with the main *purpose to acquire resources and capabilities to augment competitiveness and core competencies* on a regional and global scale (Dunning, 2002:233).
  - Efficiency seeking FDI poses significant transfer pricing, and in particular comparability challenges. Efficiency gains from economies of scale and integration (benefits from being part of a bigger group) are recognised by the OECD Guidelines (OECD, 1995:I-4,III-3 and VII-5).
  - Comparability and in particular the determination of the arm's length consideration could theoretically be *influenced by efficiency gains the MNE obtains*. The OECD Guidelines as well as PN 7 recognises that benefits a member of an MNE obtains through being part of an integrated group does not necessarily feature in independent dealings (OECD, 1995:VIII-4 and South Africa, 1999:21–22).
- **Strategic asset seeking** FDI aims to advance the regional and global strategy of the MNE through *leverage from technology, organisational and market positioning*. This strategic asset seeking FDI results in new finance capital and the creation of complimentary assets in the regions or countries the MNE operates.

The contribution of the natural resource seeking, market seeking, efficiency seeking and strategic asset seeking behaviour of MNE's and the competitive advantage opportunities is highlighted in Table 4. Obtaining access to natural resources and markets as well as reaping the benefits from efficiency gains and ownership or control of strategic assets is an objective of the MNE to secure a competitive advantage.

*Table 4: MNE's competitive advantage opportunities*

<b>Natural resource seeking</b>	<p>Provides for complimentary assets (Management, technology and organisational competence)</p> <p>Provides access to foreign markets</p> <p>Raises standard of product quality</p> <p>Could foster clusters of resource based related activities</p>
<b>Market seeking</b>	<p>Provides for complimentary assets</p> <p>Foster backward supply linkages and clusters of specialised labour markets</p> <p>Raises standard of product quality as well as consumers' expectations of domestic competitors</p> <p>Stimulates local entrepreneurship and domestic competition</p>
<b>Efficiency seeking</b>	<p>Improves international division of labour and cross border networking</p> <p>Provides access to foreign markets and sources of supply</p> <p>Foster backward supply linkages and clusters of specialised labour markets</p> <p>Raises standard of product quality</p> <p>Stimulates local entrepreneurship and domestic competition</p> <p>Assists in structural adjustment</p>
<b>Strategic asset seeking</b>	<p>Provides new finance capital and complimentary assets</p> <p>Provides access to foreign markets</p> <p>Stimulates local entrepreneurship and domestic competition</p> <p>Improves international division of labour and cross border networking</p>

*(Source: Dunning 2002:235)*

The diversification benefit is not illustrated but it is noteworthy that the benefit for MNE's in having natural resources and markets in different geographic markets spread globally provides opportunities to limit the potential detrimental effect economic up and downswings in one country compared to that of another. The upswing in one country can effectively offset the downswing observed in another which limits the overall impact on the MNE.

### **2.3.3 International production**

During the 1970s and 1980s, the world was exposed to new, emerging industrialising countries (predominantly from the East), a series of technological breakthroughs in the information technology and communications industries. The emergence of industrialised economies combined with technological advancement in information technology and communication had and continues to have a profound impact on economic activity and resources allocation, amongst and within countries.

Global economic growth declined during the 1970s and 1980s and a swing towards neo-liberal policies of governments has had a different impact on countries. The impact depended primarily on the level of development and economic structure of the countries and their government's ability to adjust (Dunning, 2002:340).

Tolentino (2000: ix) and Cantwell (2000: 11) reports four frameworks which provides insight to the major theories of international production which are:

- A **Microeconomic** approach that examines the *international growth of individual enterprises* or MNE's
- A **Mesoeconomic** approach that considers the interaction amongst enterprises at an industry level
- A **Macroeconomic** approach, which studies broad national and international trends
- An **Eclectic paradigm**, which is not an alternative analytical framework but rather as *an incorporation of various elements of all the other approaches*

A common issue identified by the various economic schools of thought is that attention should be given to the dynamic aspects of international production. Theoretical divergence is expected within the ambit of international production, however, the *eclectic paradigm* is not merely a paradigm contributable to a diversity of ideological standpoints but is has a *wider implication* due to the following (Cantwell, 2000: 11):

- **International production** could be *resource based, import substituting, export driven* or it could be a *drive towards global integration* with each of the abovementioned raising specific considerations, which have a different affect on home and host countries.
- Related to international production, the theories address issues and raises questions with respect to the theories of international capital movements, international trade, location, industrial organisation, innovation as well as the enterprise at large. *Theories of the enterprise will concern itself with the MNE*, whilst the theory of international financial flows would be primarily concerned in FDI.
- An analyses of international production can be undertaken at three levels,

- The first being the **macroeconomic level** where the analysis are based on *broad national and international trends*. The theories relied on theories of trade, location insofar as FDI is concerned, balance of payments and exchange rates.
- Secondly, the **mesoeconomic level** which considers the *interaction amongst enterprises at an industry level*. These theories are inclined towards industrial economics, game theory and the theory of innovation and comparative corporate trajectories or strategies.
- Thirdly, the **microeconomic level**, which is concerned with the *international growth of individual enterprises and the theory of the individual enterprise*.

The emphasis of this theoretical review cannot be all inclusive, special emphasis is on the theories of international production which best explains the MNE in its drive to provide goods and services from limited resources to fulfil unlimited demands. The inference of the interaction within the MNE to fulfil the economic objective in relation to scarcity is of critical importance in terms of transfer pricing.

Transfer pricing imposes a hypothetical market in the determination of the arm's length consideration, hence reference to the market approach to international production is followed. Alternative approaches to study the MNE are possible. Transaction internalisation with reliance on the transactional cost approach to economic organisation is such an alternative. Dunning (2002:377) reiterates this approach by highlighting the role of transaction cost in determining the organisation, the MNE, in terms of economic activity. Cantwell (2000:11) views the MNE in relation to markets, which are applied to international production, effectively emphasising transactional efficiency.

Each one of the approaches has value in analysing the MNE as a key driver of globalisation and transfer pricing as the pricing mechanism. However, transfer pricing is based on the hypothetical market being imposed on transactions amongst connected parties. The market is the environment in which transactions are concluded. In order to achieve the research's objective insofar as transfer pricing, the market approach is the focus of analysing the MNE.

### 2.3.3.1 Market power approach

Cantwell (2000:12) and Dunning (2002:404) elucidates the theory of international production separate from the theory of international trade and capital movements. The orthodox theory of international trade and capital movement does not explain the foreign operations of MNE's, especially the *two-way flows of FDI* nor the *flows amongst countries with similar factor endowments* (Cantwell, 2000:12)

The market failure paradigm was internationalised (refer to Figure 3 and Table 1 for more detail). Economically advanced and *developed countries* with capital abundance and labour scarcity have *low profit or interest rates but high wage rates prior to international transactions*. Exports to less developed, labour abundant countries comprise of products dependent on capital-intensive production methods. Capital are also exported in the form of direct FDI to developing countries, capital flows from low return to high returns based on scarcity (Cantwell, 2000:13).

Traditional classical approaches came to the same conclusion that due to under-consumption of capital in the countries with low interest, the *capital* can produce higher rates of return in developing countries with different resource endowments to provide a higher return (interest rate). In the home country, the return (interest rate) is under downward pressure due to competition, as envisaged by Adam Smith, with developing countries absorbing the surplus capital at a higher return (interest rate).

Marxist proponents attributes this downwards pressure on returns to either a rise in the capital output ratio (organic composition of capital) or a fall in the share of profits in income (the rate of exploitation) (Cantwell, 2000:14). The *conclusion* is that there will be investment opportunities in developing and least developed countries (LDC) with a low capital output ratio or countries, which allow exploitation of a disorganised labour force.

#### 2.3.3.1.1 Central themes of the market power approach

Cantwell (2000:14) elucidates that the conventional explanation of international production focus on the macroeconomic level failing to explain cross-investment amongst developed countries without any reference to cross-investment amongst industries of any substance. Cantwell (2000:15) responds to the conventional explanation of international production with the theory of

the enterprise within its industry in an attempt to establish the determinants of internalisation. The main ideas surrounding the determination of internalisation of the MNE are as follows:

- In the early stages of growth, MNE's increase their share of the domestic markets through *merger and acquisition and capital extension* with an increase in profits due to increased industrial concentration and market power.
- *Market expansion within the domestic market is finite*; hence, profits from the domestic market under a high degree of monopolistic behaviour are invested in foreign markets in foreign enterprises. This will be leading to a similar process of assimilation and increased industrial concentration in the foreign market.
- Adam Smith's notion that enterprises (similarly MNE's) would *seek collusive agreements in order to sustain profits* is *not in line* with the market power approach. Adam Smith sees competition amongst MNE's as a spur to increased levels in investment and technological change whereas under the market power approach investment is not seen as so much an independent response to competition but rather as a means of extending and expanding collusive networks.
- Common belief is that MNE's *invest in foreign operations to reduce competition and increase barriers of entry in their respective industries*. Increasing their monopolistic power might be counterproductive since efficiency in foreign operations could decrease over the long term.
- The market power approach is at odds with the alternative theory, which postulates that the centrifugal objective of the MNE is to increase its international effectiveness by virtue of enhanced profits.

At best, it is ambiguous to contemplate that an MNE by virtue of increasing productivity in foreign operations and enhanced efficiency through the coordination of different types of plant and technology in the foreign operations would equate to increased profitability in international industries. Increased efficiency within the MNE's might increase competition amongst them, complicating the perception and measurement of profitability, which could be a setoff against efficiency, gains, which is difficult to quantify in transfer pricing.

The **market power approach** can be associated with industrial organisation insofar as the argument that a more concentrated market structure points towards a greater degree of collusion amongst connected parties (*the area Transfer Pricing is concerned with*) and a higher rate of profit. The market power approach contemplates the conduct of MNE's to market structure rather than vice versa. MNE's are seen as establishing a position of power in their domestic economy and in their respective international industries. Internationalisation is also triggered by a decline or stagnation in the domestic market.

Arguments can be raised that the *market power approach is irrelevant* due to increased globalisation. The MNE has a diversity of potential global sources of supply. These sources of supply erode the traditional position of market dominance in the domestic economy. In effect, the argument is based on the premise that *profits derived from market power approach will over the long term diminish* with sustainability dependent on the MNE's ability to create an international network of innovation situated in locational dispersed centres of differentiated new technology.

The counter argument can be based on the fact that currently globalisation is associated with the increasing influence of finance capital, which is reminiscent of the categorisation of imperialist capitalism (Cantwell, 2000:17). Deregulation of financial markets and the increasing economic weight of leading financial institutions brought about renewed pressure for profits from market power through perpetual re-contracting and redistribution of income. The critical issue is if these *pressures could result in sustainable profit over a long period of time* in the current paradigm where it is becoming increasingly difficult to establish and hold market power (Cantwell, 2000:17).

The difficulty in establishing and holding of market power is not removed from having access to the resources, assets in particular that give rise to the market power. MNE's retain control over the network of assets due to the "internationalisation advantages" of doing so Cantwell (2000:20).

### ***2.3.3.2 Complimentary Assets***

Internationalisation advantages arose from the increased ease with which an MNE is able to realise return on its assets, albeit distinctive in the narrow definition and classification of assets, such as technology (Cantwell, 2000:20). This realisation is not limited to technology-based assets, it is

also applicable to the return realised directly attributable to the coordination of complimentary assets, naturally subject to the costs of managing these complex asset network.

Cantwell (2000:20) alludes to the advantage derived by virtue of employing a common governance of a network of complimentary assets located in different countries. This encapsulates internalisation through the coordination and use of complimentary assets, similar to the transactional benefits Dunning refers to (Dunning, 2000:125).

#### **2.3.4 Transfer pricing implication of the market power approach**

An advantage obtained from coordination within the MNE and not necessarily through market coordination, is indicative of the so-called transactional market failure (Cantwell 2000:20). Cantwell (2000:20) cite the following three reasons, which have particular significance to transfer pricing, that transactional market failure are can be attributable to:

- In the event of the presence of externalities (such as counter trade agreements), benefits external to the transactions concerned could possibly not being recognised by the relevant parties dealing at arm's length.
- This role of externalities is of particular importance within the context of transfer pricing. Connected parties' dealings, which for transfer pricing purposes implicitly implies amongst connected parties, would fail to recognise these external benefits in determining the arm's length standard. This is due to the preposition that the arm's length consideration is based on the dealings comparable to that of unconnected parties. Hence, failure to recognise the benefit derived from coordination of complimentary assets within the MNE cannot be established if the comparative benchmark is based on independent enterprise dealings.
- *Risk and uncertainty* plays a significant role in cross border transactions. Entry into new markets and access to resources from previously external sources (from the perspective of the MNE) give rise to uncertainty and consequent risk.
  - Comparability used to determine the arm's length consideration in transfer pricing is based on functions performed, assets used and risk assumed.
  - Risk assumed in this context is not necessarily all encompassing of cross border transactions; comparability is primarily based on functionality.

- Cross border transaction; prevalence is not easily established and is not a prerequisite in the determination of the arm's length consideration.
- In order to recognise the differences in risk, in the South African market, a risk premium is considered appropriate. The risk premium is based on the differences between the comparable government bond yields. In section 5.4.5.2 the use of the bond yield as risk premium is discussed in detail.

### **2.3.5 The Transfer pricing challenge to classic theory**

The previous sections created awareness that globalisation by nature, and in practice are responsible for significant expansion in the exchange of goods, services and capital flow across national boundaries. The theory of international trade as promulgated by David Ricardo's comparative advantage (Lindert, 1991: 24) fails to explain the dynamics of transfer pricing as a form of international trade. The normative conclusion that gains of trade is comparative insofar being relative and not absolute does not explain the advantages obtained from intra-firm trade and in essence the proceeds from such trade.

The MNE trade within itself, within national and international boundaries and in so doing create "markets". These markets, does not exist in the broader sense, i.e., willing buyer and seller with both parties striving to optimise their benefits from the trade. In MNE's, the objective could be to achieve the greatest level of benefit from the total value chain, often spanning multinational boundaries, not necessarily from each transfer amongst member organisations.

In some instances, especially the transfer of intermediate or semi-finished goods amongst connected parties, no comparative market exists (South Africa, 1999:17-18). Transfers only take place within the group and as such, international trade according to the classical theories fails to explain the MNE where the one party of the MNE has a comparative advantage or even an absolute advantage over the other, hence the prevalence of international trade.

Objectives for intra-firm (market) and inter-firm (MNE) are different where inter-firm's objectives are to realise profit where the transaction occurs. Inter-firm profit realisation is closer linked to maximisation of the benefit over the complete value chain. Within the ambit of the MNE, taxation insofar as profit recognition, taxable loss set-offs amongst loss making and profitable enterprises to affect a neutral position, and debt structures with interest payments can be some of the

considerations international tax planning, of which transfer pricing is one aspect. A specific transfer pricing inference is when arbitrary allocation of cost occurs in a high tax jurisdiction rather than where the expenses have been incurred.

Transfer pricing is the focus of the research. However, transfer pricing is also one aspect of international tax, hence a contextual analysis of the pertinent international tax issues provides greater insight to transfer pricing.

## **2.4 International taxation**

Moving beyond the substantial issues of progress, economic growth and the role globalisation and the role the MNE plays in the world economy, taxation and its implications seems to be a matter of accounting and financial consolidation. Such apathy is misplaced and the importance of the taxation of corporate profits within the jurisdiction in which the MNE realises such income, demands attention to detail for managers of MNE's and tax authorities alike.

In this section, the normative effect of corporate taxes on MNE's are considered. The welfare of the host country (country receiving FDI, or from which the particular member of the MNE operates) is incorporated within the context of international tax.

### **2.4.1 The Global context**

All countries levy taxes on the net income of enterprises (includes MNE's, branches, close corporations etc.) at marginal rates. Traditionally tax is seen as a levy on pure economic rent or surplus that has no or very little impact on savings or output decisions (Caves, 1999:189).

Caves (1999:189) alludes to the practical aspect of taxation, it is seen as the "sum of the opportunity cost of equity capital plus any rents or windfalls accruing to suppliers of capital." Following this approach, taxation cause a divergence from the net return received by investors and the before tax earnings of the investment invested by the MNE. The tax impact on investors and conversely the consumers of goods or services depends on elasticity (refer to 1.6.11). In the event that the supply of capital was perfectly elastic (invest in non-tax forms or increase consumption when tax reduces the net return to equity capital), the tax burden would entirely fall on the consumers of the MNE's goods and services (Caves, 1999:189).

This research refers to FDI flows within the MNE. Examples are used to illustrate the various concepts involved in international tax and transfer pricing. In order to explain the various concepts reference to the country of origin will be referred to as “Home” and the recipient country as “Foreign”.

Moving from the premise of foreign investment, “Home” investors have a choice, either to invest domestically or abroad with “Foreign” users of capital acquiring capital from domestic or sources from abroad. Concepts of tax-neutrality emerges which serves the purpose of identifying the effect of taxes on capital location.

Capital-export neutrality refers to the choice that “Home’s” MNE make amongst investment in domestic activities and investing abroad. All-inclusive relevant taxes taken into consideration are considered neutral if domestic and international investments earn the same pre-tax rates of return, which also yield the MNE the same returns after tax.

Capital-import neutrality addresses the competition amongst “Foreign’s” domestic investors and the MNE to supply capital that produces goods in “Foreign”. The tax system is neutral if equal before tax returns are realised by the MNE and competing suppliers of capital, which translates into equal after tax returns. Neutral tax systems ensures and promotes efficient use of resources and might be considered just (Caves, 1999: 190). Import neutrality places competing domestic MNE’s and foreign subsidiaries on an equal footing to the extent that “Foreign’s” buying decision is based on the most competitive source not being distorted by taxes.

#### ***2.4.1.1 Multiple tax authorities***

Neutrality is primarily based on who is paying what tax, not where such tax is being paid. The dynamics of tax neutrality and transfer pricing is best understood by making use of “Foreign” and “Home”, terms used for illustration purposes.

In the event that “Home” does not impose corporate tax whilst “Foreign” imposes 40 per cent tax on resident capital, domestic or foreign. Capital-import neutrality exists in “Foreign” but capital-export neutrality does not exist in “Home” as the MNE would divert their funds towards untaxed domestic investment projects rather than pay the 40 per cent corporate tax in “Foreign”.

An alternative scenario can also prevail: In the event that “Foreign’s” tax authority does not levy a tax but “Home” levies a tax of 50 per cent on all profits earned by “Home’s” residents irrespective

if their capital is placed abroad or domestic. Capital-export neutrality prevails but certainly not capital-import neutrality. From the example it is clear that taxes are to be paid, the dilemma is which tax jurisdiction get which taxing right to the profits in question and what allowance the other jurisdiction makes for the taxes being paid in the other jurisdiction. In the example, “Home” is having the opportunity (right) to tax and can possibly decide on the following policies (Caves, 1999:91):

- *Exemption.* “Home” can exempt further taxation of income of the MNE, which has been taxed abroad, often referred to preventing double taxation of the same economic profit in multiple jurisdictions. In the example, the tax rates amongst the two jurisdictions differ; capital-import neutrality prevails although capital-export neutrality does not exist under the circumstances.
- *Tax credit.* “Home” taxes the MNE’s foreign profits at the same rate as domestic enterprises but provide a tax credit for taxes paid in the other jurisdiction.
- *Tax deduction.* “Home” can allow the taxes being paid by the MNE to Foreign as a deduction from income taxable by Home, in effect the MNE’s capital placed abroad are being subjected to double taxation. The overall tax rate on the MNE’s capital is  $t = t_H(1 - t_F) + t_F$ . Where  $t_F$  and  $t_H$  are respectively the “Foreign” and “Home” tax rates. If “Foreign’s” tax rate is 40 per cent and “Home’s” tax rate is 50 per cent, the overall tax rate of the MNE’s capital  $t$  is equal to 70 per cent ( $t = t_H(1 - t_F) + t_F, t = 0.5(1 - 0.4) + 0.4$ ). In such a situation, neither import nor export neutrality is served.

Countries such as Germany, France, the Netherlands and Canada employs the exemption procedure whilst others such as the United States, United Kingdom and Japan the partial credit system. Caves (1999:191) express the view that in the case when capital-import neutrality and capital-export neutrality prevails, that *tax does not distort the foreign investment decision*. Empirical research undertaken by Sedmiharadsky and KLaR in 2001 in South Eastern Europe confirms the view of Caves that tax does not distort the foreign investment decision. Sedmiharadsky and KLaR (2001:187) found the following have a bearing on the foreign investment decision and not the general belief that tax rates per say are a major determinant:

- Generally it is found that host country tax rate usually plays no role in initial decision of the MNE to *invest abroad* although it might be of importance insofar as location decisions.
- There is increased sensitivity of real manufacturing capital to host country taxation over time being consistent with international mobility of manufacturing capital, which in turn suggests increasing potential of tax incentives, which influences FDI.
- They caution in their report in the application of the estimates used because true elasticity depends on a range of factors, which are difficult to control in empirical work.

#### ***2.4.1.2 Deferral and transfer pricing regulations***

The effective rates of taxation's influence on MNE's depends on various factors such as the definition of taxable income which varies amongst countries, rules governing depreciation and even in the example used the rules of "Home" to include the MNE's' tax position in various foreign jurisdictions.

Deferral could have a bearing on effective tax rates of MNE's (Caves, 1999:192). For instance, when countries adopt a tax credit scheme to tax MNE's' profits from activities abroad once the profits are repatriated, the following can easily occur. If the tax rate in "Home" is bigger than in "Foreign" ( $t_H > t_F$ ) the foreign subsidiary of a "Home" MNE can pay tax levied at "Foreign's" tax rate ( $t_F$ ) on its current profits, reinvest the balance for an unlimited period and pay the additional ( $t_H - t_F$ ) only when the profits are repatriated.

In this situation when the tax rate in "Home" is bigger than in "Foreign" ( $t_H > t_F$ ) the deferral lowers the effective tax rate paid in the capital invested abroad. In this example, the level of investment from abroad change as the subsidiary becomes self-sufficient and utilise reinvested earnings for expansion in the "Foreign" market.

In a South African context, the Secondary Taxation of Companies (STC) imposes a 12.5 per cent tax on the distribution or deemed distribution of dividends. The distribution of the proceeds, if South Africa is the "Foreign" country, STC would result in 12.5 per cent tax on the distribution (dividend or deemed dividend). In this scenario, it will not be conducive to repatriate the profits as dividends. STC, a specific tax levied on distributions makes dividend distributions not an attractive alternative. It might be more prudent for the "Home" MNE, to forward a loan to "Foreign" (South African) subsidiary, charge interest and pay tax on it in "Home". In order to find

the best alternative, a critical analysis of thin capitalisation requirements, effective tax rates for “Home” and “Foreign” where dividends are taxed at 12.5 per cent on after tax returns whilst the difference in tax rates between “Home” and “Foreign” might make funding through loans more efficient.

In following the approach of the transaction cost model where transaction cost are used in determining the organisation of economic activity it is clear that the transactions of MNE’s often lacks comparable transactions in arm’s length markets or conditions (Dunning, 2002:377). This reality confronts tax authorities and management of MNE’s to devise a standard that could be used for the pricing of the transactions under consideration.

Effective tax rates can possibly be manipulated by the MNE through opportunities presented by transfer pricing and thereby limiting the tax authority’s ability to counteract its strategic behaviour. The empirical part of this research investigated the prevalence of transfer pricing in a specific MNE and the results are reported in Chapter 5.

Basically, the MNE has the ability through virtue of non-neutral taxes the incentive to recognise its profits in the low-tax jurisdiction. Making use of the previous example, it is prudent from the MNE’s perspective when the tax rate in “Home” is bigger than in “Foreign” ( $t_H < t_F$ ) to use the subsidiary in “Foreign” to overstate its purchases from the parent in “Home” (what transpired in the empirical case in this research), or alternatively understate the cost of goods and services supplied to the parent until nominal profits earned in “Foreign” equalise at zero. This will occur when the MNE induce to lower or raise the price on any intra company trade until all the profits has been shifted to the low tax jurisdiction.

Enforcement by tax jurisdiction of their transfer pricing regulations insofar as their ability to determine the arm’s length consideration and the taxation of profits based on it further reduces the MNE’s’ arbitrary transfer of profits or recognition of expenses in the higher tax jurisdiction. Introduction of *ad valorem* tariffs on the declared value of goods imported could potentially limit extreme transfer pricing practices.

Financial flows amongst members of MNE’s are designed and designated as debt or equity and is often arbitrary with hybrid instruments being included in the balance sheet to maximise the benefit from deductibility of interest payments without corresponding equity contribution to the affiliate.

In the empirical part of the research, a similar structure was identified and the treatment from a transfer pricing perspective is discussed.

## 2.4.2 Tax competition

Global expansion unlocks opportunities insofar as providing tax benefits to enterprises they were not previously accustomed to. In the previous example, tax differentials did not exist, however, in practice it does and its impact can be substantial.

Tax differentials exist amongst national jurisdictions, it provides arbitrage opportunities, which are not further explored in the research, and it is becoming increasingly important in business decisions Deprez (2003:373). It is not surprisingly that national regimes and MNE's were seeking for an instrument or organ that could address these inequalities that could severely impact business and tax administration alike, hence the establishment of the Organisation for Economic Co-operation and Development (OECD).

The OECD, since its inception in 1961 aims to coordinate economic policies and its focus on what it terms "harmful tax competition" and expands its work to limit the occurrence of international juridical double taxation, a phenomena which is brought about by globalisation (Bennett, 1999:286 and OECD, 1995:P-1). The OECD Model (OECD, 2000:7) states *"It has long been recognized among the Member countries of the OECD that it is desirable to clarify, standardize, and confirm the fiscal situation of taxpayers who are engaged in commercial, industrial, financial, or any other activities in other countries through the application by all countries of common solutions to identical cases of double taxation."*

The role of the OECD is certainly not limited to the governance of transfer pricing practices and model conventions with respect of juridical double taxation. The scope included MNE's and their role in globalisation, which lead to the publication of the OECD Guidelines for MNE's as far back as 1976. At the time, the late seventies, growing concern of the activity of MNE's and their impact on domestic economies and societies was centre to substantial debate (Arghyrios, 1999:2). Although the primary focus was on the MNE, concerns dealing with the apprehensions over security of foreign direct investment (FDI) and "proper" limits of host country regulation of FDI and MNE's came under the scrutiny.

### 2.4.3 International tax competition

International tax competition in its simplest form merely signifies the use of tax instruments by tax authorities to attract business. Deprez (2003:373) regards “*international tax competition to occur when one country provides tax inducement to attract capital from another country.*”

Hammer and Owens (2001:1) claims that the work over the last thirty years of the OECD succeeded in developing globally accepted standards and its efforts to reduce conflict amongst tax administrations contributed to a fiscal climate conducive to cross border trade and fair sharing of the tax base amongst countries. Hammer and Owens (2001:1) encourage fair tax competition within the paradigm of globalisation and acknowledge the concerns of governments relating to potential distortion of economic behaviour, which widens the opportunities of tax non-compliance.

This view of fair tax competition is echoed in the OECD’s (2001:4) project on harmful tax practices “... can work together to eliminate harmful tax practices, the OECD seek to promote tax competition that will achieve ... economic growth and development world-wide.” The importance of attaining convergence amongst the business community and the OECD through the elimination of harmful tax practices is primarily driven by the OECD’s project on harmful tax practices and aims to (Hammer and Owens, 2001:2):

- Provide a level playing field in the tax area for cross border activities
- Facilitate competition that is fair and transparent
- Intend to ensure that all taxpayers meet tax obligations, a goal of mutual importance for business and tax administrations

Various instruments are available to countries and can include differential tax rates, tax exemptions, deductions and rules that are currently part of the domestic tax legislative framework. A variety of incentives were found (based on a survey of 80 projects in least developed countries with 22 of the projects being initiated due to requests from the host countries) to be offered by countries and they are as follows (Caves, 1999:219):

- Tariff protection with 34 of 76 cases evaluated. The mean tariff rate was 68 per cent
- Import-quota protection, 34 of 77 cases
- Tariff reduction on imported equipment, 43 of 78 cases

- Tariff reduction on imported components, 29 of 75 cases
- Tariff reduction on imported raw materials, 26 of 76 cases
- Tax holiday, 37 of 80 cases with the mean of the tax holidays being five years
- Accelerated depreciation for tax purposes, 20 of 71 cases
- Public provision of infrastructure investments, 18 of 70 cases

Caves (1999:219) states that government assistance for instance in the export-orientated investments receive tax holiday and infrastructure investments. On the other hand, projects aimed at the domestic market receiving protection against competing imports. Competition and tax competition will not dissipate, with a potential market of 65 000 MNE's controlling 850 000 foreign affiliates (UNCTAD, 2002: xv).

#### **2.4.4 Harmful tax competition**

The OECD's project on harmful tax practices (Hammer and Owens, 2001:3 and OECD, 2001:4,7) regards tax havens as a form of harmful tax competition. Tax havens, seen as a form of harmful tax competition are small countries such as the Bahamas, Cayman Islands and Guernsey, to name a few, which provide a "tax haven" to foreign enterprises which only needs to establish nominal residence, can receive money from abroad without having to disclose it, they are legally entitled to conduct their business in secret.

This research does not concern itself with the merits to the existence or commerciality of tax havens, it merely reports on the existence thereof and incorporate a general view on it for completeness. In the case of tax havens, Bennett (1999:286) highlights that the benefit tax havens obtain is the increased domestic expenditure and the stimulation the domestic banking and financial infrastructure receive from the increased activity. The contemporary view and arguments against the use of a tax haven according to Bennett (1999:287) are:

- The administrative and other cost of shifting funds and maintaining secrecy may outweigh the benefits derived from it, in this particular case, tax savings.
- Interest on money held in a tax haven might be lower than in the domestic market or elsewhere.

- A growing number of countries refuse to recognise the existence of tax havens from a fiscal point of view. Treatment of transactions can be as severe as assuming that the funds in a tax haven are part of the MNE's assets in its home country and tax it as such.
- Transfers to and from tax havens is more likely to attract the attention of the MNE's domestic authority with subsequent investigations into the fiscal affairs of the enterprise.
- Tax havens are not part of bilateral tax treaties or agreements and are excluded from any of the benefits arising from these agreements and treaties.

Although in certain circles, tax havens are seen to be the scourge in international tax administration whilst others regard it as part of the operating global environment. Whatever the opinion, it exists and provides MNE's with alternatives in structuring their global business.

The impact of harmful tax competition or tax havens are not investigated, however, international business structures involving these tax havens are common, all cite business reasons for the establishment and continuous business dealings through it. It could be of value if an empirical investigation could identify the commercial benefits it provides to MNE's in the advent of greater tax harmonisation and equalisation of corporate tax rates.

## **2.5 Global transfer pricing trends**

Literature on transfer pricing practices in general is limited. From Table 5 it can be derived that the pressure on MNE's from tax authorities is not dissipating. There might be a shift in focus to different areas, such as intellectual property and tangible goods but it remains a rewarding area of compliance and enforcement if 33.3% of transfer pricing audits results in an adjustment (Ernst and Young, 2003:7).

*Table 5: Key global transfer pricing trends – a comparative survey*

<b>Key Global Findings in 2001</b>	<b>Key Global Findings in 2003</b>
Since 1995, transfer pricing remains the prominent international tax issue for parent companies and they expect it to be so for the next two years.	Eighty-six per cent of parent and ninety three per cent of subsidiary respondents identified transfer pricing as the most important international tax issue they currently face
Some MNE's insist on single transfer pricing for both management and fiscal purposes whilst others maintains two sets of prices.	Seventy six per cent of all respondents think an audit is likely to occur in the next two years.
Two thirds of parent and half of subsidiaries have not considered the transfer pricing issues around their e-commerce activities.	All companies are exposed to audits, however, the bigger companies have a higher than average exposure.
Transfer pricing audits continue to be a major issue for companies around the globe and in 2001, nearly two thirds of the respondents to the survey report having suffered a transfer pricing audit somewhere in the organisation.	Tangible goods account for the highest proportion of audits, although taxpayers are more concerned about services and financial transactions.
Transfer pricing audits are generating slightly more adjustments in 2001 than in 1999. Adjustments are most prevalent in the field of technical and management services albeit that level of double taxation remains worryingly high.	One-third of audits conclude with an adjustment being made with forty percent of adjustments resulting in double taxation. Less than twenty per cent of respondents have used the component authority process for relief of double taxation.
MNE's are missing shareholder value building opportunities by not integrating transfer pricing up front in strategic business actions such as mergers, acquisitions, divestures, e-commerce and intellectual property (IP) management.	Intellectual property and financing transactions are more likely to result in adjustments
Management of intellectual property (IP) has been relegated to tracking, registering, and not tax-efficient exploitation.	Services and intangibles are attracting increased attention from tax authorities world-wide
The majority of the companies continue to base their performance measures on pre-tax financial results, a model that in difficult times could focus on inter-company transactions rather than market related transactions.	Only eighteen per cent of MNE's that were involved in a recent merger used the opportunity to re-examine overall policies

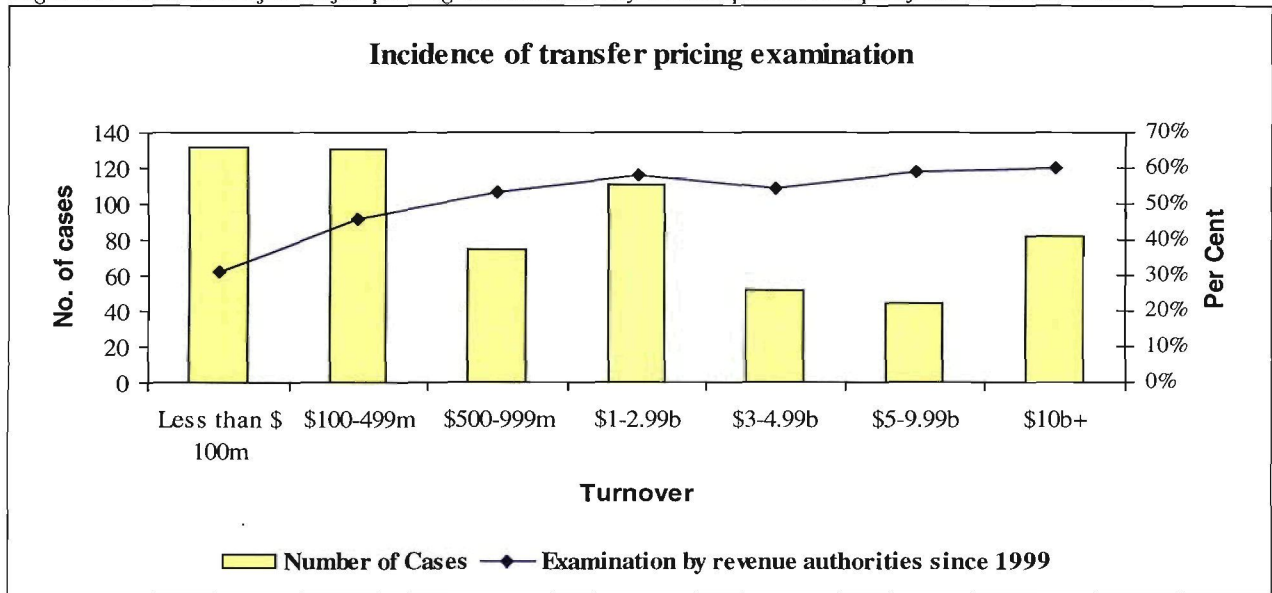
*(Source: Ernst and Young 2001:5 and Ernst and Young 2003:7)*

Emerging from the findings is the seemingly reluctant use of the competent authority process with less than 20% of respondents suffering from double taxation making use of the process. This is significant when 40% of transfer pricing adjustment resulted in double taxation with double taxation agreements aiming to limit double taxation through the competent authority process. The comparative survey does not indicate whether this could be attributed to non-treaty partner cases where the competent authority process is not in place without corresponding tax relief.

### 2.5.1 Transfer pricing audit trends

In conducting a global survey, it is asked whether it is likely to be exposed to an audit, what is the likelihood that an adjustment may follow and how likely is it to suffer penalties (Ernst and Young, 2003:10). The incidence of transfer pricing examination by the annual revenue of the parent is significant as illustrated in Figure 5:

Figure 5: Incidence of transfer pricing examination by annual parent company revenue since 1999



(Source: Ernst and Young 2003:11 and own compilation)

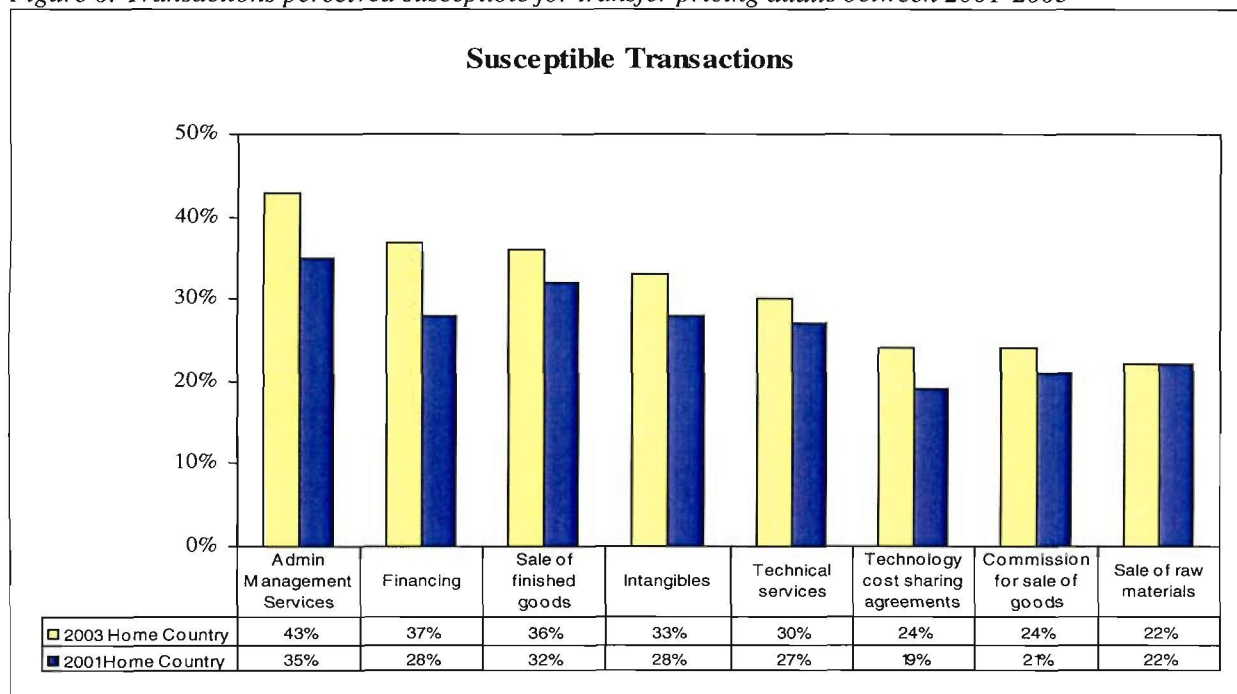
Since 1999, close to half of parent company respondents stated that they were subject to a transfer pricing audit somewhere in the organisation. According to the survey, the following emerged:

- Intangibles are attracting increased attention from tax authorities.
- Sixty per cent of MNE's with consolidated revenues in excess of US\$ 5 billion attracted transfer pricing audits compared to 31 per cent of MNE's with a consolidated turnover less than US\$ 100 million. This is indicative that although large MNE's receives the majority of attention from a transfer pricing enforcement perspective, smaller MNE's are not exempt from transfer pricing audits.
- Companies headquartered in Switzerland still remains the most vulnerable to an audit globally; 80 per cent of Swiss respondents experienced transfer pricing audits in the preceding three years. Headquartered companies in the Netherlands (76%), United States (71%), Sweden (69%) and France (65%) seem to follow the trend.

## 2.5.2 Susceptible transactions

The enforcement of transfer pricing regulations resulted in MNE's being of the belief that certain transactions are more susceptible for future transfer pricing audits as illustrated in Figure 6 (Ernst and Young, 2003:10-11). Inter-company services are a part of the service economy and by its presence in connected party dealings will attract transfer pricing scrutiny. Ernst and Young (2003:12) state that from their experience MNE's shy away from contemporaneous documentation relating to the services.

Figure 6: Transactions perceived susceptible for transfer pricing audits between 2001-2003



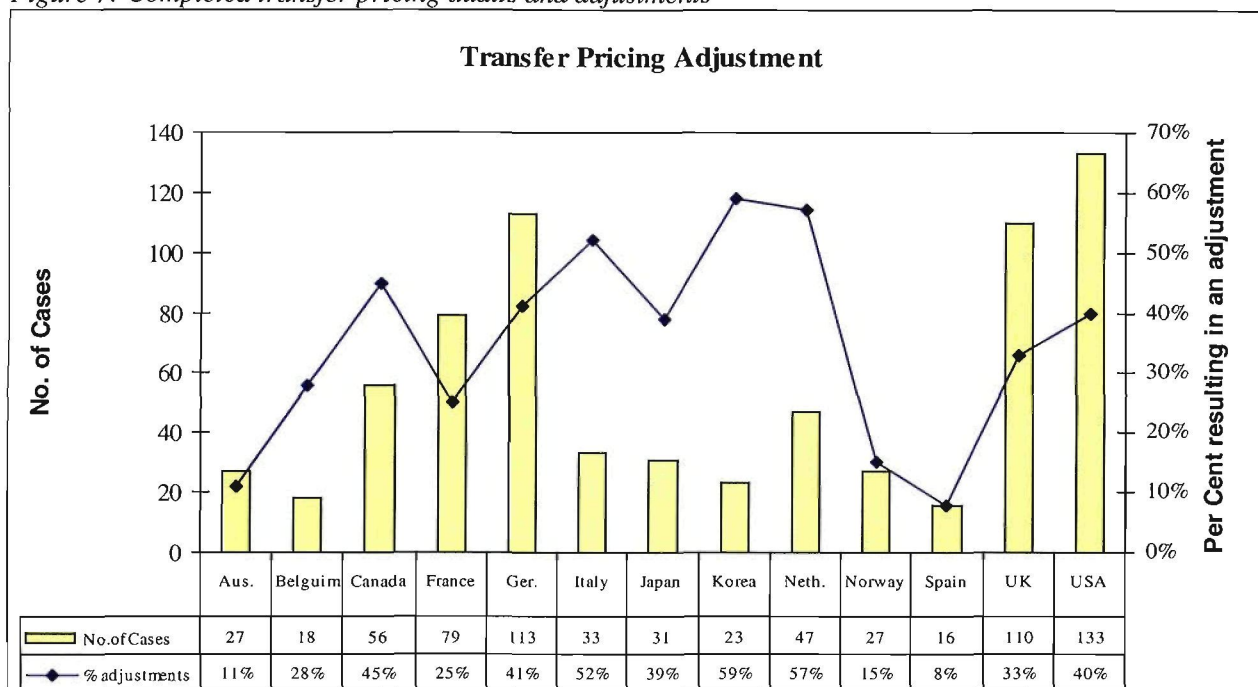
(Source: Ernst and Young 2003:12 and own compilation)

In the event that documentation does not substantiate service charges, adjustments could be more likely. In the research, services does not form part of the primary objective or an integral part of the scope, hence the discussion surrounding services as is the case with intangibles is not exhaustive. However, it is noteworthy, that that sale of finished goods, referred to as tangible goods, is still regarded as susceptible transactions, increasing from 32 per cent in 2001 to 36 per cent in 2003.

### 2.5.3 Transfer pricing audits and adjustments

Ernst and Young (2003:14) reports that respondents who experienced transfer pricing audits since 1999 reports that 893 separate issues were raised in the audits with 21 per cent of them remaining unresolved and 33.3 per cent of the remainder resulting in an adjustment. Illustrated in Figure 7 is a summary of the completed audits, which ended in a transfer pricing adjustment.

Figure 7: Completed transfer pricing audits and adjustments



(Source: Own compilation and Ernst and Young 2003:14)

From the graph, it is apparent that Korea, the Netherlands and Italy make transfer pricing adjustments in more than half the cases finalised. Canada, Germany and the US make transfer pricing adjustments in approximate two out of every five cases finalised. Tangible property transfer pricing audits resulted in adjustment in 31 per cent of the finalised cases with adjustments in relation to intangible property resulting in adjustment of 43 per cent of cases (Ernst and Young, 2003: 15)

South Africa was a participant in the 2003 survey but the South African survey did not include South African companies or transfer pricing audits. Therefore, no information is available on transfer pricing audit results in South Africa.

## 2.5.4 Country specific findings

In the 2001 Ernst & Young report, 22 countries were included in the survey. The responses by the MNE's in the countries and their respective fiscal authorities' give an indication of the direction transfer pricing is taking in the countries being surveyed and are illustrated in Table 6:

Table 6: Selected country specific responses

Country	Per cent of respondents that rate transfer pricing as very important	Per cent of respondents expecting an audit soon	Per cent of respondents that include transfer pricing as part of corporate strategic planning process	Per cent of respondents that charge Intellectual property for tax purposes and management purposes
Argentina	45%	66%	35%	11%
Australia	48%	56%	4%	27%
Belgium	60%	35%	30%	
Brazil	36%	84%	36%	
Canada	68%	84%	28%	25%
Denmark	92%	92%	35%	
Finland	80%	84%	32%	
France	80%	67%	48%	50%
Germany	52%		52%	67%
Republic of Ireland	60%	47%	17%	
Italy	40%	12%	32%	40%
Japan	76%	40%	28%	
Korea	23%	20%	17%	88%
Mexico	72%	44%	40%	25%
The Netherlands	64%	60%	12%	17%
New Zealand	77%	91%	14%	17%
Norway	40%	44%	20%	
Spain	64%	32%	32%	
Sweden	56%	52%	36%	
Switzerland	83%	63%		
United Kingdom	49%		25%	27%
United States	57%		30%	10%

(Source: Own compilation and Ernst & Young 2001: 29-51)

It is concerning that such a small percentage of respondents include transfer pricing as part of corporate strategic planning process. Only in Germany, more than half of the respondents include transfer pricing as part of their corporate strategic planning process.

## 2.6 Conclusion

Globalisation brought about substantial changes in economies it came into contact. Globalisation has two distinct dimensions, firstly scope (or stretching) and secondly, intensity (or deepening). On one hand, globalisation defines a set of processes which embrace most of the globe or which

operate worldwide, the spatial connotation. On the other hand, globalisation also implies intensification on the levels of interaction, interconnectedness or interdependence amongst countries, which constitute the world community.

Global capitalisation can fail. Inadequacies of the contemporary markets and institutions can lead to the failure of globalisation. Failure is discernable as market, institutional and moral failure. Market failure is driven by structural and endemic failures such as inappropriate macro economic policies, overvalued or tied currencies and a strong black market. Institutional failure is driven by an inadequate regulatory and supervisory system. Moral failure is as a result of especially nepotism and prevalence of corruption and bribery.

Globalisation comprises structural transformation that affects enterprises and countries giving rise to new relationships and interdependencies. Globalisation creates a multiplicity of linkages and interconnections amongst countries and societies, which make up the present world system. The multiplicity of linkages and interconnections is aligned to the spatial perspective, linking globalisation with the MNE insofar as it relates to an integrated production network being spread over various geographic locations, a form of economic integration stretching national boundaries.

Transfer pricing concurs within the multiplicity of linkages, linking globalisation with the MNE as an integrated production network spread globally, a form of global economic integration. MNE's uses FDI to achieve efficiencies and secure strategic assets. FDI, is not a once off occurrence, it has an initial and sequential component. Initially FDI is aimed at resource seeking and market seeking (securing). Sequential FDI is firstly aimed at efficiency seeking through rationalisation of production to exploit economies of scope and specialisation across value chains (product specialisation) and along value chains (process specialisation). Secondly, sequential FDI is aimed at strategic (created) asset seeking to advance regional or global strategy. This strategic asset seeking is obtained through access to and leverage of technology, organisational capabilities and markets.

A country, in which MNE's operates, are being affected by the MNE's ability to establish and operates through an integrated production network, spread globally. With economic interaction and interconnectedness of the MNE, it is not surprising that transfer pricing is becoming increasingly important, for managers of MNE's and tax administrations alike. Statistics echoes the prevalence of transfer pricing with MNE's regarding transfer pricing being regarded as the

prominent international tax issue. MNE's are considering the importance of transfer pricing with eighty-six per cent of parent companies and ninety-three per cent of subsidiaries identified transfer pricing as the most important international tax issue on the agenda.

South Africa is not immune to the global trends concerning transfer pricing. South Africa's economy opened up considerably since democratisation in 1994. With the relaxation of exchange controls by the South African Reserve Bank, legislation was introduced in 1995 to prevent profit emigration.

Introduction of legislation is not sufficient in itself to regulate transfer pricing. South Africa established in 2001 a dedicated, technical specialist unit to exclusively deal with transfer pricing. South Africa made use of the experiences and expertise of other countries as well as the OECD. Guidelines published by the OECD became the foundation of South African practice. South Africa engaged the international community further by becoming an observer at the OECD where the latest developments in transfer pricing are discussed, consensus being sought for current work on transfer pricing and related matters.

## **Chapter 3      The pricing of cross border transactions**

### **3.1 Introduction**

A country, in which MNE's operates are affected by the MNE's ability to establish and operates through an integrated production and market network with global coverage. Transfer pricing concurs within the multiplicity of linkages, linking globalisation with the MNE as a network of global economic integration. Transfer pricing, the process by which MNE's set the prices at which they transfer goods or services amongst each other, occurs within this network of global economic integration.

MNE's uses FDI to attain efficiencies and secure strategic assets. MNE's initial FDI is aimed at securing resources and markets. Subsequent to the initial FDI, MNE's continual FDI is aimed at enhancing efficiency through rationalisation of production to exploit economies of scope and specialisation across value chains (product specialisation) and along value chains (process specialisation). Further FDI is aimed at strategic assets to advance the MNE's regional or global strategy (Dunning, 2002:203).

Economic integration and interconnectedness of the MNE is a reality. Hence, it is not surprising that transfer pricing is becoming increasingly important, for managers of MNE's and tax administrations alike. MNE's in 2003, acknowledged the importance of transfer pricing with eighty-six per cent of parent companies and ninety three per cent of subsidiaries identified transfer pricing as the most important international tax issue on the agenda (Ernst & Young, 2003:7).

Acknowledgment of the importance of transfer pricing necessitate that pricing of cross border transactions is firstly based on the broad legislative framework. Principles and concepts such as the arm's length principle and comparability are the foundation of transfer prices. Transfer pricing, is process driven with certain methodologies being accepted as the international standard. An analysis of the methodologies in conjunction with research on their respective use provides insight into this complex topic.

## **3.2 The concept of transfer pricing**

Transfer pricing, in the context of this research, (refer to section 1.6.33 for the definition) is the process by which MNE's set prices at which they transfer goods or services amongst each other (South Africa, 1999:4). The process of transfer pricing does not necessarily involve the pricing of goods and services, which are for the most part based on economic realities.

If a non-market value, being an inadequate or excessive consideration, is paid for the transfer of goods or services amongst the members of an MNE, the income calculated for each of those members will be inconsistent with their relative economic contributions. This distortion will influence the tax revenues of the relevant tax jurisdictions in which MNE's operates (South Africa, 1999:5). In order to address the special considerations involved in transfer pricing, a specific section dealing with transfer pricing was introduced in the Act in 1995.

### **3.2.1 Regulations and guidance**

#### ***3.2.1.1 Section 31 of the Act***

In anticipation of relaxation of exchange control, the Commission of Inquiry into certain aspects of the Tax Structure of South Africa recommended in 1996 in its first and second interim reports that transfer pricing provisions to be introduced into the Income Tax Act, 1962 (the Act). The complete section of the Act is disclosed in Chapter 1 under section 1.6.28 and can be read in conjunction with this discussion.

South Africa (1999:6-7) clearly states that Section 31 was introduced into the Act in 1995, to counter transfer pricing practices which may have adverse tax implications for the South African fiscus. Section 31 consists of a combination of transfer pricing and thin capitalisation (specified debt-to-equity ratio) provisions. The measures to contest transfer pricing schemes are in essence contained in section 31(1) and (2) of the Act. The provisions of section 31(3) are more specifically aimed at countering thin capitalisation schemes.

The OECD Guidelines (OECD, 1995:I-5,I-19,IV-3) as well as PN 7 (South Africa, 1999:9,27) reiterates that transfer pricing is not an exact science. Hence, in practice, the non-exact nature of transfer pricing necessitates discretion and in terms of Section 31, the Commissioner of the SARS may exercise discretion in the following circumstances in relation to cross border transactions:

- Where the acquirer of the goods or services is a connected person in relation to the supplier of those goods or services, including the supply of goods and services to or by a permanent establishment which either such acquirer or supplier has in South Africa or which either such acquirer or supplier has outside South Africa; and
- The goods or services are supplied at a price other (greater or less) than the arm's length price.

In practice, the Commissioner will exercise discretion in respect of all transactions entered into in respect of a product or service during any period. However, in terms of section 31(4) of the Act, the Commissioner's decision is subject to objection and appeal. This discretionary status of the application of transfer pricing is contributing to ambiguity and subjective interpretation. The Commissioner published Practice Note 2 and 7, which deals with the issues of transfer pricing.

### ***3.2.1.2 Practice Note 2***

Financial assistance and in particular thin capitalisation rules (prescription in terms of debt-to-equity ratios) are applied to limit the deductibility of interest. The deductibility of interest is where there is a disproportionate ratio between the loan capital and the equity employed in an enterprise.

Financial assistance falls outside the scope of the research refer to section 1.5. In ZA Case 01, the empirical case research, financial assistance formed part of the evaluation. The particular issue considered was the excessive portion of financial assistance. The discussion will provide only a short disclosure on excessive financial assistance

Consideration paid for financial assistance is interpreted to include interest, related finance charges but also could include a discount or premium. The formulary approach followed in the determination of the "excessive" portion of financial assistance is based on the following (South Africa, 1996:3):

- Where the loan, advance or debt is denominated in rand, a rate not exceeding the weighted average of the South African prime rate plus 2 percentage points will be an acceptable nominal annual interest rate.

- Where the loan, advance or debt is denominated in a foreign currency, a rate not exceeding the weighted average of the relevant inter-bank rate plus 4 percentage points will be an acceptable nominal annual interest rate. Any interest exceeding the above-mentioned prescribed rates will be regarded as excessive interest and will consequently not be allowed as a deduction for income tax purposes.

Applying economic and commercial logic to this concept, the reward could not be construed to cater exclusively for interest only; there might be other considerations that could reflect the payment in “kind”, such as market access, business strategies that could skew the reward being paid for financial assistance if an interest payment is the only criterion.

ZA Case 01’s financial assistance fell substantially outside the debt-to-equity ratio allowed with all debt being interest bearing. In addition to initial loans, ZA Case 01, paid its MNE counterparts at the point of order whilst its MNE counterparts were paying it 30 days after receipt of goods. ZA Case 01 was locationally removed from its MNE counterparts, receipt of goods from order to receipt amounted to 8 weeks. It is clear that ZA Case 01 was in a position that an independent party would require compensation for the time value of money.

### ***3.2.1.3 Practice Note 7***

Practice Note 7 (PN 7) is based on the OECD Guidelines (OECD, 1995:P-1–AN-18) and assistance received from the Policy Advice Division of the Inland Revenue Department in New Zealand. South Africa is currently not a member country of the OECD but notwithstanding that fact, the OECD Guidelines are acknowledged as an important, influential document that reflects unanimous agreement amongst the member countries, reached after an extensive process of consultation with industry and tax practitioners in many countries. South Africa follows the OECD Guidelines in transfer pricing.

PN 7 is a practical guide and is not intended to be prescriptive or an exhaustive discussion of every transfer pricing issue that might arise. *Criticism with regards to the lack of specific guidelines must be seen within the premise that each case are decided on its own merits with allusion to each specific MNE’s business strategies* (refer to section 1.6.2 for a definition and section 3.2.2.2 where the importance insofar as comparability is discussed) being followed and commercial judgment of the management team under specific circumstances.

The OECD Guidelines should be followed in the absence of specific guidance in terms of PN 7, the provisions of section 31 or the tax treaties entered into by South Africa. Direct reference to the OECD Guidelines include the chapters in the OECD Guidelines dealing specific with intangible property (South Africa, 1999:34 and OECD, 1995:VI-1), intra-group services (South Africa, 1999:34 and OECD, 1995:VII-1) and cost contribution arrangements (South Africa, 1999:34 and OECD, 1995:VIII-1). Transactions involving intangible assets and cost contribution arrangements falls outside the scope of this research. Over and above reference to specific, transfer pricing principles such as the arm's length principle (South Africa, 1999:8 and OECD, 1995:I-3), the practice note makes specific reference to financial transactions (South Africa, 1999:7) and tax treaties (South Africa, 1999:7).

#### 3.2.1.3.1 Financial transactions

Financial transactions are dealt with in PN 7 and accordingly the definition of services as contained in section 31 with South Africa (1999:7) clearly stating that it *“includes financial transactions and therefore applies to non-arm's length interest, discounts and other payments for the use”* of or access to money (South Africa, 1999:7). The practice note (South Africa, 1999:7) alludes to the fact that the consideration for the use of funds obtained from, or conversely made available to, a connected person may be unacceptable to the Commissioner for reasons other than that of tests of solvency and equity position such as debt-to-equity ratio, times interest earned or a high rate of interest expense as provided in PN 2 (South Africa, 1996:1).

It is possible that terms and conditions attached to financial assistance amongst connected parties could be structured and disclosed in such a way that routine tax assessment fails to establish whether it conforms to the arm's length standard. In the event that the consideration paid under the terms of the financial transaction does not conform to the arm's length principle the provisions of section 31 will be applied for tax purposes (South Africa, 1999:7). Financial transactions and in particular those that falls within the scope of PN 2 are not the focus of the research, hence detailed analysis is not performed (refer to section 1.5).

#### 3.2.1.3.2 Double Taxation Agreements

Interpretation and analysis of double taxation agreements (DTA's) falls outside the scope of this research (refer to section 1.5). This reference to DTA's here is primarily for clarity and it is not

analysed in any detail. Article 7 of the OECD Model provides for the attribution of profits to a permanent establishment (OECD, 2000:26) of an enterprise (OECD, 2000:28). Article 9 requires that the arm's length principle must be applied to commercial and financial transactions amongst associated companies or connected parties residing in the contracting states. These principles are embodied in each one of South Africa's tax treaties.

It is important to note that tax treaties cannot impose tax liability; they merely allocate existing tax liabilities amongst countries with the tax liabilities being imposed by virtue of domestic legislation. International case law and as such its rulings are not prescriptive in the administration of international transactions but form part of the reference used in domestic cases.

The articles in the OECD Model and in the specific tax treaties that deals with "*business profits*" and "*associated enterprises*" does not propose a hierarchy of methods nor does it indicate priorities as to the methods to be used to determine the attribution of profits or an arm's length price (OECD, 2000:30-31). In light of the guidance from the OECD, the Commissioner of the SARS holds the view that the treaties do not restrict or limit the application of section 31 of the Act (South Africa, 1999:7). This is regardless of the method selected to determine an arm's length consideration and it is apparent that no inconsistency exists amongst domestic law and the tax treaties, as both embody the arm's length principle (South Africa, 1999:7; OECD, 1995:I-1–I-27 and OECD, 2000:30).

Provisions of section 31 of the Act are applicable to persons, which are separate legal entities in their own right. The contents of PN 7 apply to determine the arm's length consideration for income tax purposes of cross-border transactions. Such transactions conducted by a person with a connected person; a person's head office with a branch of such person; or a person's branch with another branch of such person in the application of the tax treaties entered into by South Africa (South Africa 1999:7).

#### 3.2.1.3.3 Reasonableness of transfer pricing guidelines

From PN7 it is apparent that South African MNE's should make a conscientious effort to establish that their transfer prices comply with the arm's length principle. The arm's length principle is set out in the Act, PN 7 and OECD Guidelines and provides guidance about the preparation of

contemporaneous documentation (OECD, 1995:V-1–V-10 and South Africa, 1999:23) to evidence their compliance with section 31 of the Act.

In the event that a South African MNE have taken it upon itself to substantiate its connected party dealings in accordance with the arm's length principle, the Commissioner of SARS (South Africa, 1999: 34) is probable to determine *prima facie* that the particular MNE's' transfer pricing practices is at low tax risk. Conversely, in the absence of adequate consideration by MNE's to their transfer pricing practices, they are likely to evoke greater scrutiny from the Commissioner into their international transactions. Although PN 7 is not prescriptive, it does provide guidance for the determination of an arm's length consideration (South Africa, 1999:34).

### **3.2.2 The arm's length principle**

The *basis of the arm's length principle* (refer to section 1.6.1 for the definition) is that transactions amongst connected parties are to be conducted at *arm's length* (South Africa, 1999:8). In essence this means that the *transaction should have the substantive commercial and financial characteristics of a transaction amongst independent or unrelated parties, where each party, out of own interest, strives to get the utmost possible benefit from the transaction under the particular circumstances* (OECD, 1995:G-1,I-1, South Africa, 1999: 9).

The *challenge* is to determine how an MNE should determine what price would have arisen if transactions amongst its members were subject to market forces, as it *would have been* if it was an unconnected transaction. This, notwithstanding the fact that a market, in the true economic elucidation of a willing buyer and willing seller does not exist in connected party dealings.

The solution promulgated by the arm's length principle is that comparable transactions amongst independent parties, referred to as uncontrolled transactions should be used as a benchmark against which to appraise the MNE's prices or profits it derive from the controlled transaction (OECD, 1995:I-3 and South Africa, 1999:9). Any material difference between the two transactions being compared that could influence the benefit derived by the parties to it can and should be identified and an adjustment be made accordingly. An arm's length price that reflects, or being interpreted as a fair proxy of the economic contributions made by the parties to the transaction can subsequently be determined for the controlled transaction under consideration.

South Africa has adopted the arm's length principle with the opinion that application of this internationally accepted principle will minimise the potential for double taxation. Several reasons have been given why OECD member countries and non-member countries accepted the arm's length principle. However, the major reason (OECD, 1995:I-3) is that the arm's length principle provides broad parity of tax treatment for MNE's and unconnected parties, in essence it has become the international norm.

Considerations, other than tax, such as governmental regulations, price or exchange controls may distort the prices being charged amongst connected parties (OECD, 1995:I-22). The OECD Guidelines (OECD, 1995:I-22) and the Commissioner (South Africa 1999:30) recognise the factors that could potentially influence prices. PN 7 provides broad guidelines about business (refer to section 3.2.2.2 which deals with business strategies in terms of comparability) and economic realities (refer to section 3.2.2.2 which deals with economic circumstances in terms of comparability) that might indicate which information, data and other evidence could support a contention that a transaction has occurred at arm's length (South Africa, 1999:9).

PN 7 (South Africa, 1999:9) as well as the OECD Guidelines (OECD, 1995:I-19) acknowledges that the determination of an arm's length consideration is not an exact science but requires judgment on the part of both the MNE and the tax authority. It is therefore in the best interest for all the parties involved to approach each case with careful consideration for the unique business and market realities pertinent to each individual case. The determination of an *arm's length consideration* does not necessarily constitute a single price unless a direct price comparison is being made, it usually comprises of a range of prices or profit indicators and the facts of each case will determine where, within that range, a specific arm's length consideration will lie (OECD, 1995:I-19).

### ***3.2.2.1 Determining an arm's length consideration***

#### **3.2.2.1.1 Prescription**

Neither section 31 of the Act, PN 7 (South Africa, 1999:14) nor any of the tax treaties entered into by South Africa (OECD, 2000:30) is prescriptive insofar as any particular transfer pricing methodology to be used for the purpose of establishing an arm's length consideration for a particular transaction. Given the fact that there is no prescribed legislative preference, in practice

the method that could be regarded as the most appropriate method to be applied under the circumstances are used after considerable consideration of the facts at hand (OECD, 1995:I-27).

#### 3.2.2.1.2 The approach followed in practice

Generally, MNE's make a concerted effort to prepare contemporaneous documentation pertaining to their transfer pricing practices. Although there is no explicit statutory documentation requirement in South Africa, it is in the MNE's best interest to keep such documentation as evidence of its transfer pricing practices (South Africa, 1999:23). Furthermore, the income tax return requires MNE's to supply certain information regarding their connected party dealings and in the absence of documentation, it will be very difficult to answer these questions truthfully.

In assessing the transfer pricing practices of an MNE and establishing the arm's length consideration the following provides an indication of the deliberation in establishing arm's length dealings (South Africa, 1999:34):

- Establish economic justification prior to the transaction is entered into
- Establish and substantiate that the consideration being paid is an arm's length consideration
- Prepare and retain contemporaneous documentation to support the economic justification and the substantiation of the arm's length consideration as well as the assessment of market conditions at the time when the pricing decisions were made
- Qualify the selection of the most appropriate method used under the circumstances
- Establish and consistently follow a systematic approach and process for setting transfer prices in accordance with the arm's length principle

In the assessment process, the MNE is evaluated in terms of the functions the specific MNE is performing, the assets used in performing these functions and the risk assumed in the performance thereof. A practical approach to evaluate functional comparability is by undertaking and preparing a functional analysis (South Africa, 1999:11).

The determination of the arm's length consideration is based on the functions; assets and risk identified during the functional analysis of the MNE under evaluation (refer to sections 3.2.2.2 and 5.3.3 for more detail on the functional analysis and section Appendix 5.2 where the interview questionnaire is disclosed). In order to determine the arm's length range, comparable data is used.

### *3.2.2.2 Functional Analysis*

Reimbursement for the transfer of goods or services amongst unconnected parties usually reflects the functions that each party performs. Reimbursement take cognisance of the risks (total risk which is the sum of diversifiable and idiosyncratic risk, a more comprehensive discussion of risk is provided in section 4.3.5 ) assumed and the assets used in performing these functions. In the determination of comparable transactions, for the purpose of administering transfer pricing regulations, the functions and risks undertaken by the unconnected or independent parties should be compared to those undertaken by the connected parties that are investigated (OECD 1995:I-9).

The OECD Guidelines (OECD, 1995:I-10) and PN 7 (South Africa, 1999:10) envisage that when various and distinct functions are performed by unconnected parties, the enterprise that provides most of the effort and of particular importance the rare or unique functions as well as assuming the most risk should earn a greater portion of the profit attributed to the transaction. This situation is not any different for an MNE, the part of the MNE that provides most of the effort and the rare or unique functions in addition to assuming the most risk should earn a greater portion of the profit associated to the transaction.

The majority of the transfer pricing methods such as the Cost Plus, Resale Price, Transactional Net Margin and Profit Split methods (refer to sections 3.2.2.4 and 3.3.2 for a detailed discussion) focus on the functions performed, risks assumed and assets used instead of the goods or services being transferred. The establishment of functional comparability of the MNE and the independent enterprise(s) it is being compared to is important when the Cost Plus, Resale Price, Transactional Net Margin and Profit Split methods are used.

In contrast to the high degree of functional comparability required by the previously mentioned transfer pricing methods, the Comparable Uncontrolled Price (CUP) method is based on a direct comparison of the price charged for goods or services in a controlled transaction and uncontrolled transaction. When a direct comparison is made, the characteristics of the goods or services are significant and important to consider. In practice, functional comparability can be established and evaluated by undertaking a functional analysis. A functional analysis is a methodological approach evaluating and organising facts pertaining to any enterprises' functions it performs, the assets being used and the risk assumed by undertaking these functions (South Africa, 1999:11).

The aim of the functional analysis is the objective identification of the relative contribution of the parties involved in the transaction under review. Through virtue of the design of a functional analysis, the emphasis is on identification of all economically significant activities. The identified activities relates to functions performed, assets used and risk assumed that are carried out by the member of an MNE that is under investigation and for which it should expect to be rewarded equitably.

In addition, the functional analysis assists in the appraisal of comparables to be used in evaluating connected party dealings. *A functional analysis is not a transfer pricing analysis in its own right. It is an analysis tool* aimed at identifying the functions to be considered in addition to providing assistance in the determination of the most appropriate method to be used under the specific circumstances. The transactions to be evaluated dictate the dynamics of the functional analysis (South Africa, 1999:37) with the functional analysis addressing (refer to section 5.2 where the facts pertaining to the functional analysis of ZA Case 01 is disclosed) the following aspects:

- An overview of the tested party (refer to section 1.6.34 for a definition)
- Assessment of the general industry conditions affecting the tested party
- Direct consideration of the affected transaction refer to section 1.6.9 for a definition) under review
- Evaluation of the actual contractual terms of the affected transaction
- The functions undertaken by the relevant connected parties to the affected transaction
- Assessment of the profit contribution of connected parties in relation to the affected transaction
- An appraisal of risk

PN 7 (South Africa, 1999:11) further emphasises that consideration is required as to whether a purported allocation of risk is consistent with the economic substance of the transaction. In practice, the connected parties' conduct under the specific circumstances of a particular case is generally taken as the best evidence concerning the true allocation of risk. However, the functions undertaken by an entity can sometimes indicate of risk allocation amongst the connected parties.

Two further considerations are required in undertaking the functional analysis, economic circumstances and business strategies.

#### 3.2.2.2.1 Economic Circumstances

There might be expectations that arm's length prices should vary across different markets, even going as far as to expect it for transactions involving the same or similar goods or services (OECD, 1995:I-12). In an attempt to attain comparability for the purpose of applying the arm's length principle it is imperative to ensure that the markets being compared are comparable with differences not having a material effect on price, or appropriate adjustments can be made to negate the differences. The OECD Guidelines (1995:I-10) and PN 7 (South Africa, 1999:12) identifies some factors that could be relevant for market comparison albeit that the list is not exhaustive, comprises of the following:

- geographic location of the market;
- size of markets;
- extent of market competition;
- substitute goods and services availability within the markets;
- transportation costs; and
- the level of the market (retail or wholesale).

These abovementioned factors might be relevant within the South African market mainly due to South Africa's relatively small open economy with comparables being difficult (if not impossible) to obtain. In practice, the Commissioner of SARS accepts that South African comparables are very difficult to obtain hence the acquiescence of foreign country comparables in transfer pricing analyses (South Africa, 1999:26).

This acceptance of foreign comparables does not provide MNE's the opportunity of not assessing the impact of economic differences by virtue of using foreign comparables. The approach followed by using these foreign comparables should not diverge from what it would be if South African comparables were available. Whilst foreign comparables may prove to be useful, MNE's need to be prudent in their approach to ensure that appropriate adjustments reasonably reflects the differences amongst the South African and foreign market(s) being compared.

### 3.2.2.2.2 Business Strategies

The relevance of business strategies insofar as comparability for transfer pricing purposes can be best understood in acknowledging that business strategies are a legitimate aspect of arm's length operations. Business strategies for the purpose of transfer pricing administration would take into account all the aspects that have a bearing on the day-to-day operation and conducting of the business (OECD, 1995:I-13).

Applying commercial logic to the purported business strategy, such as a market penetration strategy, it is not farfetched for an MNE on such an endeavour to bear unusual expenses with little or very little profit if compared to their competitors. However, it might be acceptable over the short term; the benefits derived from following the strategy should realise and be unquestionable (South Africa, 1999:14).

The issue at hand is still how to assess a business strategy that decreases profits in return for potential higher long-term profits in terms with the arm's length principle. The test remains if an unconnected party under similar conditions will be prepared to sacrifice its profits over a similar time. If the answer is undoubtedly "yes" and can be proven as such, then it is apparent that per definition the dealings are consistent with the arm's length principle. In the administration (South Africa, 1999:14) of the transfer pricing provisions consideration are given to the following:

- Whether the conduct of the MNE is consistent with the professed business strategy;
- If nature of the relationship amongst the members of the MNE to the controlled transaction justifies that the MNE bears the costs of the business strategy;
- If there were a plausible expectation that the business strategy will produce a return for the MNE sufficient to justify its costs, within a period of time that would be acceptable in an arm's length arrangement.

### 3.2.2.3 *The concept of comparability*

The principle of comparability is entrenched in South African practice (South Africa, 1999:9) which follows the international norm as expressed in the OECD Guidelines (OECD, 1995:I-7) that the application of the arm's length principle is generally based on a comparison of the conditions in a controlled transaction with the conditions in transactions amongst unconnected parties.

Validity of such comparisons and by implication the arm's length consideration so determined must be sufficiently comparable to the economic characteristics of the transactions being assessed.

Comparable means that none of the differences if any exist, amongst the transactions being compared could in any way materially affect the price or margin determined and if differences exists, that reasonable adjustments could not have been made to restrict or diminish the effect of the differences.

When applying any of these accepted transfer pricing methods (described in the sections 3.2.2.4 and 3.3.2), the comparability amongst the tested party and the independent entities it is being compared to is important. In contrast to this, the application of the CUP method, when a direct comparison is made amongst the price for a specific good or service, item characteristics is important. Hence, in practice comparability adjustments to reflect differences (refer to section 4.3.3 for more detail), such as quality, inventory and country specific factor adjustments (refer to section 5.4.5.2 for further details).

#### 3.2.2.3.1 Internal and external comparables

In practice, two types of comparables can be identified, i.e. internal comparables and external comparables and both contribute to the assessment of comparability in administering transfer pricing regulations (refer to Figure 18 where internal and external comparables in conjunction with methodologies are illustrated) (South Africa, 1999:15).

- Internal comparable transactions are the transactions that take place amongst the specific MNE and independent, unconnected parties. These transactions can be used to make comparisons to transactions that take place amongst the MNE and its affiliates, in whatever legal or business form.
- External comparables are these transactions amongst independent or unconnected parties without any reference to the specific MNE being evaluated. Detailed information about these external comparable transactions are not often freely available and use of these comparables must take place after careful consideration of the facts to achieve objectivity. External comparables are often used due to the lack of internal comparable information. In order to achieve the highest level of objective assessment, various electronic commercial

databases can be used to identify the external comparable dataset. In this research, use of Bureau VAN Dijk's Amadeus Pan-European database is made.

Internal comparable transactions are preferred to external comparable transactions because they occur within the business and operational environment of the MNE being assessed and information is usually readily available. In applying the recognised transfer pricing methodologies, it would be expected that the traditional methods would be relatively easier to apply than what would be the case with external comparables.

#### 3.2.2.3.2 Factors influencing comparability

The biggest concern currently under discussion at the OECD is the availability of comparable data and the sources of such data (OECD, 2005:1). The OECD Guidelines (OECD, 1995:I-9) and PN 7 (South Africa, 1999:10-13) recognises that any of the following factors could influence comparability:

- Characteristics of goods and services. Differences in the specific characteristics of goods and services are often a good proxy for the differences in their relative value in the market. Applying this principle in practice, characteristics will play an important role if price comparisons are undertaken.
- The relative importance of functions performed. Commercially, in dealings amongst two parties one would expect that compensation and rewards would be associated with the relative functions each party performs in relation to each other.
- The terms and conditions of the relevant agreements. In arm's length dealings the contractual terms, pertaining to a transaction defines explicitly the division amongst the parties to the agreement of the responsibilities, risks and rewards.
- Economic and market conditions. Arm's length considerations vary across different markets albeit that similar property or services are being transferred. In light of the comparability challenge, it must be assessed if the differences are material and if regarded as material that appropriate adjustments are made. (Adjustment and the appropriateness of such adjustments are dealt with in the empirical section of this research.)
- Business strategies. Business strategies form an integral part of any business and as such, cognisance of it should be taken in the determination of an arm's length consideration.

Failing to evaluate and investigate these strategies would result in subjective assessment. Business strategies that could influence profitability are usually the strategies concerned with innovation and new product development, the business' degree of diversification and risk aversion. Timing differences amongst enacting a strategy and reaping the rewards could provide challenges in administering transfer pricing regulations.

#### 3.2.2.3.3 Assessment of comparability

Assessment of comparability forms an integral part of any transfer pricing analysis. International practice promulgate the functional analysis (OECD, 1995: G-5): *“An analysis of the functions performed (taking into account assets used and risks assumed) by associated enterprises in controlled transactions and by unconnected parties in comparable uncontrolled transactions”* as a comparability assessment, on which the determination of the arm's length consideration will be based. South Africa prescribes to the same principle (South Africa, 1999:11): *“Functional analysis serves, therefore, to identify the economically significant activities (functions performed, assets employed and risks assumed) that are undertaken by the member of an MNE, and for which it should expect to be rewarded.”* This identifies the nature and characteristics of the connected party dealings that requires to be priced.

The undertaking of a functional analysis and its results are dealt with in Chapter 5 by virtue of the case study. The challenge still remains, once a functional analysis has been undertaken and potential comparables have been identified, to make adjustments to enhance comparability within this context are required in terms of the OECD Guidelines (1995:I-7)

#### 3.2.2.3.4 Comparability adjustments

In South Africa, comparability adjustments as set out in PN 7 stresses that the two transactions being compared will only be truly comparable if there are no differences amongst the two transactions that will have a material effect on the price, or if reasonably, accurate adjustments can be made to eliminate the effect of differences (South Africa, 1999:15). No guidance is provided what “differences” are referred to or what is “material effect on price” insofar as comparability adjustments with accompanying uncertainty. This lack of guidance increases ambiguity and subjectivity this research aims to minimise.

The OECD Guidelines (1995:I-17) mentions currency risk, whilst South Africa, highlights in PN 7 examples of where adjustments may be necessary when comparable products or services are transferred amongst independent parties or the MNE and an independent enterprise (South Africa: 1999:15):

- terms of a sale (transactions may differ such as credit terms)
- volumes transferred may differ significantly (bulk)
- differences in contractual terms, for example, sell free on board (“FOB”) to a connected person and at cost insurance and freight (“CIF”) to an independent party.
- Certain adjustments could be very difficult to effect, such as differences in-
  - the quality of the products
  - geographic markets
  - market levels
  - amount and type of intangible property involved

Although it is acknowledged that, the OECD Guidelines as well as South Africa’s Practice Note provides guidance, the lack of specific examples give rise to uncertainty. This level of uncertainty increases if the lack of information on independent transactions in South Africa is taken into account.

Due to the lack of South African information, reliance is placed on information obtained from international databases, with limited adjustment to comparables. This culmination of vague guidelines and lack of information increases the demand for a model, which could address comparable adjustments.

#### ***3.2.2.4 Transfer pricing methodologies***

Most of the methods that are widely used in transfer pricing focus on the functions performed, assets used and the risk assumed rather than on the goods or services being transferred. Section 31 of the Act does not impose a hierarchy of the prescribed and recognised transfer pricing methods. In essence, a hierarchy exists insofar as certain methods’ results are more reliable. PN 7 (South Africa, 1999:14) provides guidance with regard to the accepted transfer pricing methods, broadly

referred to as the traditional transactional methods and the transactional profit methods (refer to section 3.2.2.4 for a comprehensive discussion).

### **3.3 Transfer pricing methods**

The international standard with regards to transfer pricing is the arm's length principle with all treaties based on the OECD Model Tax Convention supporting it (OECD 2000:30). In order to apply the arm's length principle, the OECD in conjunction with tax authorities developed several methodologies which provide a framework of pragmatic approaches in connected party dealings (Miesel *et al.*, 2003:1) aimed at addressing the following:

- Tax defence: The methods lay down the rules under which transfer pricing discrepancies to be resolved.
- Tax compliance: The methods satisfy documentation requirements and substantiation of connected party dealings to satisfy revenue authorities' requirements.
- Business policy: Upon investigation of the methodologies applied in any of the abovementioned two options, it remains important for management to understand the responsiveness of applying the methodologies to formulate and substantiate their arm's length dealings by virtue of their transfer pricing policy.

The arm's length principle (OECD, 1995:I-7, South Africa, 1995:8 and OECD, 2000:30) is central to the accepted OECD transfer pricing methodologies with the basis of it being;

- Recognition that the arm's length principle is based on a sound economic principle that competitive market is the best instrument to allocate resources and rewards risk.
- Positioning connected party dealings and the MNE on an equal, comparable footing with that of an independent enterprise for tax purposes, consequently eliminating any economic distortions that differential tax treatment could create.
- Transfer pricing methodologies has been applied successfully in the past in various tax jurisdictions.

Difficulties in applying the arm's length principle exist. However, cognisance of the fact that the separate entity approach is followed in applying the arm's length principle is divergent with reality. MNE's operate, as integrated enterprises with the benefits derived from such integration

such as economies of scale and scope in various spheres of the operations are not being considered.

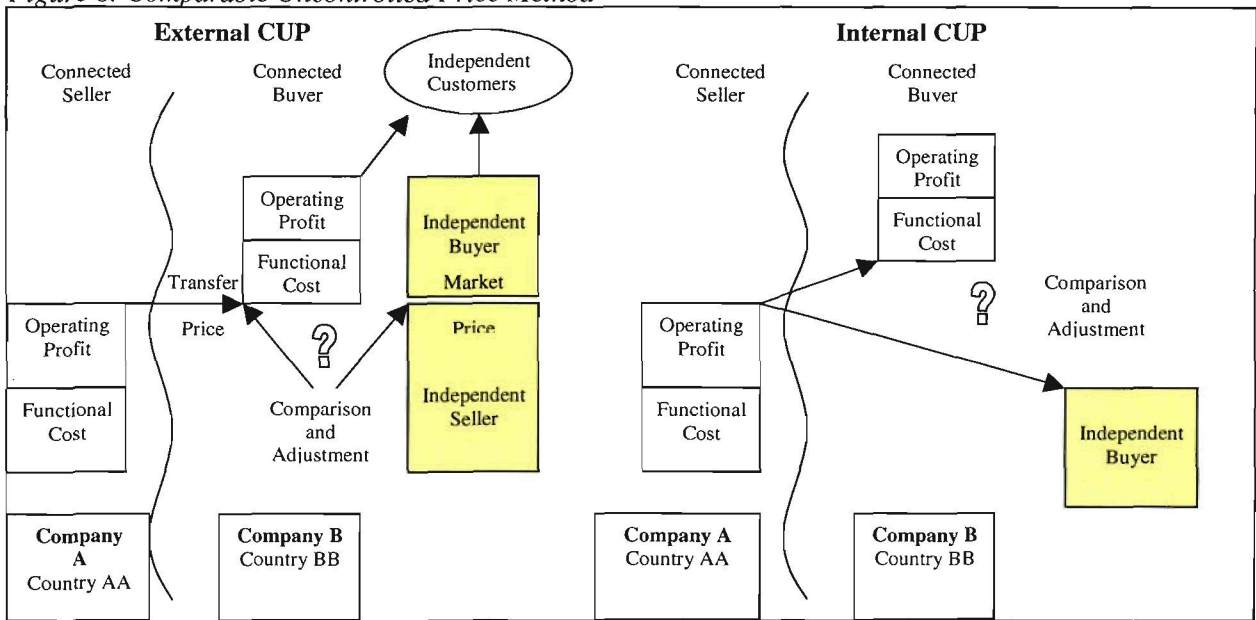
PN 7 (South Africa, 1999:13) and the OECD Guidelines (1995:II-2) reiterates that the most direct to establish arm's length dealings amongst connected parties is by virtue of comparing prices charged in controlled transactions to that being charged in uncontrolled transactions. However, in practice it is seldom possible, primarily due to information constraints. PN 7 (South Africa, 1999:13) and the OECD Guidelines (1995:II-2) acknowledges information constraints and promulgate the use of more indirect methods of comparison whereby gross margins are used to determine the arm's length consideration, generally referred to as the traditional transactional methods.

### **3.3.1 Traditional transactional methods**

#### ***3.3.1.1 Comparable uncontrolled price (CUP)***

PN 7 (South Africa, 1999:15) and the OECD Guidelines (1995:II-2) stipulates that in applying the CUP method, a "direct comparison is drawn amongst the price charged for a specific product, goods or service in a controlled transaction and the price charged for a closely comparable product, goods or service in an uncontrolled transaction, in comparable circumstances." The focus is on the product, goods or service being transferred and the price charged therefore without ignoring the relevant business functions and economic circumstances that could influence the price being charged.

Figure 8: Comparable Uncontrolled Price Method



(Source: Miesel et al., 2002:7 and own compilation)

In Figure 8, an external CUP, the arm's length price is determined by direct comparison of the price charged amongst connected parties and the market price for similar goods or services, charged amongst an independent buyer and seller (Miesel et al., 2002:6). In the second example of Figure 8, the price charged by a connected party to another connected party in relation to the price charged to an unrelated party, an internal CUP.

PN 7 (South Africa, 1999:15) and the OECD (OECD, 1995: II-4,II-5) further stipulates that in the event that differences exists between the two prices, that these differences may indicate the existence of non-arm's length conditions. In such circumstances, the price in the controlled transaction may need to be substituted for the price in the uncontrolled transaction.

### 3.3.1.1.1 CUP Application

As illustrated, in Figure 8, the CUP method is a direct and reliable way to apply the arm's length principle where it is possible to identify comparable uncontrolled transactions. The comparable uncontrolled price is determined by comparing similar products, goods or services transferred under similar circumstances.

Comparability amongst the two transactions hinges on the premise that insofar as the two transactions are being compared if none of the differences amongst the two transactions have a

material effect on the price, or alternatively, if reasonably accurate adjustments can be made to eliminate the effect of differences that materially influences the price (OECD, 1995:II-3). Transactional comparability is not guaranteed by virtue of the product, goods or service being transferred being comparable. Business functions and the economic circumstances under which the transfer of products, goods and services took place must be taken into consideration (South Africa, 1999:15).

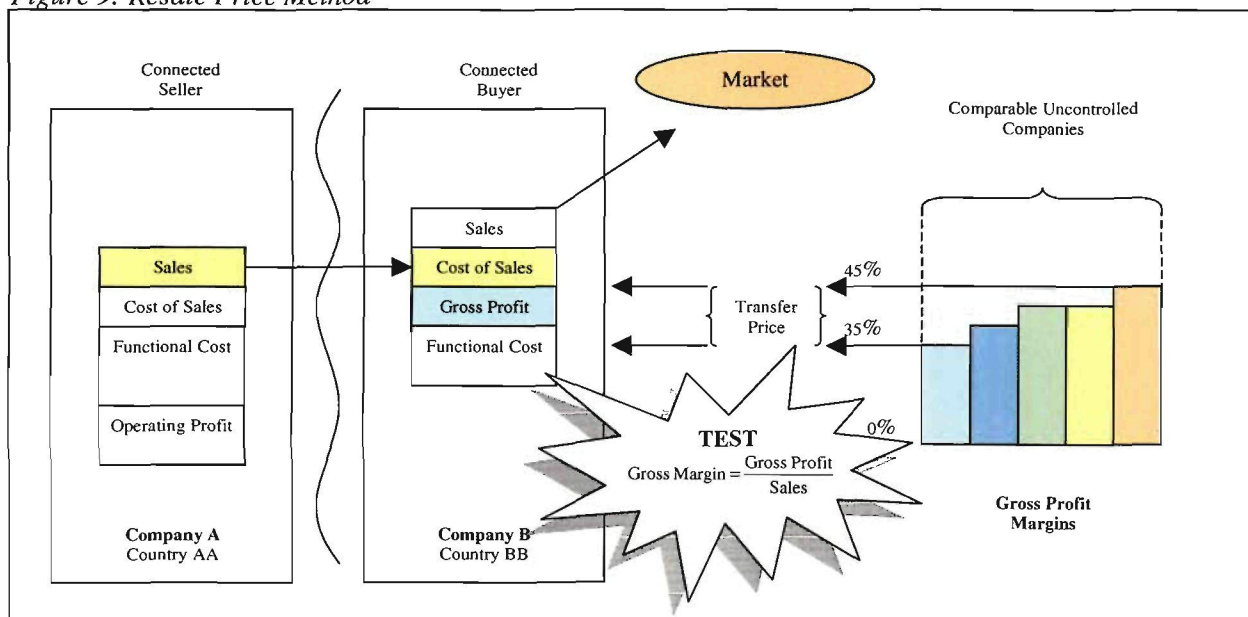
PN 7 (South Africa, 1999:15-16) list examples of where adjustments might be required when comparable products, goods or services are transferred amongst connected parties and independent parties. PN 7 recognises that to adjust for differences in product quality, geographic location of markets and intangible property involved in the transactions could be very difficult.

In practice, it proved to be very difficult to find a transaction amongst independent parties, which is comparable to a controlled transaction, without differences which have a material effect on price or for which accurate adjustments could be made to eliminate the effect of it on the price. In the empirical part of the research, it is apparent that for the cases under investigation, no CUP existed.

### ***3.3.1.2 Resale price method***

The resale price method is based on the price at which a product, which has been purchased from a connected party, is resold to an independent party (South Africa, 1999:14, OECD, 1995:II-5). The resale price is reduced by an appropriate arm's length gross margin to cover the reseller's selling and other operating costs, and to provide an appropriate profit, which is based on the functions performed, assets used and risks assumed by the reseller. The gross margin earned by the connected party reseller is compared to independent resellers, usually referred to as distributors, which perform similar functions to the connected reseller as illustrated in Figure 9.

Figure 9: Resale Price Method



Company A in country AA sells products to Company B in country BB which it sells to the market and independent buyers. The gross margin Company B realises from sales to independent parties is compared to the margins comparable companies realise. In the event that the margin falls outside the range determined by analysing comparable gross margins (as illustrated as a bar chart in Figure 9), an adjustment to the sale price from the connected party, Company A will be made to ensure that Company B's gross margin falls within the range of gross margins determined by the comparability analysis (Miesel *et al.*, 2002:9).

The resale price method, as illustrated in Figure 9, is based on the assumption that independent competitors, in this specific case, distributors, result in similar gross margins being realised on sales if they perform the same functions. In effect, the resale price margin establishes the price a connected buyer should pay to earn comparable gross margins to that of independent distributors performing similar functions.

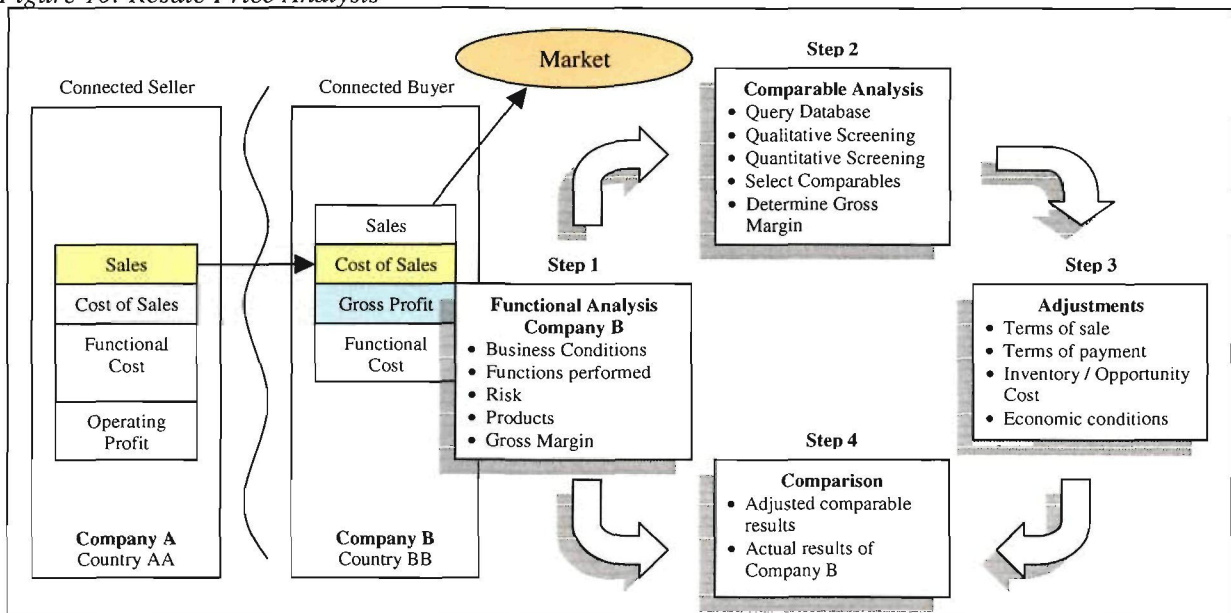
Adjustments under the resale price method are made for primarily differences in economic circumstances and the conditions of sale. Functional adjustments are critical in the application of the resale price method (refer to section 4.3.3 where working capital adjustments is discussed). The method requires comparability to the functions performed, assets used and risk assumed. Comparability adjustments might include adjustments for purchase or sales volume, payment

terms, contractual considerations, customs, insurance, warranty, testing marketing and advertising as well as any other sales and purchase terms.

### 3.3.1.2.1 The Resale Price Method Application

PN 7 states that the resale price margin of the reseller (Company B, in Country BB) in the controlled transaction is determined by reference to the resale price margin that the entity obtains on items purchased and sold in comparable uncontrolled transactions as illustrated in Figure 10 (South Africa, 1999:16). Functional comparability is of critical importance and it is important that the functions performed by the independent companies are highly comparable to the functions performed by connected party, in the example, Company B, selling to the market. There should be no differences amongst Company B and the comparable companies, which could materially affect the price.

Figure 10: Resale Price Analysis



Source: Miesel et al., 2002:11 and own compilation)

Fewer adjustments are expected under the resale price method than the CUP method because it is implausible that minor product differences could influence the gross margins. Profit margins for similar functions tend to be similar, as established in the empirical part of the research. The analysis illustrates in Figure 10 the practical application of the resale price method. As illustrated in Figure 10, the resale price method's focus is on the "resale price" to independent parties, in

reality the market price and the gross margin realised from the sale as an arm's length consideration for the functions performed by the reseller (Company B in the example).

Cost efficiency and cost structure (that is measured as operational expenses in the incomes statement) differences will not influence the results as the comparable test is applied at the gross margin level. Cost structures and cost efficiency will have an impact on the net profit margin hence the approach followed exclude net profits in the determination of the arm's length standard. The resale price method is neither most appropriate (South Africa, 1999:17) where the reseller, (Company B), does not add substantially to the value of the product nor does it owns valuable marketing intangibles, which by definition will attract substantial profits.

### *Distribution structures*

Alternative structures exists under which connected parties structure their distribution function to which the resale price method can be applied. The approach followed by MNE's is to limit the risk of the distributors evidenced by the variance in gross margins obtained by the various forms of distributors with the variance attributable to functional differences as tabled in Table 7.

*Table 7: Distribution structures*

<b>Agency Distributor</b>	<b>Pure Distributor</b>	<b>Diversified Distributor</b>
Does not take title to goods	Takes title to goods	Functions similar to pure distributor
Has no inventory, credit or foreign exchange risk	Bears inventory, credit and foreign exchange risk	Might own intangibles associated with the products
Has no marketing responsibilities	Performs some marketing activities	Might undertake extensive marketing research
Does not perform warehousing activities	Might perform warehousing activities	
Does not posses intangibles	Does not posses significant intangibles	

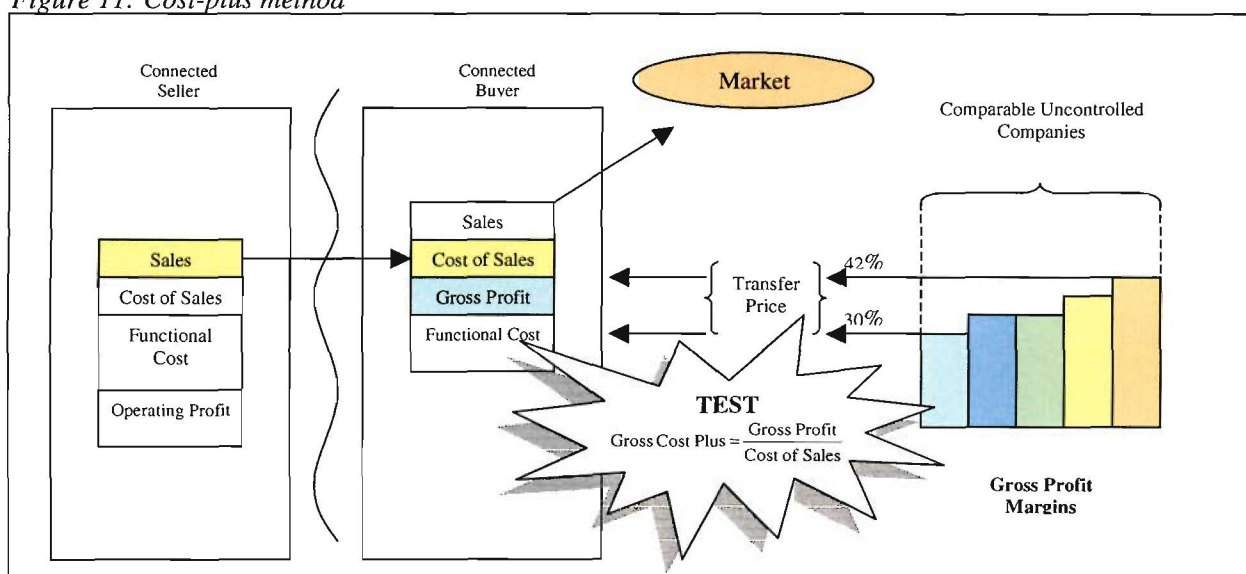
*(Source: own compilation)*

With in the context of Double Taxation Agreements (DTA), the de-risked distributor (sometimes referred to as the risk stripped distributor) such as the agency distributor (in the first column of Table 7) needs special attention because it could give rise to a permanent establishment in accordance with Article 5 (OECD, 2000:25). Vietnam, Ukraine and Thailand, for example, reserve the right to include a warehouse in the definition of paragraph 2 to constitute a permanent establishment (OECD, 2000:282). Russia, Thailand, Ukraine and Vietnam reserve the right to treat an enterprise as having a permanent establishment if a person acting on behalf of the enterprise habitually maintains a stock of goods or merchandise from which the person regularly delivers goods or merchandise on behalf of the enterprise.

### 3.3.1.3 Cost-plus method

The cost-plus method requires estimation of an arm's length consideration, by adding an appropriate mark-up to the costs incurred by the supplier of goods or services in a controlled transaction (South Africa, 1999: 17) and (OECD, 1995: II-11). This mark-up should provide for an appropriate profit to the supplier, in the light of the functions performed, assets used and risks assumed. In the previous discussion of the resale price method, the application is primarily limited to distributors. The cost-plus method on the other hand, is primarily applied to the other side of the transaction, the manufacturing function and service activities as illustrated in Figure 11.

Figure 11: Cost-plus method



(Source: Miesel et al., 2002:10, 14 and own compilation)

Under the cost-plus method, the profit derived from either providing a service by Company A to Company B or Company B buying materials for manufacture from Company A, are evaluated by means of the gross cost plus profit level indicator (refer to section 3.3.2.1.1 where the profit level indicators are discussed and the formulas for their calculation is provided).

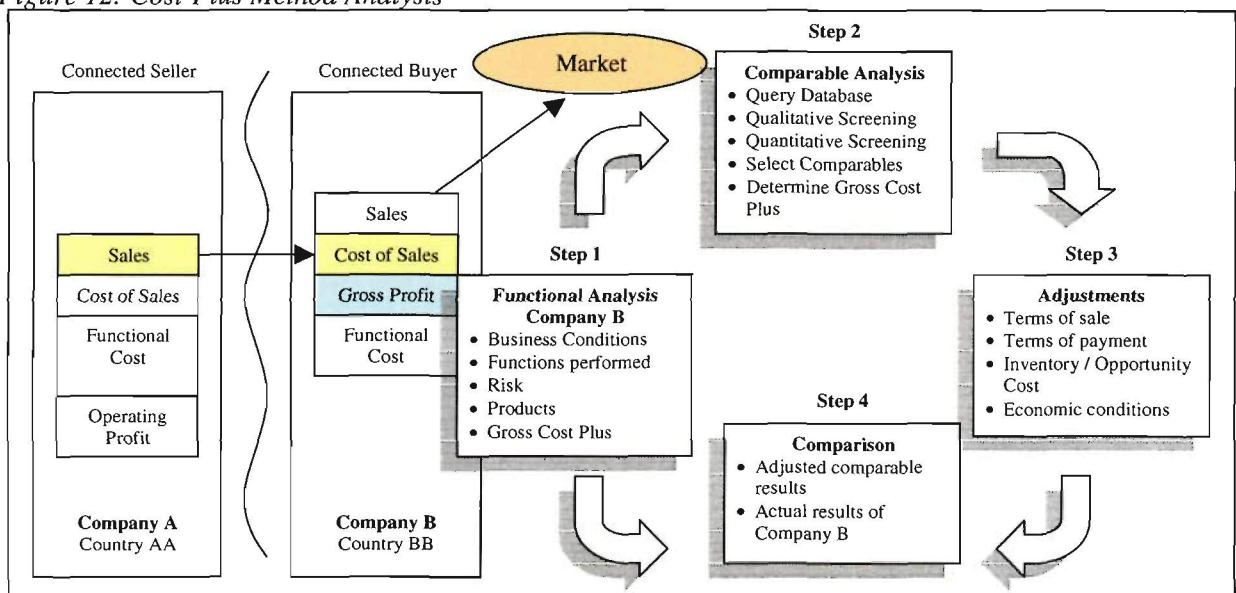
The underlying assumption of this method is that the competition amongst a large number of manufacturers or service providers will lead to similar prices and profit margins. It is apparent that the comparability analysis associated with the cost plus method is critical, as with the resale plus method.

### 3.3.1.3.1 A Cost-plus method application

PN 7 (South Africa, 1999:17) provides guidelines insofar as to the application of the methodology and indicates that it is best suited when services are provided, semi-finished goods are sold amongst connected parties and connected parties have concluded joint facility agreements or long-term buy-and-supply arrangements. The mark-up determined by the cost-plus should ideally be determined with reference to the mark-up earned by the same supplier in uncontrolled transactions. If this is not possible, the mark-up should be determined by using the mark-up earned in comparable transactions by an independent supplier performing comparable functions, bearing similar risks and employing similar assets to those of the MNE.

An uncontrolled transaction is comparable to a controlled transaction for purposes of the cost-plus method (Figure 12) if one of two conditions is met. Firstly, if none of the differences amongst the transactions being compared or amongst the enterprises undertaking those transactions materially affect the cost-plus mark-up in the open market. Secondly, when reasonably accurate adjustments can be made to eliminate the material effects of such differences (South Africa, 1999:17-18).

Figure 12: Cost-Plus Method Analysis



Source: Miesel et al., 2002:15 and own compilation)

The example in Figure 12, illustrates the upstream manufacturer and seller, Company A in Country AA, which transfer price to the buyer, Company B in Country BB, in accordance with the

gross margin Company B, realises on its connected purchases from Company A. The margin is measured as gross cost plus which is the ratio of gross profit to the cost of sales.

An implicit assumption in the cost-plus method's application is that the *competition in a large number of manufacturing concerns will lead to relatively similar prices and profits*. In applying the cost-plus method, as is the case with the resale price method, a comparability analysis, is important (Miesel *et al.*, 2002:12). The cost-plus method requires comparables insofar as the functions performed, assets used and risk assumed similar to that of the controlled party, (in the example, Company B). Adjustments to enhance comparability can be made for terms of sale, terms of purchase, inventory holding levels and economic conditions.

Unlike with the resale price method, the cost structure under the cost-plus method plays an important role. The arm's length consideration, as the cost-plus factor being added to the cost base is self-explanatory insofar as cost measurement and recognition. Miesel *et al.*, (2002:12) and the OECD (1995:II-14) stress the point that adjustment for accountancy treatment might be considered when the manufacturing cost definitions are inclusive of selling, general and administrative expenses and research and development cost. Miesel *et al.*, (2002:13) further this view by promulgating that in industries where volume and capacity utilisation are volatile, cost-plus mark-up based on direct or variable cost might represent the underlying pricing mechanism better than cost-plus mark-up based on total cost of sale which include indirect manufacturing overheads.

### ***Manufacturing structures***

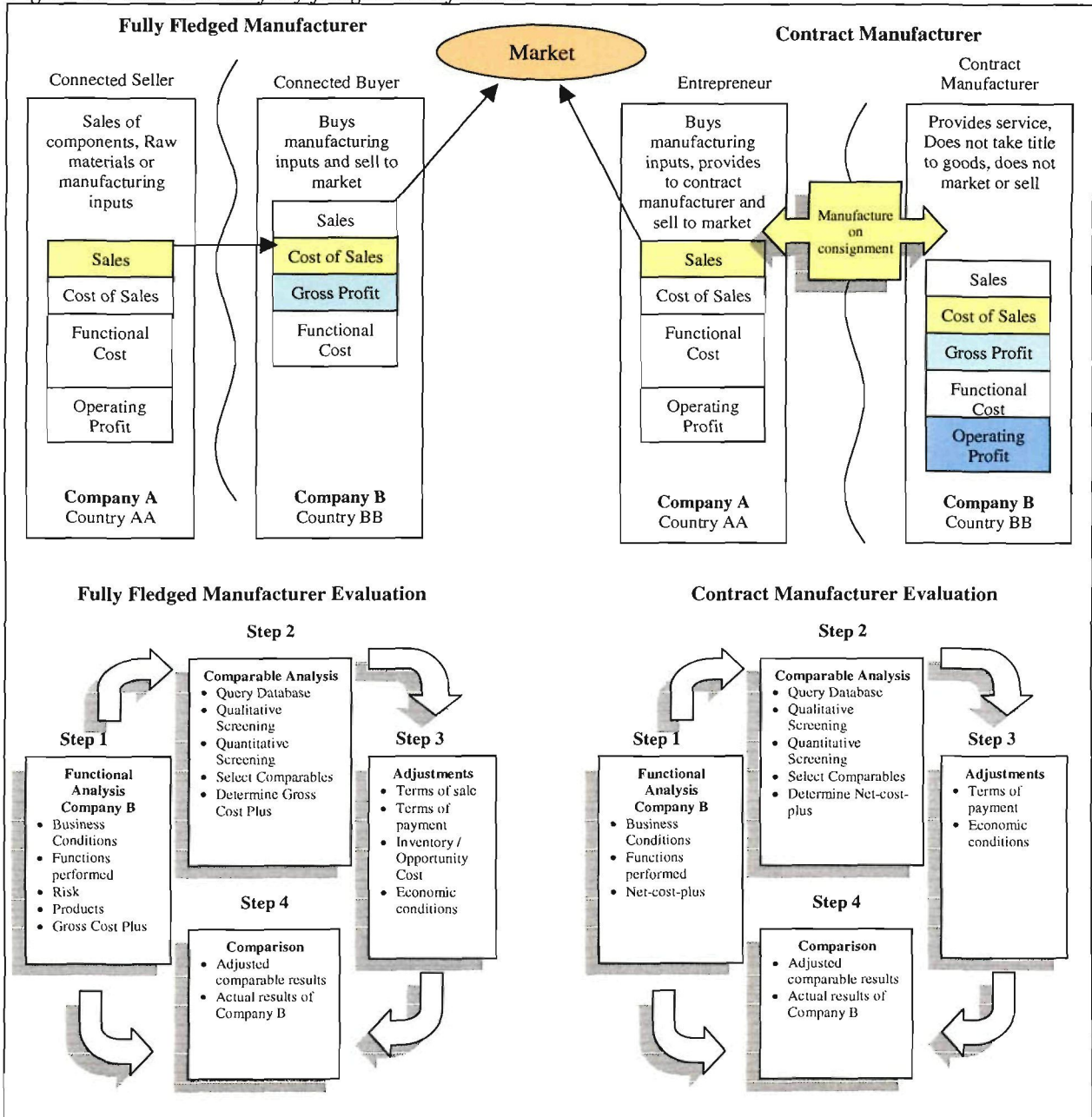
In the research, the manufacturing function and the reward, which must be in accordance with the arm's length principle, are investigated. Generally, two types of manufacturing structures can be found with substantial differences in functions performed, assets used and risk assumed and they are referred to as contract manufacturers and fully-fledged manufacturers.

### **Contract manufacturing**

Contract manufacturing involves a company "entrepreneur", Company A in Figure 13, hiring a provider of manufacturing services "the contract manufacturer" Company B, to manufacture the products that the entrepreneur (Company A) sells to customers. The entrepreneur (Company A) does not hire its own production employees nor does it lease its own plant and equipment to manufacture its products. The contract manufacturer (Company B) hires the necessary production

workforce and acquires the necessary plant and equipment for the manufacturing process. The contract manufacturing arrangement refers to the contractual relationship amongst the entrepreneur and the contract manufacturer and set forth the terms of the entrepreneur involvement in the manufacturing process, the assignment of the various risks associated with the cost of manufacturing and the compensation paid by the entrepreneur to the contract manufacturer.

Figure 13: Contract and fully-fledged manufacturer



(Source: Miesel et al., (2002:16) and own compilation)

### Contract manufacturer

A contract manufacturer (Company B) is in essence a service provider (see Figure 13) without entrepreneurial risk with the entrepreneur (Company A) bearing the *financial risk* associated with raw material; work in process and finished goods inventories and the *market risk* associated with competition and customer acceptance of the product. This view is based on the fact that the entrepreneur (Company A) and not the contract manufacturer (Company B) bears these risk because the entrepreneur owns or has licensed the right to use the proprietary intangibles with respect to the product.

The entrepreneur typically bears all the risk of owning inventories and has primary control over the time and quantity of production, complete control over the design, specifications and quality of products to be produced. Furthermore, the entrepreneur has responsibilities concerning the marketing of products and the actual negotiation and consummation of the sale of the products to the ultimate customer. It is important to note that the contract manufacturer is merely a service provider that earns a service fee and bears no direct financial or market risk with respect to the products it produces with the major characteristics being tables in Table 8.

Table 8: Manufacturing structure

Contract manufacturer characteristics	Fully fledged manufacturers
Essentially a contract manufacturer bears very little or no risk with the following key characteristics	Fully fledged manufacturers differ considerably from a contract manufacturer with a high level of risk performing the following functions:
<ul style="list-style-type: none"> <li>• Performs basic manufacturing functions</li> <li>• Very limited material sourcing</li> <li>• Physical capital might be leased</li> <li>• Exposed to no inventory or bad debt risk</li> <li>• No research and development and usually no marketing functions or intangibles.</li> </ul>	<ul style="list-style-type: none"> <li>• Manufacturing,</li> <li>• Material Sourcing</li> <li>• Carries inventory risk</li> <li>• Undertake research and development and</li> <li>• Often owns valuable intangible assets.</li> </ul>

(Source: own compilation)

### 3.3.2 Transfer pricing transactional profit methods

Transactional profit methods (OECD, 1995:III-1) examine the profit that arises from particular controlled and uncontrolled transactions. The transactional net margin method and the profit split method are recognised by the OECD (1995:III-1) and PN 7 (South Africa, 1999:18).

Transactional profit methods are surrounded by an anomaly. An assumption is made that MNE's are entering into transactions in which profit is conditional. By applying these methods, it is assumed that MNE's determine prices conditional to which profit is made or imposed. Although the profit preposition is not a realistic assumption, the value lies within the premise whether a

transaction was affected by conditions that is divergent to what would have been under comparable conditions amongst independent parties. (OECD, 1995:III-1)

Acceptance of the transactional profits methods relies on their inference with Article 9 of the OECD Model Tax Convention (OECD, 1995:III-2), in particular to the aspect of comparability. The application of the transactional profits methods is based on an approximation of arm's length pricing which requires a comparison of profits derived from a controlled transaction to that of an uncontrolled one.

### ***3.3.2.1 The Transactional Net Margin Method***

PN 7 (South Africa, 1999:19) and the OECD Guidelines (1995:III-1) recognises the Transactional net margin method (TNMM) as an appropriate method to test the arm's length principle. The TNMM examines the net profit margin that an MNE realises from a controlled transaction, relative to an appropriate base, for example cost, sales or assets. This ratio is referred to as a profit level indicator, which is discussed further in section 3.3.2.1.1. The profit level indicator of the tested party is compared to the profit level indicator(s) of comparable independent parties.

PN 7 (South Africa, 1999:18), (which provides guidance insofar as the acceptable methodologies and the application of the said methodologies) draw a continuum amongst the TNMM, the cost-plus (CP) and the resale price (RP) methods. The basis of such a comparison culminates in the use of profit level indicators; the TNMM compares net profit rather than gross profit with cognisance of the critical importance of functional comparability.

In principle, the TNMM measures the level of net margin an MNE realises in a controlled transaction compared to the net margin uncontrolled or unconnected parties realise under similar, comparable conditions (OECD, 1995:III-9). PN 7 recognises that the TNMM is considered less reliable than the traditional transactions methods (South Africa, 1999:18). This constraint can be attributable to the use of net margins compared to gross margins with net margins greatly influenced by operating expenses, which could potentially have little relevance to the functional activities being tested and compared. Efficiencies are cited as another factor that could influence the application of the TNMM (South Africa, 1999:18).

The OECD explores some advantages of the TNMM method, which can be summarised as follows (OECD 1995:III-10, 11):

- Some net margins such as return on assets or operating margin are less affected by transactional differences than what would be if price comparisons were undertaken.
- On a practical level, it is not necessary to determine the functions performed and responsibilities assumed by more than one of the associated enterprises. This is of particular value when the other parties to the transactions are complex with numerous transactions.
- Another practical consideration is that the TNMM is a pragmatic method that is being applied to one of the members of the MNE, usually the least complex party to the transaction.

Factors unrelated to transfer pricing influence net margins, which in turn would influence the TNMM method and raise concerns about reliability. In making use of a one-sided analysis, this is in effect what happens when applying the resale price and cost plus methods. The profitability dynamics insofar as synergy and leverage of the MNE is negated and could possibly attribute to one member of the MNE a level of profit that implicitly leaves other members of the group with questionably low or high profits (OECD, 1995:III-11).

#### 3.3.2.1.1 Profit level indicators

Selection of the most appropriate transfer pricing method is done in conjunction with the profit level indicator that would provide the best result under the circumstances. The ratios that are being used in transfer pricing documentation are the gross margin, gross cost plus mark-up, operating margin, net-cost-plus mark-up, return on average operating assets and return on capital employed (refer to Figure 17 for details pertaining to the profit level indicators used).

The profit level indicator selection is of particular importance in applying the TNMM method where the profit level indicator is indicative of the test being applied in determining the arm's length consideration. In the event that the transaction under consideration is recorded in the cost of sales entry in the income statement of an MNE, it is prudent to make use of a profit level indicator, which uses the cost of sales as a variable.

The CUP method is preferred because it accomplishes a direct product or service comparison and is not prejudiced by specific functions, which are performed by the entities being compared. Alternatively, the resale price and cost plus methods look at valuing the functions performed and

determine an arm's length consideration based on specific profit level indicators. Both the resale price and cost plus methods examines gross margins, hence operating expenses are excluded from the assessment and the impact of relative cost structures is of no consequence (South Africa, 1999:14-15). Table 9 provides a broad summary of the transfer pricing methodologies and the profit level indicators or ratio's that could be used depending on the functions identified.

*Table 9: Transfer pricing methodologies and profit level indicators*

Transfer Pricing Methodologies	Broad Functionality		
	Manufacturer	Distributor	Service provider
1 RP		GM	
2 Cost plus	GCP		GCP
3 TNMM (i)	ROA/ROCE	OM	NCP
(ii)	NCP	ROA/ROCE	
4 Profit split (i)	ROA/ROCE	OM	
(ii)	NCP	ROA/ROCE	

*(Source: own compilation)*

The formulas used to calculate the profit level indicators (refer to section 1.6.13 that deals with financial ratios for more information) are as follows:

- Gross margin (GM) is the ratio of gross profit to turnover

$$GM = \frac{\text{Gross Profit}}{\text{Turnover}} = \frac{\text{Turnover} - \text{Cost of Sales}}{\text{Turnover}}$$

- Operating margin (OM) is the ratio of operating profit to turnover

$$OM = \frac{\text{Operating Profit}}{\text{Turnover}} = \frac{\text{Turnover} - \text{Cost of Sales} - \text{Operating Expenses}}{\text{Turnover}}$$

- Gross cost plus mark-up (GCP) is the ratio of gross margin to cost of sales

$$GCP = \frac{\text{Gross Profit}}{\text{Cost of Sales}} = \frac{\text{Turnover} - \text{Cost of Sales}}{\text{Cost of Sales}}$$

- Net-cost-plus mark-up (NCP) is the ratio of operating profit to total costs

$$NCP = \frac{\text{Operating Profit}}{\text{Cost of Sales} + \text{Operating Expenses}} = \frac{\text{Turnover} - \text{Cost of Sales} - \text{Operating Expenses}}{\text{Cost of Sales} + \text{Operating Expenses}}$$

Net-cost-plus mark-up is mathematically equivalent to  $\frac{OM}{(1-OM)}$

- Return on assets (ROA) is the ratio of operating profit to assets

$$ROA = \frac{\text{Operating Profit}}{\text{Assets}} = \frac{\text{Turnover} - \text{Cost of Sales} - \text{Operating Expenses}}{\text{Assets}} \text{ where}$$

$$\text{Operating assets} = \text{Total assets} - (\text{Cash} + \text{marketable securities})$$

- Return on Capital Employed (ROCE) is the ratio of operating profit to average capital employed  $ROCE = \frac{\text{Operating Profit}}{\text{Average Capital Employed}} = \frac{\text{Turnover} - \text{Cost of Sales} - \text{Operating Expenses}}{\text{Average Capital Employed}}$
- Berry Ratio (not recognised in South Africa but widely used in the United States) is the ratio of gross profit to operating expenses

$$\text{Berry Ratio} = \frac{\text{Gross Profit}}{\text{Operating Expenses}} = \frac{\text{Turnover} - \text{Cost of Sales}}{\text{Operating Expenses}} = \frac{1}{\left(1 - \frac{OM}{GM}\right)}$$

In practice, information constraints make the application of the traditional methods not viable mainly due to the lack of publicly available information on comparable uncontrolled transactions or gross margins. In an attempt to overcome these information constraints, it is often necessary to resort to the transactional profits methods.

### 3.3.2.2 Profit split

PN 7 (South Africa, 1999:19) and the OECD Guidelines (1995:III-3) recognises the profit split as an acceptable method to determine the arm's length consideration. In reality, MNE transactions are very interrelated it might be that they cannot be evaluated on a separate basis. Under such circumstances, unconnected parties might decide to set up a form of partnership and agree to a form of profit split (OECD, 1995:III-3).

It is comprehensible that in the event that the MNE's transactions are interrelated, any attempt at separating the transactions might lead to subjective separated transactions. These transactions might not have been conducted on a one to one basis. Only when all the various transactions are grouped together, the true nature of the transaction emerges. Under these conditions, the profit split would make more sense to apply, than for instance the TNMM.

Miesel *et al.*, (2003:19) shares the observation citing that the lack of an economic sound basis on which the arm's length principle is applied, especially when using transactional methods, compel the use of the profit split methodology. The obvious strength following this approach is that the focus moves from the premise of the transaction towards the bilateral or multilateral aspects of transactions across the value chain, hence attributing profits based on value creation.

The value in following any approach are that it should provide the most appropriate result which can be deemed as a reward consistent with the arm's length principle. Similar to any of the

transfer pricing methodologies, the profit split has limitations, which are (OECD, 1995:III-4; South Africa, 1999: 22):

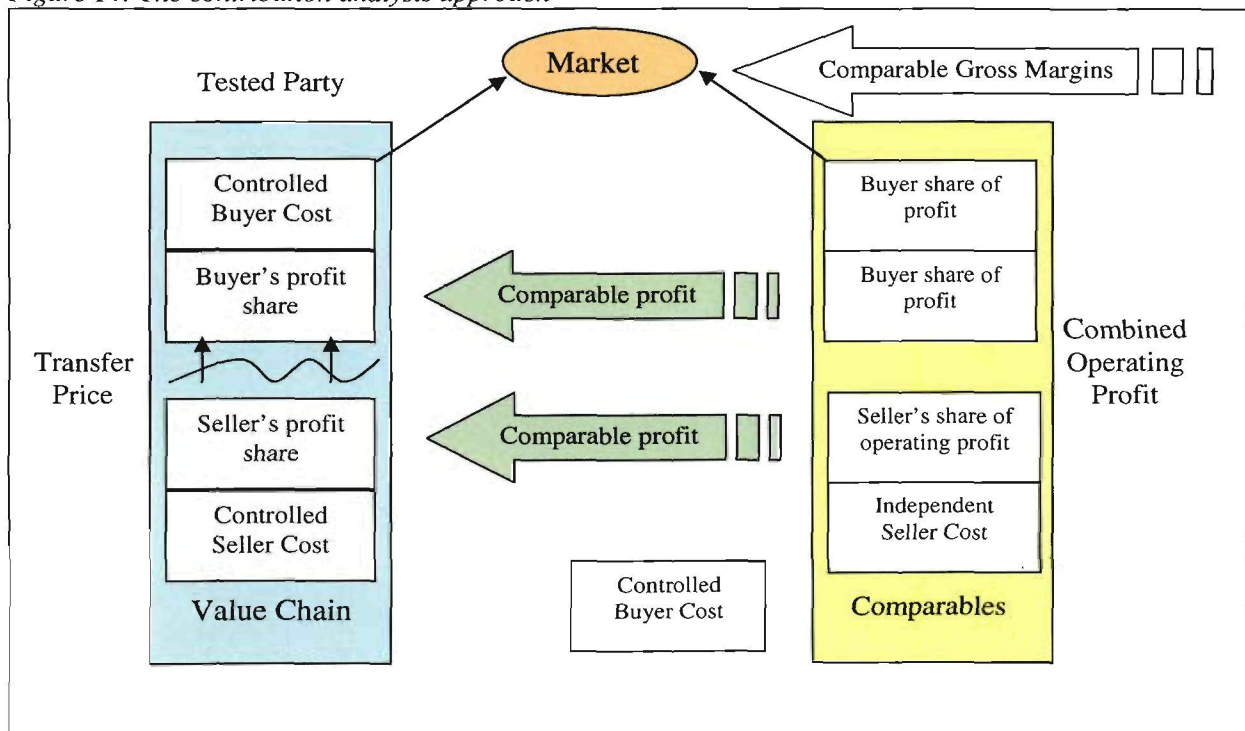
- The profit split is based on external market data that are considered in valuing the contribution of the parties to the transaction. This external market data are often not comparable to the transactions under review that increases subjectivity
- Application of the profit split is difficult insofar as access to information. In order to apply the profit split, information is required on a group wide basis concerning the parties to the transactions. This requires information from various jurisdictions and foreign affiliates that do not readily provide information for foreign tax authorities.

The approach tax administrations follow is usually informed by the OECD Guidelines. In general, the approach followed in South Africa according to PN 7 (South Africa, 1999:20) and the OECD Guidelines (1995:III-5) is based on two methodological approaches, the first is based on a contribution analysis, as illustrated in Figure 14 and the second is referred to as the residual profit split method. Using a contribution analysis approach, the profit split is based on a comparability study of independent enterprise financial information of an uncontrolled transaction where the combined return is comparable to that of the controlled transaction.

Under both approaches, it is essential to determine the combined profit attributable to the parties to the transaction. PN 7 (South Africa, 1999:21) and the OECD Guidelines (1995:III-5), states that the contribution analysis and the residual profit split are not exhaustive or mutually exclusive. There may be alternative ways to split a profit to achieve a reliable arm's length result (refer to Appendix 7.3 where alternative approaches is proposed for further research).

The next step in the analysis according to Figure 14 focuses on profit allocation. When the contribution analysis is used, the combined operating profit (profit before interest and tax) is divided amongst the parties based on the relative contribution of each party to that combined gross profit. In making use of the residual profit split, the parties to the transaction are assigned a portion of profit according to the basic functions that it performs. In the event that not all the profit or loss is allocated based on the functional allocation, the residual profit or loss is then allocated amongst the parties based on their relative economic contribution in respect of the amount to be allocated.

Figure 14: The contribution analysis approach



(Source: Miesel et al., 2003:21 and own compilation)

The proposed approaches by the OECD Guidelines and South Africa's Practice Note concerning the profit split highlight the potential subjective nature of the profit split. No conclusive guidance is provided. *Profit and cost allocation result in a level of subjective analysis.* In practice, the profit split method is used for the determination of an arm's length consideration in complex transactions when none of the other accepted methodologies provides a reliable result, a method of last resort.

The circumstances under which the profit split is used, for instance when inseparable transactions render the traditional methods unreliable, give rise to its complexity. Miesel et al., (2003:20) promulgates the use of a capital employed profit level indicator as a basis on which to formulate the profit split methodology.

The motivation behind such an approach is self-explanatory; an implicit comparison of the arm's length price of capital is determined by the capital markets. In following this approach, capital employed forms the basis on which profits are split. Investment markets are competitive and it would ordinarily be expected that over time the operating profit of an integrated MNE to provide a market related return on the capital employed.

Uncertainty exists with respect to profit split. The method is not frequently used; refer to Figure 17 where the profit split is used in 12 per cent of advanced pricing agreements, 7 per cent in tangible goods, 10 per cent in licensing arrangements and one per cent in cost sharing transactions.

### **3.3.3 Alternative methodologies**

The OECD recognised methodologies, which are used to determine the arm's length principle, were discussed in detail. In the United States of America, other methodologies are also accepted in accordance with their specific regulations pertaining to transfer pricing. Inclusion of these methodologies provides a comprehensive synopsis of transfer pricing methodologies.

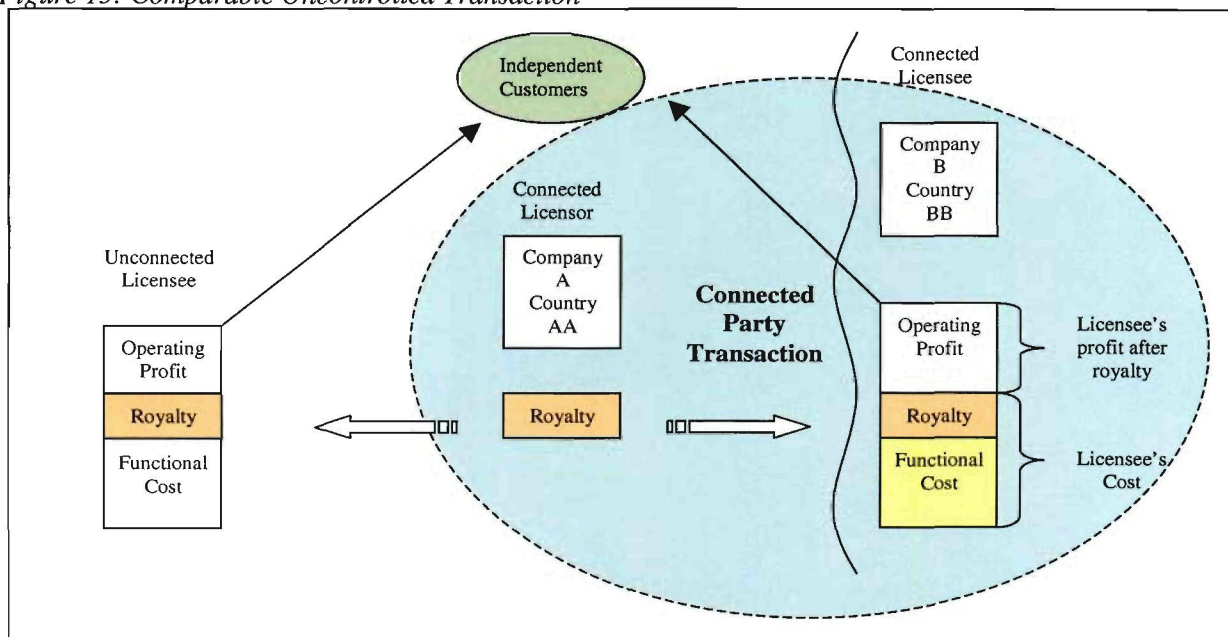
Intangible property evaluation in terms of applying the arm's length principle is excluded from the scope of this research. In order to get a better understanding of the alternative methodologies being used in transfer pricing, methodologies that are geared to evaluate intangible property transfers are included for completeness rather than extending the scope to include intangibles.

#### ***3.3.3.1 Comparable uncontrolled transaction method***

The comparable uncontrolled transaction ("CUT") method, which is being used in the United States of America (USA) by the Internal Revenue Service (IRS), is principally similar to the CUP method with the focus on comparable transactions rather than on price (Miesel *et al.*, 2003:6). The CUT method is illustrated in Figure 15.

Application of the CUT method is aligned towards evaluating intangible property transfer rather than tangible property or services (Halperin and Srinidhi, 1996:62). The CUT method is applied where the transfer of the same or similar, essentially comparable, intangible property amongst connected parties and unconnected parties under similar circumstances (Sherman and McBride, 1995:32).

Figure 15: Comparable Uncontrolled Transaction



Source: Own compilation and Miesel et al., 2003:8)

In applying the CUT method, a comparison is made amongst the connected party transaction and an uncontrolled transaction as illustrated in Figure 15. The valuation of the royalty, under the CUT method is based on the transfer of intangible property from Company A in country AA to Company B in Country BB under comparable circumstances. Reliability in applying the CUT method is severely affected by diminution of product comparability; the method requires intangible property related to similar types of products or processes within the same industry or market (Miesel et al., 2003:8).

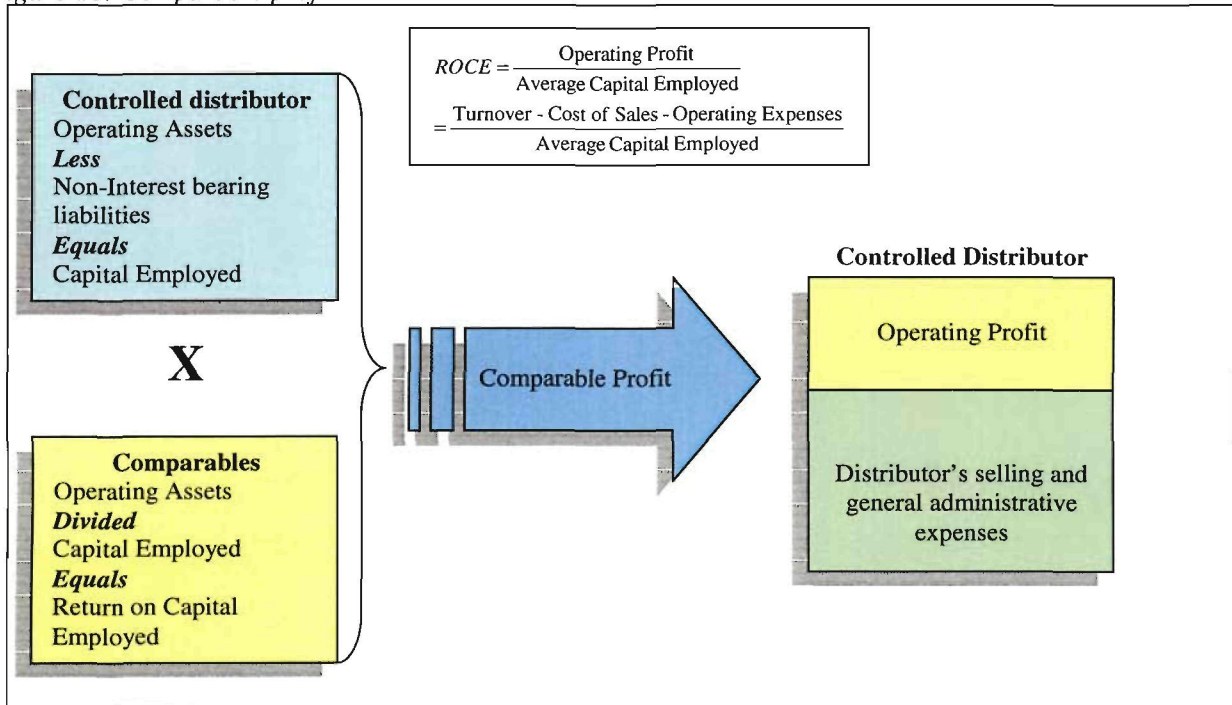
### 3.3.3.2 Comparable profits method

Miesel et al., (2003:13) states that in principle, when the resale price and cost plus methods are correctly applied it should present economically valid and similar results. However, in practice with vertically integrated enterprises it is not uncommon that MNE's achieve profits in excess of the combined profits of unconnected parties performing similar functions.

This situation can be attributed to the fact that in vertically integrated enterprises, pricing margins are eliminated whilst in the unconnected parties it is crucial for survival. In practice, this implies that comparable data is not available in parallel markets for pricing purposes and Miesel et al.,

(2003:13) proposes the use of the comparable profits (see figure Figure 16) method or the profit split method.

Figure 16: Comparable profits method



(Source: Miesel et al., 2003:17 and own compilation)

The OECD Guidelines (OECD, 1995:II-11 and II-13) and PN 7 (1999:17-19) acknowledge the difficulties that could be encountered in applying the resale price and cost plus methods. Miesel et al., (2003:13) proposes the comparable profits method to be used by using profit level indicators such as the return on capital employed. The comparable profits method is used to value routine manufacturing and distribution functions with enterprises using similar resources (Halperin and Srinidhi, 1996: 62).

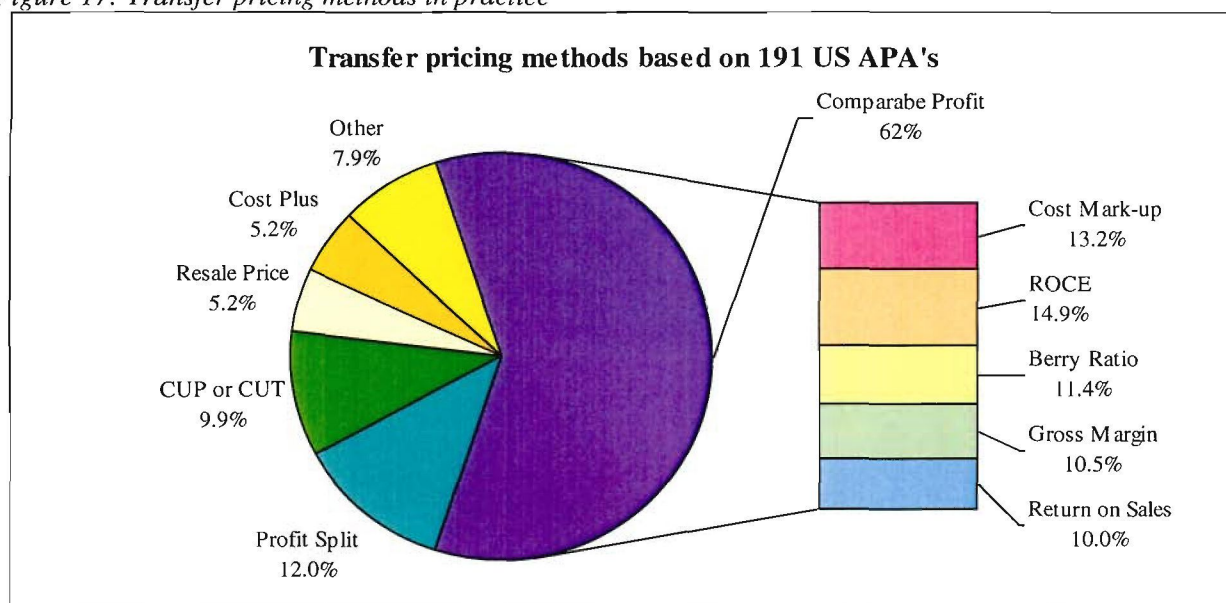
In applying the comparable profits method and using the return on capital employed as the profit level indicator, the basis of comparison is the economic premise that if capital and product markets are in competitive equilibrium, then over time companies with similar risk characteristics will earn similar returns on their capital employed (Miesel et al., 2003:17).

### 3.3.4 Practical test of transfer pricing methods

PN 7 (South Africa 1999:28), the OECD Guidelines (OECD 1995:I-27) and Sherman and McBride (1995:29) acknowledge that the use of multiple methods should result in similar arm's length consideration.

Ernst and Young (2003:17) and Miesel *et al.*, (2003:18) reports on the recognised transfer pricing methods and their respective practical use and application. Miesel *et al.* (2003:18) made use of data from the Inland Revenue Service (United State's equivalent to the South African Receiver of Revenue) pertaining to 191 Advance pricing agreements (APA) to determine methodology use with the results as illustrated in Figure 17.

Figure 17: Transfer pricing methods in practice



(Source: Miesel *et al.*, 2003:18)

Ernst and Young (2003:17) determined from a parent company perspective what methods are used for which transactions and the results are tabled in Table 10.

Table 10: Transfer pricing methods used by parent companies

	Tangible Goods	Inter company Services	Licensing Agreements	Cost Sharing Agreements	Financing
Survey base	417	428	248	197	45
CUP %	35	20	Internal 37 External 15	2	33
Resale Price %	18				
Cost %		16		28	4
Cost Plus %	31	57	1	51	9
Profit Split %	5		10	1	
Profit-based%	7		17	1	
Other %	8	7	23	16	4
Not Stated	1	1	1	4	49

Note: Multiple responses were permitted

(Source: Ernst and Young (2003: 12))

It is apparent from both of these studies, not a single method can be singled out as the most appropriate or being used under virtually all circumstances. Cost based methods are used in the majority of cases involving the pricing of inter company service as well as in cost sharing agreements.

These results confirms the position of the OECD Guidelines (OECD, 1995:I-27) and PN 7 (South Africa, 1999:13) that the most appropriate method in a specific case will depend on the facts and circumstances of the case under consideration and the extent and reliability of data on which to base a comparability analysis. It should always be the intention to select the most appropriate method, the method that produces the highest degree of comparability.

### 3.4 Alternative to arm's length principle

#### 3.4.1 Global formulary apportionment

The OECD Guidelines (1995:G-5) defines global formulary apportionment ("GFA") as "A method to allocate the global profits of an MNE group on a consolidated basis among the associated enterprises in different countries on the basis of a predetermined formula." The global formulary apportionment methodology is founded on global profit allocation on a group-consolidated basis across national tax jurisdictions and consists of the following (OECD 1995:III-21):

- Determination of the member of the MNE to be taxed, i.e. which of the subsidiaries and branches of the MNE makes up the global taxable entity
- Accurate determination of global profits

- Establishing the formula to be used to allocate global profits

The separate entity approach followed by the OECD member countries, which is generally accepted as the international norm, is central to the arm's length principle. Not surprisingly, the OECD does not subscribe to this approach and does not consider the global formulary apportionment as a realistic alternative and their standpoint is based on the following (OECD 1995:III-21–III-24):

- It is difficult to institute a system that both protects against double taxation and ensuring a single taxation. In order to achieve this, extensive international co-ordination and consensus on predetermined formulas and the composition of the MNE under consideration must be reached.
- If countries agree to the principle, putting it into practice would be administratively difficult because each country aim to derive utmost benefit from its international transactions. Developing countries currently does not have the capacity to administer their tax systems as the developed world and they will clearly be disadvantaged under such a system.
- Transition to global formulary apportionment would present political and administrative complexity requiring a high level of international co-operation.
- The arbitrary and subjective nature of formulas might result in distortions with the basis of allocation being open for manipulation.
- Application of the global formulary apportionment under an universal currency have merit, foreign exchange movements will complicate matters in the absence of an evaluation of the facts and circumstances of the specific MNE.
- The design of global formulary apportionment fails to recognise the separate entity approach, geographic and market differences that impacts on profitability.
- Dispense with intra-group transactions, withholding taxes will not be practical in the circumstances to the detriment of the tax systems of the developing economies of the world.

Proponents of formulary apportionment and those against it highlight the reality of transfer pricing. No specific approach or method yields an acceptable result under all circumstances.

### **3.5 Conclusion**

Pricing of cross border transactions seen in relation to globalisation requires considerable consideration and places pressure on national tax authorities and management of MNE's. Transfer pricing is increasing in importance with eighty-six per cent of parent companies and ninety-three per cent of subsidiaries identified transfer pricing as the most important international tax issue on the agenda.

Of all the transfer pricing methods used, not a single method can be singled out as the most appropriate or being used under virtually all circumstances. Cost based methods are used in the majority of cases involving the pricing of inter company service as well as in cost sharing agreements.

Formulary apportionment, as an alternative to the existing methodologies and the arm's length principle is not practical because it would be administratively difficult to execute because each country aim to derive utmost benefit from its international transactions. Developing countries currently does not have the capacity to administer their tax systems as the developed world and they will clearly be disadvantaged under a formulary apportionment system.

Application of the arm's length principle is generally based on a comparison of the conditions in a controlled transaction with the conditions in transactions amongst unconnected parties. In determining the arm's length consideration the intention should always be to select the most appropriate method, the method that produces the highest degree of comparability and provides the most reliable result of the arm's length consideration.

The objective of obtaining the highest degree of comparability and the most reliable result is indicative of subjective interpretation, a situation that does not instil certainty. The best way for the MNE to address the potential risk of transfer pricing adjustments is to ensure that they are conversant with respect to this particular aspect of their international business.

Transfer pricing is not an exact science; hence, uncertainty exists in the application of principles and methodologies. This uncertainty and in particular the hypothesis which forms the basis of the

determination of the arm's length consideration give rise to clarify the ambiguity surrounding transfer pricing, especially comparability. The CATPM, and the theoretical basis on which it based provides an opportunity to limit subjectivity and ambiguity providing more clarity on the arm's length consideration for MNE's and tax authorities.

## Chapter 4     A comparability analysis and transfer pricing adjustments

### 4.1 Introduction

Transfer pricing is based on the principle that transactions amongst connected parties are to be conducted at *arm's length* (refer to section 1.6.1). The problem to be resolved is how an MNE should determine what price would have arisen if transactions amongst its members were subject to market forces (the unconnected party test).

Application of the arm's length principle is based on a comparison of the conditions in a controlled transaction with the conditions in transactions amongst unconnected parties. The OECD Guidelines (OECD, 1995: I-7 – I-28) provides guidance in the application of the arm's length principle in relation to connected party dealing(s) and highlight consideration for comparability analysis, recognition of the actual transactions undertaken, use of the arm's length range, multiple year data, etc.

Once the MNE considered the abovementioned factors in relation to its connected party dealings, similar consideration to unconnected party dealings is required. The solution advanced by the arm's length principle is that a comparable transaction amongst unconnected parties should be used as a benchmark against which to consider the MNE's transfer price. Any difference amongst the two transactions being compared can be identified and adjusted accordingly. *This premise emphasises comparability and hence this research aims to develop and test a transfer pricing model, which recognises comparable transactions, and make an objective estimate based on the arm's length principle.*

Transfer pricing is a *process* by which the arm's length consideration is determined with reference to the comparability prerequisites. This chapter follows the same approach. Prior to the determination of the arm's length consideration, comparability and adjustments to potentially comparable data are investigated in order to enhance comparability objectively.

By virtue of making use of existing approaches in evaluating companies, an approach is followed to utilise these methodologies to determine the arm's length consideration. In order to minimise

subjective analysis and interpretation, a comparability adjustment transfer pricing model (CATPM) is developed and defined. The CATPM recognises factors that influences profitability (on which the arm's length consideration is based) and by virtue of multi regression analysis estimate objectively "what would have been" in accordance with paragraph 1 of Article 9 of the OECD Model Tax Convention.

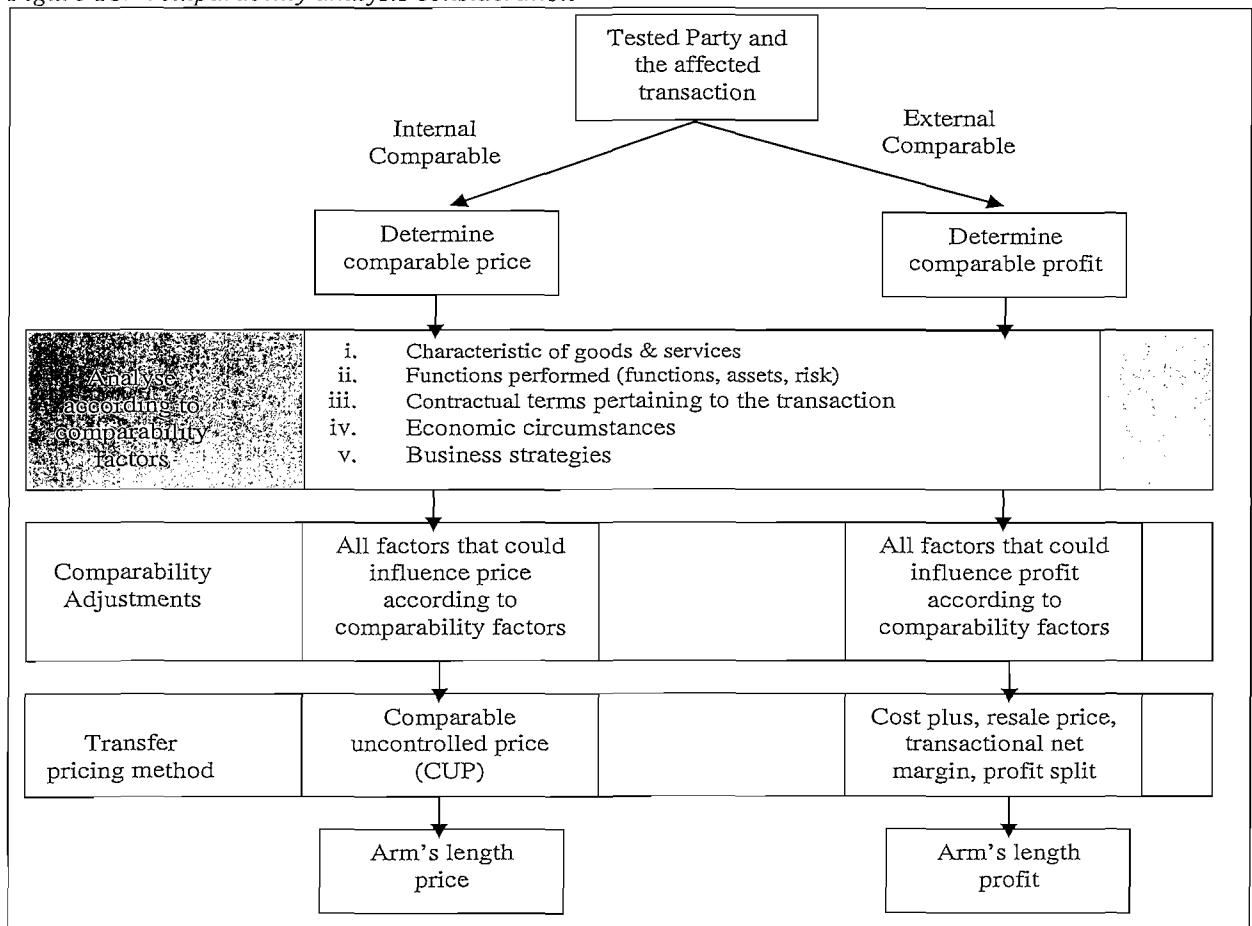
## **4.2 Comparability considerations in transfer pricing**

The concept, which underscores the arm's length principle, is comparability, identified by virtue of the conditions, which are critically aligned to the connected or associated transactions and that amongst unconnected parties. With reference to the conditions that could influence comparability, referred to as comparability factors, (characteristics of goods and services, functionality, terms and conditions of contract, economic circumstances and business strategies), with respect to the connected transaction are to be identified, measured and compared to that of unconnected parties (OECD, 2005 (a):2).

In adherence to the requirements of comparability in order to determine the arm's length consideration, the CUP method (see section 3.3.1.1) is based on a direct comparison (OECD, 1995:II-2) between the affected transaction and an unconnected transaction. Comparable adjustments are made insofar as the comparability factors' influence on the price of the product being transferred (OECD, 1995:II-3) as illustrated in Figure 18. The CUP requires internal comparables on which the arm's length price is based because the price comparison is based on the price charged for the same goods or services provided to an unconnected party and a related party (refer to Figure 18).

The absence of internal comparable information (used in the CUP, refer to section 3.2.2.3.1 for a discussion on internal and external comparables) necessitates the use of external comparable information (in all the other transfer pricing methodologies). With external comparables, the comparability test is not on the price of the goods and/or services being transferred, rather the focus is on the margin or profit derived from the affected transaction as illustrated in Figure 18.

Figure 18: Comparability analysis consideration



(Source: own compilation)

In the determination of the arm's length consideration as illustrated in Figure 18, both on the price (internal comparable used in conjunction with the CUP) or profit margin (external comparable used in conjunction with all the other methods) the comparability factors are considered and the factors that influences the price or margin is adjusted accordingly.

In adjusting internal comparables, consideration is given to the factors that influence the price, predominantly the characteristics of goods and services (OECD, 1995:I-1, I-7, and South Africa, 1999:12). PN 7, (South Africa, 1999:10) provides an indication of the factors that should be considered for tangible goods, intangible property and services that are as follows:

- Tangible property with specific reference to the physical features, quality, reliability, availability and volume of supply of the goods or services under consideration.

- Intangible property with specific reference to form of the transaction, type of intangible property (patent, trade mark etc), duration of protection, degree of protection (exclusivity) and anticipated benefits from use of the intangible property.
- Services with specific reference to nature and the extent of services performed.

The list is not exhaustive, but provides guidance on what factors could influence the transfer price. Any variance of the abovementioned could potentially influence the transfer price (for example, different quality), hence adjustments to reflect direct comparability is required and performed. Information pertaining to the characteristics of goods and services (physical features, quality, reliability and availability) are available and adjustments based on the characteristics of goods and services that influence the transfer price is possible.

When external comparables are used, specific, detailed information on a transactional level (companies does not disclose all the information on a transaction-by-transaction basis) concerning unconnected parties are not available (OECD, 1995:I-17,II-2). In the absence of detailed information on which to base the determination of the arm's length consideration, financial information is used albeit that it requires judgment (South Africa, 1999:9). The OECD Guidelines (1995:I-5) and South Africa's PN 7 (South Africa, 1999:27) acknowledges that transfer pricing is not an exact science. This non-exact nature of transfer pricing is acknowledged through acceptance that the arm's length consideration constitutes not a single price or margin, but a *range of prices and the facts of each case will determine where, within that range, a specific arm's length price will lie*. The "non-exact" nature leads to ambiguity on the part of tax authorities and the affected companies as tax payers. The comparable adjustment transfer pricing model aims to diminish the ambiguity in the use of external comparables in determining the arm's length consideration.

### **4.3 A comparability adjustment transfer pricing model**

Transfer pricing and the determination of the arm's length consideration is based on three fundamentals, i.e. functions performed, assets used and risk assumed (OECD, 1995:I-8, I-9, South Africa, 1999:10, 28). In practice, comparability is influenced by the availability of comparable information.

Reliance is placed on the use of a foreign (Pan-European) database, Amadeus, that contains financial information of unconnected parties required for the determination of the arm's length consideration. The use of data from a foreign database provides challenges insofar as comparability. The comparability adjustment transfer pricing model (CATPM) aims to address comparability through the determination of the arm's length consideration. The use of foreign comparable data in transfer pricing and the use of a bond yield adjustment to affect a country risk premium is starting to gain recognition in the confidential OECD discussion literature (OECD, 2005(b):6)

#### 4.3.1 The CATPM proposition

The primary aim of any transfer pricing model should be the determination of the arm's length consideration. In order to achieve the objective of determining the arm's length consideration the following are to be considered:

- The foundation of transfer pricing is founded on Paragraph 1 of Article 9 of the OECD Model Tax Convention that deals with the arm's length principle as follows: "*[When] conditions are made or imposed amongst... two [associated] enterprises in their commercial or financial relations ... which would have been made amongst independent enterprises (unconnected parties) ...*"(OECD, 1995: I-3).
- A transfer pricing model, according to Paragraph 1 of Article 9 of the OECD Model Tax Convention, proposes to encapsulate "*which would have been made amongst independent enterprises*" (OECD, 1995: I-3 and South Africa, 1999: 8).
- Independent enterprises would therefore be indicative of the arm's length consideration and based on the independent enterprise proposition that requires an understanding of how unrelated companies evaluate potential transactions. Unconnected parties, when evaluating the terms of a potential transaction, will compare the transaction to the other options realistically available to them, and they will only enter into the transaction if they see no alternative that is clearly more attractive (OECD, 1995: I-7)
- On this basis, the CATPM proposes to measure the arm's length consideration ( $\alpha$ ) as the product of the price (P) of goods and services and the quantity (q) of the goods and

services less the cost (C) of providing the goods and services. In mathematical notation, the arm's length price for a product or service (i) can be written as  $\alpha_i = P_i q_i - C_i$  (1)

- The arm's length consideration, either the price or profit margin so determined (see equation 1) are a result of the interaction of:
  - the selling price for goods and services,
  - the quantity supplied or sold,
  - in addition, the cost attributed in providing the service or selling of the goods.

In order to develop and propose a transfer pricing model that determines the arm's length consideration, the variables (price, quantity and cost) that influence the arm's length consideration are considered. Consideration of price, quantity and cost is focussed by analysing unconnected parties, the test in determination of the arm's length consideration.

#### ***4.3.1.1 Price determination***

Transfer prices (see 1.6.32) are the prices charged for goods and services amongst various entities. The arm's length consideration,  $\alpha_i = P_i q_i - C_i$ , that is one of the foundations of transfer pricing (see 1.6.33) encompass a process of price determination. Therefore, a study of price determination is undertaken in a competitive market by unconnected parties. The comparative benchmark (unconnected parties dealing at arm's length) that is considered in transfer pricing is studied.

##### ***4.3.1.1.1 Basic concepts of price determination***

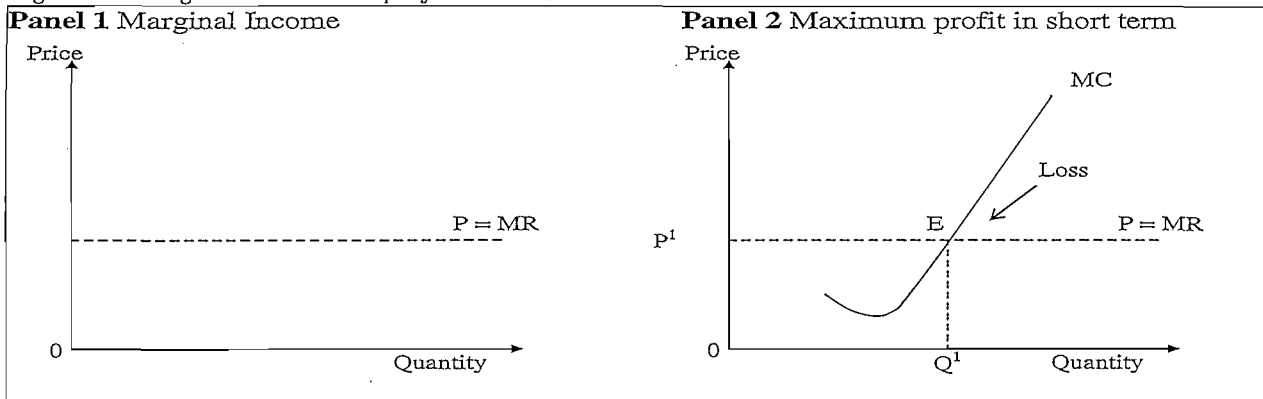
In general, total revenue of a business is equal to the market price of the goods and services it sold multiplied by the quantity sold. The profit or loss derived from the sales of goods and services is the total revenue from the sales less the cost of the goods and services, in essence,  $\alpha_i = P_i q_i - C_i$ , the same proposition put forward for transfer pricing.

An individual enterprise is not concerned with only the total revenue earned in isolation, marginal revenue (income) as well as the average income of goods and services are an important consideration. Marginal revenue is important because marginal revenue is the additional revenue an enterprise earns by selling an additional unit of a product (Smit *et al.*, 2002:221). In a competitive market (individual seller of goods and services has no influence on the price of the goods and services; thus a "price taker") the price of the product is accepted as given. In such a

competitive market, the additional revenue derived from the sale of the goods and service will be equal to the price of the goods and service. Illustrated, the marginal income or revenue (MR) will be a straight line, (constant for all levels of sales) as illustrated in Figure 19 (Panel 1).

The price for goods and services remains constant, irrespective of the quantity sold; hence the marginal income remains constant (the  $P_i q_i$  in the profit formula  $\alpha_i = P_i q_i - C_i$ ). The profit derived from the sale of goods and services is not constant. The cost,  $C_i$  is not constant, (change in accordance with the change in quantity) hence when the quantity sold is less than the cost involved in selling the goods and services, a loss is realised as illustrated in Figure 19 (Panel 2). The cost associated with the goods and services is depicted as marginal cost (MC) in Panel 2. Marginal cost (MC) is the additional cost an enterprise assumes in order to increase output by one additional unit.

Figure 19 Marginal income and profit maximization



(Source: Smit et al., 2002: 221, 222)

Profit from the sale of goods and services are made where the marginal cost (MC) is less than the price (P) or marginal revenue (MR) of the particular goods and service. The optimum or maximum profit for the sale of goods and services can be made at point E in Panel 2. If the quantity sold increases beyond point E, the price is constant and the cost increase, a loss is realised (refer to section 4.3.1.1.2 where losses are further explored).

When the cost is greater than the revenue derived from the sale, the profit, or the arm's length consideration  $\alpha_i$  is negative due to  $C_i$  being greater than  $P_i q_i$ . In a market where the quantity supplied is less than  $Q^1$  (shortage), enterprises will enter the market to share in the profit available in the market. As soon as the quantity supplied reaches point  $Q^1$ , profit is maximized. Any additional supplies will result in losses for each additional supply beyond  $Q^1$ .

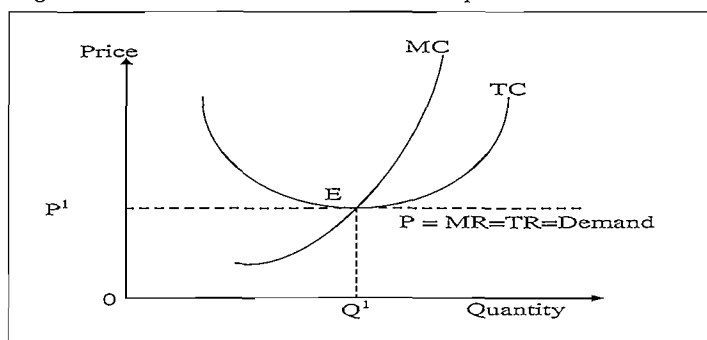
#### 4.3.1.1.2 Price determination under perfect competition

Under perfect competition, the market purely functions according to the principles of supply and demand (Smit *et al.*, 2002:223). Prices of goods and services are set by the market (Mansfield, 1989:239). Smit *et al.*, (2002:223) and Mansfield (1989:238) identified characteristics of perfect competition, the presence thereof are indicative of perfect competition, which are as follows:

- Perfect knowledge of the market by all buyers and sellers
- Numerous market participants (buyers and sellers) in the market with no individual participant (buyer and seller) being able to influence market price
- Products traded in the market is homogeneous (no consumer preference amongst products in the market)
- All products in the market is perfect substitutes for each other
- Absence of market entrance restrictions (government regulations)
- Production factors (natural resources, labour, capital and entrepreneur) are perfectly mobile

Price determination over the *short term* is based on demand for goods and services being *perfectly elastic* (refer to 1.6.12 for a definition of elasticity of demand) due to the lack of preference to a particular good and service (illustrated in Figure 20). Marginal revenue (MR) equals the price of the goods and service due to the enterprise being a “price taker” (accept the market price).

Figure 20 Price determination in a competitive market



(Source: Smit *et al.*, 2002: 224)

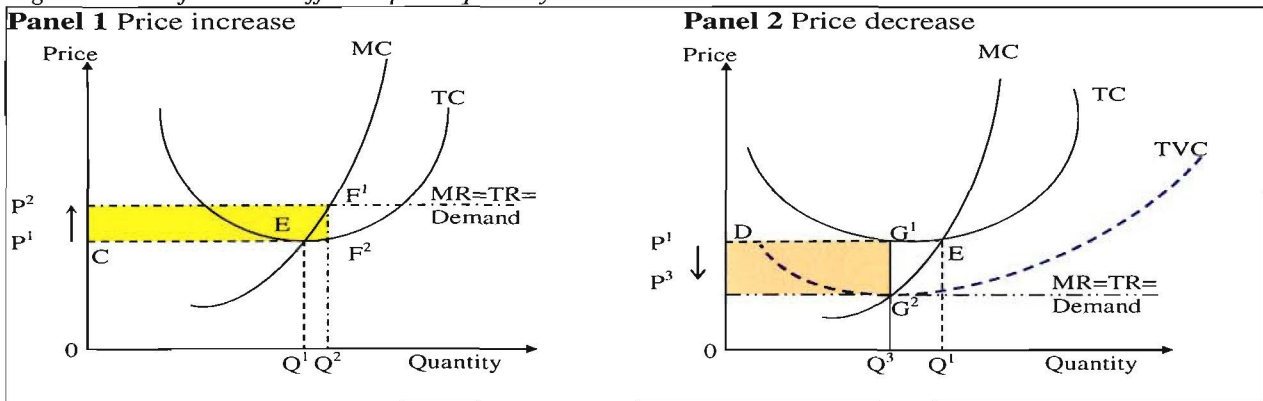
Over the *short term*, the demand curve for the particular good and service represents the price (total revenue (TR) and marginal revenue (MR, see Figure 20 where  $P=MR=TR=$ Demand)). Total revenue (TR) represents the total revenue realised under different quantity combinations. Total

cost (TC) in Figure 20 represents the total cost under different quantity combinations inclusive of fixed and variable cost, it can be viewed as the total cost in relation to different quantities supplied or demanded.

Independent (unconnected) parties *aims* to achieve the utmost benefit from the transaction would prefer to supply to the market at the point where  $MC = MR$ , the point of profit maximisation. Under perfect competition individual enterprises cannot influence the price (individual enterprises are price takers), hence  $MR = TR$  that is equal to the price  $P^1$  at a quantity level of  $Q^1$ , the point where  $MC=MR$  (profit maximisation rule, as illustrated in Figure 20).

Applying the above mentioned principles of price determination under perfect competition to transfer pricing, *the arm's length consideration* will be at point E, a break even point where  $MC=MR$  and  $TC=TR$ . If the same circumstances are used with a change in price from  $P^1$  to  $P^2$  (see panel 1 of Figure 21) and to  $P^3$  (see panel 2 of Figure 21) and quantity from  $Q^1$  to  $Q^2$  (see panel 1 of Figure 21) and to  $Q^3$  (see panel 2 of Figure 21), the following emerged:

Figure 21: Profit under different price quantity combinations



(Source: Smit et al., 2002: 225)

At a higher price,  $P^2$  in Figure 21, (panel 1), the *independent (unconnected) party* will increase its profit because it reached break-even at price level  $P^1$  in panel 1. The “maximised profit” ( $F^1$ ;  $F^2$ ) (see panel 1 of Figure 21) is as a result of total revenue (TR) being bigger than total cost (TC) at a given quantity ( $Q^2$ ),  $(TR \times Q^2) > (TC \times Q^2)$ . Profit maximization is possible over the short term. Over the long term, as soon as the market realizes of the profit potential in a specific market, new entrants will enter the market and their entrance will influence either the quantity (Q) or the price (P) or both. Barriers to entry, as described by Porter (2004:210– 12) can potentially limit the threat of new market entrants through focus strategies being followed by existing market

participants. The importance of strategies in transfer pricing is recognised with business strategies being identified as one of the comparability factors (see 3.2.2.2.2) (OECD, 1995:I-8–I-22, III-12 and V-7).

Another possibility exists, as illustrated in Figure 21, (panel 2.) If the assumption is made that the price decreases to  $P^3$  (can occur as a result of declining demand (business cycle) or a market penetration strategy of new entrant through lowering prices in order to gain market share) profit maximisation is in essence loss minimisation. The *unconnected party strives to achieve the utmost benefit from the transaction* (South Africa 1999: 8) which is under this scenario is *to limit losses* ( $G^1$  to  $G^2$ ) as far as possible. Total cost (TC) is greater than total revenue (TR) at price level ( $P^3$ ) and quantity ( $Q^3$ ),  $(TR \times Q^3) < (TC \times Q^3)$ . The total variable cost (TVC) curve (see Figure 21 panel 2) represents the total variable cost decreases as utilisation increase (unit cost decrease with increased quantity) until optimum capacity is reached, total variable cost increase when quantity increases beyond full capacity). If the price falls below  $P^3$  the unconnected party will not survive even over the short term, it is unable to fund its total variable cost (higher than price  $P^3$  in Figure 21 panel 2) irrespective of quantity sold.

This abovementioned loss-making situation is not founded only in theory, it is recognised in transfer pricing. *Unconnected parties are exposed to business cycles that result in periods of profits and losses.* The business cycle and business strategies' impact on transfer pricing is recognised and is considered in the determination of the arm's length consideration (OECD, 1995:I-21). PN 7 (South Africa, 1999:29) provides examples of losses, which are as follows:

- huge start-up costs
- unfavourable economic conditions
- inefficiencies and
- temporary strategic decisions.

In context of the CATPM formula,  $\alpha_i = P_i q_i - C_i$  the previous scenario of losses (see Figure 21 panel 2) can be explained as when  $C_i$  is greater than the product of  $P_i q_i$ , and then the arm's length consideration will be a loss. Circumstances such as those listed in PN 7, could be explanatory albeit over a relative short period. In conformance to these principles, unconnected parties are not

rejected as potential comparables due to them being regarded as loss-makers (see sections 4.5.1.4 and 5.4.3).

### **4.3.2 Price determination in accordance with transfer pricing principles**

Price determination in a *competitive market* illustrates (see Figure 20 and Figure 21) that *independent parties* strive to maximize profit, which is the point of departure in transfer pricing where each party will strive to get the utmost possible benefit from the transaction (South Africa 1999:8). For the purposes of transfer pricing, the independent party test is required. The test is performed with relation to functions performed; assets used and risk assumed (OECD, 1995:I-8-10). The basic arm's length consideration proposition  $\alpha_i = P_i q_i - C_i$  still holds. The determination of  $P_i$ , price, and  $C_i$  cost, requires further consideration. The price and conversely, the cost are determined by virtue of *defining functions performed, assets used and risk assumed by a connected party and compared to unconnected parties*.

In order to *identify the significant functions* the member of the MNE undertakes, a functional analysis is to be undertaken of the tested party (OECD, 1995:I-9,III-9, South Africa, 1999:28). The purpose of a functional analysis (refer to 1.6.16 to for the definition) is to understand the qualitative nature of the functions, assets and risks, to facilitate a comparison with other enterprises with similar functions, assets and risks (see section 5.3.3). Such a comparison and in particular comparability, is central to the arm's length principle (OECD, 1995:I-7). Another consideration is the adjustments, which are made to potential comparable data (to enhance comparability) on which the arm's length consideration is based

The OECD Guidelines clearly state that in determining comparability (including what adjustments are necessary to establish it) an understanding of how unrelated companies evaluate potential transactions is needed. Unconnected parties, when evaluating the terms of a potential, comparable transaction, will compare the transaction to the other options realistically available to them, and they will only enter into the transaction if they see no alternative that is clearly more attractive (OECD, 1995:I-7).

Unconnected parties take into account economically relevant differences amongst the *options realistically available to them* (such as differences in the level of risk or other comparability factors) when valuing the options available to them. Therefore, when making comparisons in

order to apply the arm's length principle, tax administrations as well as the management of MNE's should also consider these differences (in functions performed, assets used and risk assumed). The differences amongst the situations being compared (unconnected to related party) and adjustments needed to achieve comparability are complex.

Accurate adjustments to comparable data are aimed at reflecting differences amongst the affected transaction and those of unconnected parties, which it is being compared to (South Africa, 1999:9). Working capital adjustments are adjustments which are aimed at recognising the comparable cost basis,  $C_i$  (inventory adjustment), or the comparable price  $P_i$  (accounts receivable and payable) in the proposition of the arm's length consideration  $\alpha_i = P_i q_i - C_i$ . Quantity,  $q_i$  is considered in working capital adjustment as a basis of comparison (accounts payable, receivable or inventory compared to sales) on which the adjustment to sales (price) or cost of sales are made.

### **4.3.3 Working capital adjustments**

The dilemma facing managers of MNE's, advisory firms and tax administrations concerning comparability adjustments is receiving attention at an international level. The OECD recognises working capital adjustments such accounting adjustments (accounts payable), balance sheet asset intensity adjustments (inventory and accounts receivable) and other adjustments without providing specific guidance on what it entails and how it should be undertaken (OECD, 2005(b):3-5). *With South Africa being granted observer status in 2004 at the OECD, the pragmatic approach this research proposes are part of South Africa's commentary on comparability adjustments.*

Unadjusted income statements of comparable companies can lead to inaccurate representations of a comparable's true economic profitability because accounting based operating income can be *distorted by the means through which a company finances its purchases and sales*. Financing of purchases on a cash basis or terms influences the price of purchases or cost in the purchaser's income statement. Cash purchases compared to term purchases have a lower price primarily due to the time value of money (Brigham *et al.*, 1999:236).

The buyer, in such a transaction, on the other hand, by virtue of not paying cash, has access to the goods albeit that it has not been paid for. The purchasing entity can invest the money owed until payment is due and earn a return, usually higher than the price differential (difference amongst cash purchases and term purchasers) and effectively *obtains an opportunity benefit*. Both parties

to the transaction can manage their working capital in terms of receivable and payment terms. In order to reflect these differences in financing activities amongst the tested party and the comparables, accounts receivable and payment adjustment can be performed.

The time value of money has an opportunity cost attached to it. The *opportunity cost impacts on working capital*. Divergence of accounts receivable, inventory holding (both assets) and accounts payable amongst the tested party (see 1.6.9 for a comprehensive definition) and comparables influences working capital requirements over a specific time frame. Therefore, adjustments are performed that recognises differences in prices ( $P_i$ ) and cost ( $C_i$ ) in the proposition of the arm's length consideration  $\alpha_i = P_i q_i - C_i$ .

In the absence of any specific guidelines on the methodology used in performing working capital adjustments and in particular to accounting adjustments, asset intensity (such as inventory) and other adjustments mentioned by the OECD (2005:3-5), working capital comparability adjustments is documented in this research. The adjustments is not characterised as accounting adjustments, it is closer aligned to balance sheet intensity adjustments (OECD, 2005:4), broadly characterised as asset and liability adjustments.

Other adjustments refer to any adjustment not being either an accounting or balance sheet intensity adjustment (OECD, 2005:5). In section 4.3.4 the appropriateness of an interest differential adjustment is considered. *The research, in addition to the comparability adjustment transfer pricing model proposes the use of government bond yields to adjust for country risk and is discussed in detail in section 5.4.5.2.*

### **4.3.3.1 Working capital comparability adjustment**

#### 4.3.3.1.1 Accounts Receivable Adjustment

Since accounting data do not break out the element of sales that can be considered financing income, an estimate of this amount needs to be determined. In order to estimate the difference in financing, a comparison of the accounts receivable to sales ratio amongst the tested party and the comparables is necessary.

The assumption is that companies that extend terms that are more generous will generally have higher accounts receivable to sales ratio than those companies that offer less generous terms. The

difference in the accounts receivable to sales ratios amongst the tested party and any individual comparable will reflect the difference in sales terms offered to their respective purchasers.

If the comparables' receivables are adjusted to affect the same accounts receivable to sales ratio of the tested party, a calculation are performed to indicate what the comparables' receivables would be if they offered the same terms to their purchasers. The opportunity cost is determined by multiplying the difference amongst the comparables' adjusted receivables and the comparables' original receivables by the prime lending rate (comparable arm's length borrowing rate "i" in the formula). An estimate of the additional financing income (an adjustment to the sales price of goods and services in accordance with the prime lending rate), which the comparables would earn is determined as if the same terms as the tested party's is offered.

Increasing or decreasing the comparables' sales (" $S_C$ " in the formula) by this amount will, therefore, result in an *adjusted* sales level that reflects similar financing to that of the tested party (" $TP$ " in the formula). The equation used for the average accounts receivable (" $AAR$ " in the formula) adjustment is:

$$\begin{aligned}
 & \text{Change in Average Accounts Receivable}_{\text{Comparable}} (\Delta AAR_C) \\
 &= \left[ \left( \frac{AAR}{S} \right)^{TP} \times S_C \right] - AAR_C \\
 &= \left[ \left( \frac{AAR}{S} \right)^{TP} - \left( \frac{AAR}{S} \right)^C \right] \times S_C \\
 & \text{Adjusted Sales}_{\text{Comparable}} (Adj S_C) = S_C + \left[ \Delta AAR_C \times \left( \frac{i}{(1+i)} \right) \right] \tag{2}
 \end{aligned}$$

#### 4.3.3.1.2 Inventory Adjustment

The other asset that could require adjustment insofar as its impact on working capital is inventory. In essence, a cost is associated in keeping inventory, firstly in the price of the purchased goods and secondly a lost opportunity to sell it and realise a profit on its sale. The longer inventory is kept, the smaller the profit on the sale of the goods due to the increase in the cost of inventory holding. In contrast to the cost of inventory increasing over time, the selling price remains stable (does not increase at the prime interest rate on a daily basis) that results in a profit squeeze.

In order to estimate the difference in the opportunity costs of holding different levels of inventory, a comparison of the inventory intensity (ratio of inventory to sales) of the tested party and the comparables are conducted (Brigham *et al.*, 1999:87). This comparison is measured as the ratio of inventory to sales (Libby *et al.*, 1998:710). By applying the inventory to sales ratio of the tested party to the comparables' sales, an adjusted inventory level can be calculated for the comparables that reflects the tested party's inventory intensity. The next step in the inventory adjustment involves multiplying the change in the comparables' inventory (adjusted inventory less unadjusted inventory) by the prime lending rate. This allows the calculation of an estimated difference in opportunity costs due to holding different levels of inventory over the period under consideration.

In order to make the comparables' income statement data reflect this estimated difference in opportunity costs, the estimated difference is subtracted from the comparables' operating expenses. In the case where the tested party is holding higher inventory levels, the comparables' adjusted inventory will be higher, the opportunity cost estimate will be positive, *operating expenses will be reduced*, and the comparables' *operating income will be increased* to reflect the comparables' cost savings from holding fewer inventories. In the case where the tested party is holding lower inventory levels, the comparables' adjusted inventory will be lower, the opportunity cost estimates will be negative, *operating expenses will be increased*, and the comparables' *operating income will be decreased* to reflect their higher opportunity costs. The equation used for the inventory adjustment is:

$$\begin{aligned}
 & \text{Change in Average Inventory}_{\text{Comparable}} (\Delta AI_C) \\
 &= \left[ \left( \frac{AI}{S} \right)^{TP} \times S_C \right] - AI_C \\
 &= \left[ \left( \frac{AI}{S} \right)^{TP} - \left( \frac{AI}{S} \right)^C \right] \times S_C \\
 & \text{Adjusted Cost of Sales}_{\text{Comparable}} (Adj COS_C) = COS_C - (\Delta AI_C \times i)
 \end{aligned} \tag{3}$$

As with accounts receivable, which are an asset, opportunity cost equally applies to accounts payable, a liability. The adjustment would affect the sales of the comparables; it would increase to compensate for terms sales.

#### 4.3.3.1.3 Accounts Payable Adjustment

As in the receivables adjustment discussed in section 4.3.3.1.1, adjustments to the level of accounts payable need to be made in order to account for differences amongst the tested party's and the comparables' financing. Since accounting data do not break out the element of cost of goods sold that can be considered an interest expense, an estimate of the cost of goods sold is necessary. In order to estimate which portion of the cost of goods sold is an interest cost (time value of money); a comparison of the accounts payable to sales ratio of the tested party and the comparables is necessary. The assumption is that *companies that receive terms that are more generous will generally have higher accounts payable to sales ratios than those companies receiving less favourable terms*. The difference in the *accounts payable to sales ratios* amongst the tested party and any individual comparable will *reflect the differences in sales terms offered by their respective suppliers*.

If the comparables' accounts payable to sales ratios are adjusted to reflect the same accounts payable to sales ratio of the tested party, a calculation can be performed to determine the comparables' accounts payables if their suppliers offered them the same terms. By multiplying the difference amongst the comparables' adjusted payables and the comparables' original payables by the prime lending rate, an estimate of the amount of additional interest cost that the comparables would pay in their cost of goods sold (if financing its purchases the same way the tested party does) can be calculated. Increasing the comparables' cost of goods sold by this amount will, therefore, result in an adjusted cost of goods sold level that reflects similar financing to that of the tested party. The equation for the accounts payable adjustment is:

$$\begin{aligned}
 & \text{Change in Average Accounts Payable}_{\text{Comparable}} (\Delta AAP_C) \\
 &= \left[ \left( \frac{AAP}{S} \right)^{TP} \times S_C \right] - AAP_C \\
 &= \left[ \left( \frac{AAP}{S} \right)^{TP} - \left( \frac{AAP}{S} \right)^C \right] \times S_C \\
 & \text{Adjusted Sales}_{\text{Comparable}} (Adj COS_C) = COS_C + \left[ \Delta AAP_C \times \left( \frac{i}{(1+i)} \right) \right]
 \end{aligned} \tag{4}$$

In addition to adjustment of specific items of the financial statements, that reflects specific comparability differences, locational or geographic differences exist. The geographic differences

between the tested party and any of the comparable, unconnected parties could give effect to a difference in the arm's length consideration. Interest rate differences are sometimes used as a proxy for locational differences with the adjustment primarily being based on interest rates.

#### **4.3.4 Interest rate adjustment**

The OECD recognises that interest rates could be used in adjustments that reflects geographic differences amongst the tested party and the comparables (OECD, 2005(b):6). *No guidance is provided in any approach or methodology that could be used.*

Potential use of interest rates as a comparability adjustment mechanism is discussed in section 4.3.4 albeit in relation to a country risk premium. Interest rates used in the context of *working capital adjustment* as discussed in sections 4.3.3.1.1, 4.3.3.1.2 and 4.3.3.1.3 *adjust asset intensity relative to the prevalent market related lending rate (arm's length rate) and is the opportunity cost.* Interest rate in the working capital adjustment is a determinant for opportunity cost and *should not be interpreted as a country risk premium* that is discussed in 5.4.5.2.

Working capital adjustments have an impact on the price and cost definitions in the arm's length consideration definition,  $\alpha_i = P_i q_i - C_i$ . Accounts payable and receivables adjustment result in an adjustment to the sales (price) whilst an inventory adjustment results in an adjustment to the cost of sales. Although the working capital adjustments is based on price and cost adjustment, the profit  $\alpha_i$  is adjusted as a result of the other adjustments.

Comparability adjustments are equally difficult to objectively measure due to the detail of available data on which to base the adjustments and the inexact nature of functional difference. For instance, determining an exact amount (profit amount or profit margin) that the comparable dataset of a fully-fledged manufacturer (refer to Table 11 for more information on entity characterisation) needs to be discounted to reflect an assembler is not possible. *Transfer pricing is deemed not an exact science (OECD, 1995:I-5 and South Africa, 1999:9) but acknowledgement of the non-exact nature of transfer pricing does not diminish the challenge to define and test a model that would decrease ambiguity in determining the arm's length consideration.*

Transfer pricing aims to determine the arm's length consideration, which are either expressed as a price, (if the CUP method is used) or a margin (when any of the other methodologies are used; refer to Figure 18 where methodology application is considered). A comparability adjustment

transfer pricing model must take cognisance of all the comparability factors (more than mere working capital adjustments) and determine what could be considered as an arm's length consideration, which is founded on the risk - reward trade off (OECD, 1995:I-10, South Africa, 1999:34). Comparability is difficult to measure, however, risk is measured with various methodologies (such as capital asset pricing model and accounting beta method) available that is used in corporate finance and valuations (Brigham *et al.*, 1999:178, 392).

#### **4.3.5 Risk fundamentals**

Risk is a concept which relates to uncertainty and the relative likelihood of events occurring which are uncertain (Brigham *et al.*, 1999:160). These uncertain events can have a positive or negative impact on whoever assumes this uncertainty or risk. The bigger the uncertainty the bigger the risk and if someone is prepared to assume such uncertainty, the expected reward is commensurate with the perceived uncertainty or risk.

In transfer pricing the view is that risks follow functions. The functions performed (taking into account the assets used and the risks assumed) will determine the allocation of risks amongst the parties to the transaction, and the conditions each party would expect in arm's length (OECD, 1995:I-10). In practice it is virtually impossible to find complete comparables (companies that is directly comparable to the tested party) and in order to fulfil the comparability test, adjustments to comparable data occurs. In reference to risk, functional differences exist, albeit small, which in turn give rise to differences in risk that is observable with the difference in returns.

For example, an MNE automotive manufacturer decides (as a business strategy) to transfer inventory ownership (the asset) to a regional procurement entity. The MNE manufacturer does not hold inventory nor does it procure or manage the inventory (the functions) which result in the risk associated with the function and asset being transferred to the regional procurement entity. In undertaking a transfer pricing evaluation in this example, if the manufacturer that is "risk stripped" is the tested party, then comparables to that effect needs to be found. It is possible to find comparable manufacturers but it is difficult to determine if the comparables has the same risk profile even if functional comparability has been established. Hence, adjustment to inventory in these circumstances is appropriate (refer to section 4.3.3.1.2 for a comprehensive discussion on inventory adjustment).

#### ***4.3.5.1 Allocation of business risk***

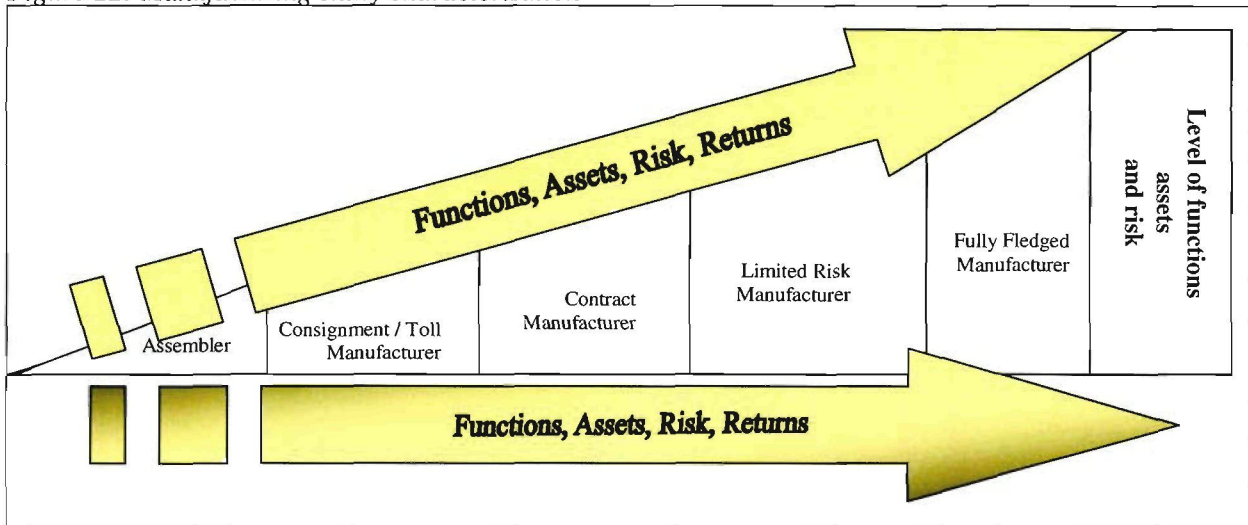
The *exact level of business risk that can be removed* from a connected party depends on the particular manner in which a “fixed or target return” is achieved based on the basket of functions, assets and risk undertaken by that particular connected party. Connected parties’ reward is based on a guaranteed net-cost-plus margin on the basis that the functions, assets and risk associated with the transaction under consideration are being transferred to another entity within the same MNE.

Hence, the connected party’s functions, assets and business risks as well as return (profit) have effectively been transferred from one entity (transferor) to another recipient entity (transferee) of the same MNE. The consequence of the business risk transferral is that the arm’s length consideration (profit) from the transferor reduces (less functions, assets and risk) whilst the transferee’s arm’s length consideration increases commensurately (more functions, assets and risk).

This practice gives rise to various entity characterisation definitions. In the specific case the research deals with, a manufacturer according to a broad characterisation is analysed. Within the spectrum of manufacturing entity characterisation, risk and the arm’s length consideration can be transferred through the transfer of functions and assets. The transfer of functions, assets and risk impacts on the arm’s length consideration both the connected parties derive from the affected transaction.

Entity characterisation is graphically presented in Figure 22 as a spectrum, with functionality, assets and risk increasing in complexity from left to right with the arm’s length consideration following the same trend. The upper bound of the spectrum for manufacturing entities can be described as a fully-fledged manufacturer, while the lower bound can be described as an assembler with the contract manufacturer positioned amongst the two extremes.

Figure 22: Manufacturing entity characterisation



(Source: own compilation)

The expected returns for companies characterised on this spectrum correlates with the functions performed and risks assumed. In general, the returns earned by an entity characterised as a pure contract manufacturer undertaking minimal risks should be subject to smaller variances in rewards than those earned by fully-fledged manufacturers operating within a similar industry. The activities the different manufacturing entities undertake are summarized in Table 11.

In the practical case undertaken in the research, an initial assessment would classify the tested party, ZA Case 01 as an assembler. However, after the functional analysis (see 5.3.3), the tested party is closer aligned to limited scope manufacturer. This is even further complicated if the TNMM (see 3.3.2.1) is applied in the determination of the arm's length consideration.

The complication arises when the arm's length consideration is based on a net profit margin rather than gross margin (connected party dealings are price in the cost of sales line in the income statement). Not all the operating expenses included in the determination of the net profit are as a result of connected party dealings. External expenses (such as labour and consumables) are procured through the open market, which reflects arm's length conditions. The combination of operating expenses from the open market and from connected parties does not reflect only connected party dealings, which complicate the determination of the arm's length consideration (see the functional analysis of ZA Case 01 in section 5.3.3.)

Table 11: Identified manufacturing entity characteristics

Assembler	Consignment / Toll Manufacturer	Contract Manufacturer	Limited-Scope Manufacturer	Fully-Fledged Manufacturer
<p>Assembler is engaged in the piecing together of components. Assemblers undertake few entrepreneurial activities and bear limited risk. An assembler is usually constrained to operate according to the product specifications, quality assurance and quality control procedures, and production schedules established by the customer. The value added contributed by an assembler is limited to the manufacturing function that is not operationally or economically efficient for the customer to undertake itself.</p>	<p>A consignment / toll manufacturer is functionally equivalent to a contract manufacturer except that a consignment/toll manufacturer does not own</p> <ul style="list-style-type: none"> <li>▪ raw materials,</li> <li>▪ work-in-process,</li> <li>▪ finished goods or</li> <li>▪ inventory.</li> </ul> <p>Consequently, its remuneration is usually calculated by using a small mark-up on costs similar to a service fee thus reflecting the reduced risk exposure.</p>	<p>A contract manufacturer typically undertakes the operational functions required to manufacture a product. However, a contract manufacturer typically does not undertake many entrepreneurial activities, which would result in risk bearing or the development of intangible assets. A contract manufacturer usually utilizes the production technology, product specifications, quality assurance and quality control procedures, and production schedules established by the customer. Contract manufacturers may also perform basic assembly or manufacturing tasks that require few technical skills of its production employees other than those skills learned on-the-job. As a result, the returns earned by a fully-fledged manufacturer or assembler operating in the same industry and markets differ significantly. Contract manufacturers are typically compensated in three different ways:</p> <ul style="list-style-type: none"> <li>▪ a set price per unit of production;</li> <li>▪ a mark-up on direct manufacturing costs incurred; or</li> <li>▪ service fee, which serves as a fully loaded cost reimbursement.</li> </ul>	<p>A limited scope manufacturer has some of the responsibilities of the fully-fledged manufacturer but also some of the characteristics of the contract manufacturer. As opposed to the fully-fledged manufacturer, it does not own the intangibles associated with the products. However, the limited risk manufacturer undertakes routine activities regarding sourcing of raw materials, production scheduling, and subcontracting third parties. The entity is not guaranteed a minimum turnover and prices by the ordering party. Therefore, the appropriate remuneration of the limited risk manufacturer is lower than that of the fully-fledged manufacturer but higher than that of the contract manufacturer.</p>	<p>Typically undertakes all of the entrepreneurial and operational activities associated with an entity in its respective industry. A fully-fledged manufacturer undertakes strategic activities such as production scheduling; design of production floors and production processes; development of product specifications, quality control and quality assurance procedures; research and development or product development; development of purchasing policies and materials specifications, and inventory plans; and determination of corporate strategy. Consequently, fully-fledged manufacturers incur those risks that are typically associated with these activities (e.g., inventory shrinkage risk and market risk) and enjoy the benefits of intangibles that are developed (e.g., product and/or production technology to the extent that it is not acquired from third parties, trademark/trade name, reputation for product quality) from pursuing these actions. The operational functions include both the manufacturing or assembly activities necessary to complete the product, and the daily administrative tasks required to maintain a viable production facility.</p>
<p>South African example: Tyco Trucks which assembles for International and Peterbuilt</p>	<p>South African example: Daimler Chrysler with the Colt LCV</p>	<p>South African example: BMW with the 3 series, Daimler Chrysler with the C Class Mercedes Benz</p>	<p>South African example: Good Year Tyres</p>	<p>South African example: Tiger Wheels manufacturer of wheels</p>

(Source: own compilation)

When analyzing controlled parties that bear such an artificially low level of risk by reference to a set of broadly comparable independent firms, which is the case under TNMM, it is a *challenge to*

*identify independent firms that are, sufficiently comparable to the controlled parties in terms of risks assumed.* In practice, a solution to address this issue is by selecting firms that perform functions that are similar to the tested party's, based on the principle that the nature of business risks are typically related to the types of functions performed.

The relationship amongst functions performed and risk assumed is evidenced in the case incorporated in the research (see 5.3.3 where the functions are identified as well as 5.4.2 for the comparable analysis based on identified functions). In circumstances where a tested party has been effectively guaranteed a fixed return (as assembler, contract or toll manufacturers, see Table 11), functional similarity does not adequately address this risk differential because small functional differences is difficult to identify in comparables. In such cases, an adjustment to the comparables for this risk differential seems warranted such as working capital adjustment (see 4.3.3).

#### **4.3.5.2 Measuring risk**

An asset exposed to risk is defined as an asset for which the investor is uncertain of the amount and the timing of the expected return. Total risk, therefore, embodies all the fundamental sources of uncertainty, and includes business risk, financial risk, liquidity risk, exchange rate risk, and country risk (Urken *et al.*, 2003:39). From this premise it follows that to compensate for such uncertainty, investors assess a *risk premium* to their required rates of return over their risk-free rate (such as government bond yield, see 5.4.5.2 where government bond yield is further explored) when investing in risky assets (Brigham *et al.*, 1999:185).

Portfolio theory contains a number of models, such as the Capital Asset Pricing Model (CAPM) that attempt to capture this risk-return relationship (Brigham *et al.*, 1999:178 and Urken *et al.*, 2003:40). In order to incorporate this concept of risk-return relationship in transfer pricing practice, the comparability adjustment transfer pricing model (CATPM) should recognise these various risk factors.

Urken *et al.*, (2003:41) employed the Capital Asset Pricing Model ("CAPM") which recognizes the univariate relationship amongst systematic risk and return, to motivate a risk adjustment factor. (Refer to Appendix 2 where an analysis and comparison was undertaken between the CAPM, CATPM and the arm's length principle). The CAPM framework makes a *clear distinction*

amongst systematic (or market) risk and unsystematic (or diversifiable) risk which equates to total risk. An underlying concept of the CAPM is that it regards investors' primary concern being the overall risk of their portfolios with the relevant risk of an individual asset is its contribution to the overall risk of a well-diversified portfolio (Brigham *et al.*, 1999:178).

Under this approach, the relevant risk measure for an individual risky asset is its co-movement with the overall market portfolio of risky assets (Urken *et al.*, 2003:40, Brigham *et al.*, 1999:180). Furthermore, this co-movement, measured by an asset's covariance (is a measure which combines the variance (volatility) of returns with the tendency of those returns to move up or down at the same time that the market) with the market portfolio, is equal to an asset's systematic (or market) risk and is referred to as an asset's *beta coefficient* (Brigham *et al.*, 1999:180,203). Hence, *risk premiums* in a market consisting of diversified investors reflect systematic risk, and that *risk can be observed in the marketplace via an asset's beta coefficient*.

Curtis and Ruhashyankiko (2003:1) explore the assets' risk - return relationship further, they view risk adjustments conventionally with risk adjustments seen as a proxy that may *provide an acceptable adjustment to the expected returns*. However, these adjustments may not provide an appropriate adjustment to the risk itself; it might be an adjustment to give effect to the variance of the expected returns.

The risk – return relationship and adjustments to affect expected returns is important for transfer pricing purposes. Although the *CAPM observes risk via an assets' beta coefficient* (Brigham *et al.*, 1999:180) and it follows that *adjustments* to reflect differences in risk need to be based on these *differences in beta coefficient* (Urken *et al.*, 2003:40,41) in comparing the risk associated with assets. The view of Curtis and Ruhashyankiko (2003:2) that the *beta coefficient risk adjustments* performed might not result in an appropriate adjustment to the risk itself, *rather to the underlying asset, which gives rise to certain risk. Uncertainty insofar as an adjustment to the risk itself or an adjustment to the asset which give rise to the risk confirms the need for a model which recognises assets or asset use and make adjustments to enhance comparability in terms of functions, assets and risk*.

#### ***4.3.5.3 Risk - return trade off***

The OECD state that in the open market, the assumption of increased risk will also be compensated by an increase in the expected return (OECD, 1995:I-10). The OECD guidelines provide an example, which is of particular importance within the context of this research. The OECD guidelines reiterate that the *functions performed* (taking into account the assets used and the risks assumed) will *determine to some extent the allocation of risks amongst the parties to the transaction*, and therefore the conditions each party would expect in arm's length dealings (OECD, 1995:I-11).

For example, when a distributor takes on responsibility for marketing and advertising by risking its own resources in these activities, it would be entitled to a commensurately higher anticipated return from the activity. The conditions of the transaction would be different from when the distributor acts merely as an agent, being reimbursed for its costs and receiving the income appropriate to that activity. Similarly, a contract manufacturer or a contract research provider that takes on no meaningful risk (meaningful in terms of impact on return) would be entitled to only a limited return or profit.

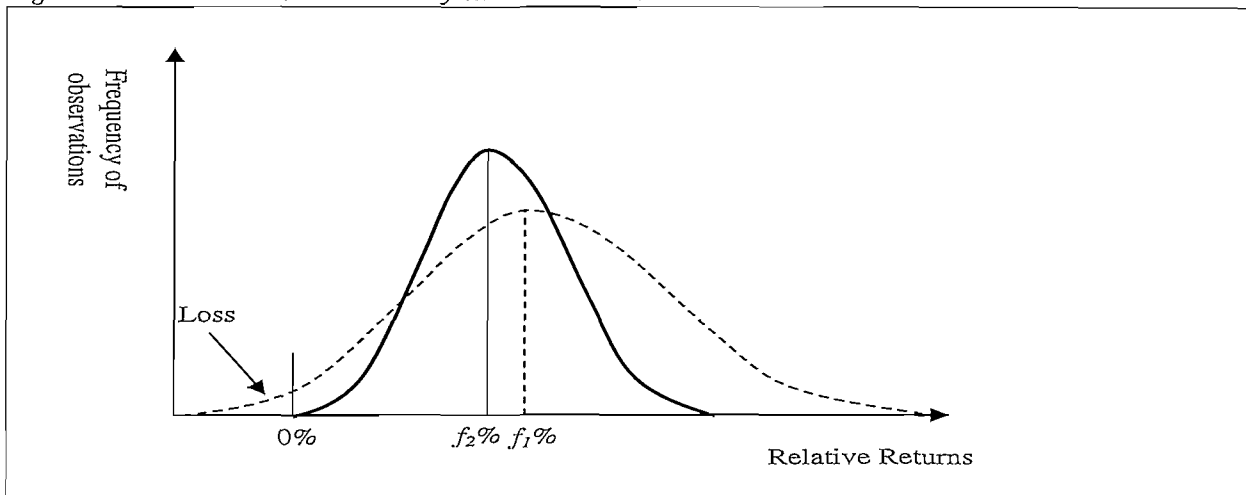
Various adjustments (working capital) to accounts receivable, accounts payable and inventory are performed to reflect comparative levels of opportunity cost (refer to section 4.3.3 for a comprehensive discussion). However, these adjustments do not take cognisance of total risk and its particular definitive components, which is recognised by the CAPM and the proposed model (a comparable adjustment transfer pricing model) of this research.

The risk – return assumption of risk is based on the concept of risk aversion under which a trader, investor, or agent is willing to bear more risk if there is an appropriate compensation in terms of expected returns. The resulting positive risk - return relationship has become ubiquitous over the years and is embedded in rational expectations of asset pricing models such as the CAPM (Curtis and Ruhashyankiko, 2003:1). In order to clarify the risk - return relationship in the context of transfer pricing, a simple analysis by making use of the entity characterisation continuum (see Table 11 for manufacturing entity characterisation) are undertaken in the next section.

#### 4.3.5.3.1 Entity characterisation and risk – return interaction

The research aims to illustrate the application of the arm's length principle with the guidance provided by a comparability adjustment transfer pricing model. Risk or the lack thereof can be illustrated in accordance with manufacturing entity characterisation tabulated in Table 11. The higher the risk associated with performing a particular function, the wider the dispersion of the data is expected (increased risk observable as increase in volatility, hence wider data dispersion) as illustrated in Figure 23.

Figure 23: Risk Return based on entity characterisation



(Source: Curtis and Ruhashyankiko 2003:1)

The dotted line Figure 23 represent, in manufacturing entity characterisation terms the fully fledged manufacturer as described in Table 11, which undertakes a range of activities and functions that are exposed to risk with the median return at  $f_1$  with some entities realising negative or loss-making returns.

On the other hand, the lower risk manufacturers, such as the contract manufacturer or assembler, realises a median return of  $f_2$  with no entities realising negative returns. In theory this is appropriate, in practice, it is difficult to determine comparable data, which fall absolutely within these classifications. The use of statistical techniques such as inter quartile ranges are used which excludes outliers that could potentially influence the arm's length consideration, which in the example will be  $f_1$  for a fully-fledged manufacturer.

The affect of adjustments to the comparable range and in particular to the median, which are usually considered as the arm's length consideration is illustrated in Figure 23 (South Africa,

1999:27). Prior to making the adjustments, uncertainty exists whether adjustment(s) to the comparable data would move the median reward  $f_I$  to the right (increase) or to the left (decrease). The reward (profit)  $f_I$  decreases in situations where the comparable entities assume higher risk (in relation to identified assets) than the tested party does and by virtue of enacting these adjustments; the rewards of the comparables are adjusted downwards on a comparable asset base. The assets involved in these adjustments are inventory and accounts receivable whilst accounts payable, a liability in accounting terms, are also included in the working capital adjustments.

#### **4.4 Fundamentals of a Comparability Adjustment Transfer Pricing Model**

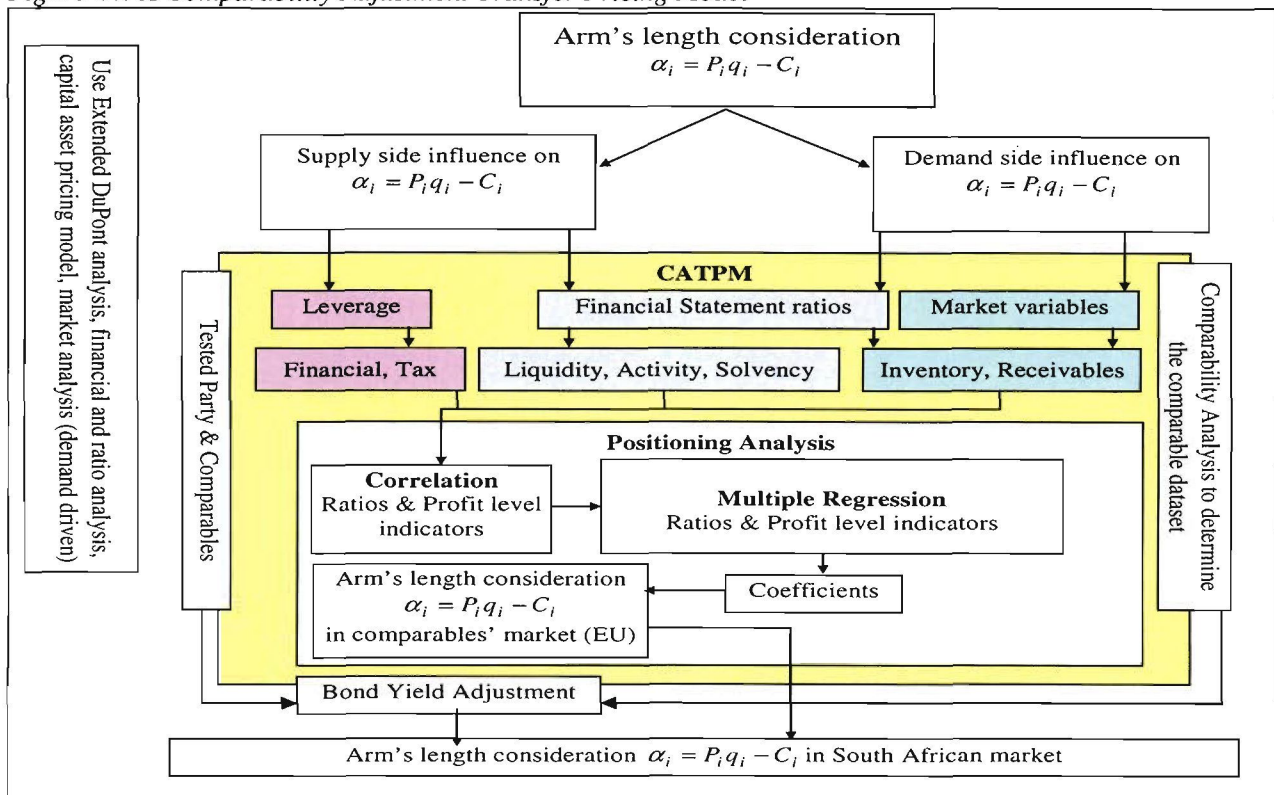
An important requirement of any transfer pricing model is that its application ensures comparability in the determination of the arm's length consideration. The Capital Asset Pricing Model ("CAPM") provides insight insofar as risk - reward interaction and the reward associated in terms of assets. Risk is quantified by virtue of the beta coefficient, a measurement of the return of assets compared to the market (Brigham *et al.*, 1999:180).

The CAPM has value insofar as quantifying risk but does not address it in terms of transfer pricing where it is imperative to measure returns (profit) on a transaction-by-transaction basis with the arm's length consideration being based on comparable information. In order to establish a consistent basis for the analysis, the financial statement analysis and terminology as well as acronyms used are in accordance with those documented in sections 1.6.13 and 1.6.14.

The approach used to define the Comparability Adjustment Transfer Pricing Model ("CATPM"), as illustrated in Figure 24, is based on defining a model based on economic fundamentals. The fundamentals are demand and supply side variables as illustrated in Figure 24, measured by financial statement information (refer to 1.6.13 and 1.6.14 for details on financial statement ratios and acronyms used).

There will be convergence amongst demand and supply, however, the aim is to establish and adjust for factors that enhance comparability in the determination of the arm's length consideration. The supply side of the model is based on an extended DuPont analysis as well as determining tax (Brigham *et al.*, 1999: 54, 86 and 90) and financial leverage (Brigham *et al.*, 1999: 77 and Libby *et al.*, 1998: 712).

Figure 24: A Comparability Adjustment Transfer Pricing Model



(Source: own compilation)

The demand side of the model is primarily concerned with undertaking a market analysis based on demand-pull and business ratio's (Brigham *et al.*, 1999:86 and Libby *et al.*, 1998:710). The supply and demand side of the CATPM progresses to a positioning analysis, positioning of the tested party in relation to comparable companies, the foundation of the arm's length consideration. In making use of foreign comparable data, in particular from the European Union (EU), the positioning analysis result in positioning the tested party in the EU, (refer to 4.4.3 and Appendix 4.5 where the results of the positioning analysis were disclosed). The fundamentals of the model can be summarised by the following key attributes:

- The model provides the foundations for the relationship amongst market and business risks on the one hand and accounting profitability from financial statements on the other
- The model introduces insights from the demand side and market analysis to allow subsequent adjustments to reflect difference in economic conditions across jurisdictions
- The model improves the comparability analysis by using ratio analysis (Brigham *et al.*, 1999: 86 and Libby *et al.*, 1998:710), or the relevant profit level indicators (refer to section

3.3.2.1.1 for a description of the profit level indicators). The ratio analysis in conjunction with the profit level indicators provides measures of functions, assets and risks obtained from the financial statements and guide the analysis of comparables, even in the absence of industry comparables.

- The model enhances the comparability analysis by deriving weights that determine the quantitative impact of mutually exclusive (see 1.6.24) and collectively exhaustive (see 1.6.4 ) (“MECE”) ratios on profitability through positioning analysis. The positioning analysis uses econometric regression techniques to produce point estimates of arm’s length return and small ranges within, or outside the inter-quartile range (Albright et al., 2003:191 and Berenson and Levine, 1999:197).

#### **4.4.1 CATPM components**

The comparability adjustment transfer pricing model (“CATPM”) is aimed at a substantial enhancement of the comparability analysis, which forms an integral part of any transfer pricing evaluation, as required by the OECD Guidelines (OECD, 1995: I-6 – I-8). The components of the model is founded on the supply and demand side dynamics underlying the affected transaction amongst connected parties in relation to that of determined comparables (refer to section 4.5.1 where the comparability analysis in the determination of a comparable set is discussed and disclosed in detail).

##### ***4.4.1.1 Supply side***

The supply side of the model in Figure 24 is based on ratio analysis (refer to section 4.4.1.1.2 for more details) and the extended DuPont analysis in Figure 25 (refer to section 4.4.1.1.2 for a detailed discussion) in conjunction with financial ratio analysis, in particular two leverages; tax and financial. Each of these concepts is discussed in more detail in the following sections.

###### **4.4.1.1.1 Leverage**

The concept of leverage is similar to *elasticity* (relative change in quantity in relation to relative change in price, which caused the change in quantity) but leverage can be best explained by a reference to physics. In physics, *leverage implies the use of a lever to raise a heavy object with a small force*. The concept of leverage in business simply refers to *that a relatively small change in*

*variables such as sales or cost could potentially result in a bigger change in returns or profitability.*

For example, debt financing has a cost associated with it, usually an interest rate. In the event that the company that borrows at 10 per cent from a bank earns 15 per cent on the borrowed funds, the return on capital is magnified or leveraged by 5 per cent. Brigham *et al.* (1999:79) indicates that leverage is possible due to the following:

- The interest rate cost is deductible as an expense for tax purposes, which effectively lowers the tax expense and increases operating profit.
- If the expected rate of return (earnings before interest and tax (EBIT)) divided by total assets exceeds the interest rate on debt, the portion that it “exceeds” provides additional or leveraged returns.

#### 4.4.1.1.2 Business ratio analysis

Business ratio analysis provides the connection amongst supply and demand captured in the comparability adjustment transfer pricing model (CATPM). Libby *et al.*, (1998:707) as well as Brigham *et al.*, (1999:72) does not recognise business ratio analysis *per se*, it is seen as a combination of financial statement and ratio analysis. Financial statement analysis’ objective is to enable comparison, conceptionally similar to transfer pricing insofar as the comparability analysis. The financial statement comparison according to Libby *et al.*, (1998:706) entails time series analysis and comparison with similar companies, both aspects are included in transfer pricing.

Business ratio analysis (refer to 1.6.13 for more details), on the other hand according to Libby *et al.*, (1998:707) aims to identify significant relationships in a proportional manner amongst two or more financial statement items. In order to expand on the pragmatic approach followed in this research, a ratio analysis of the Automotive and Components Industry in South Africa of listed companies on the Johannesburg Securities Exchange (JSE) over the timeframe of the research (1996 through to 2002) is tabled in Table 12.

Libby *et al.*, (1998:710) and Brigham *et al.*, (1999:87) provide guidance insofar as business ratios and highlights that ratios measures specific aspects of a business and can be grouped in the broad categories relating to profitability, asset structure, liquidity, solvency and market value which is evidenced from Table 12:

Table 12: Selection of ratios of the automotive and component industry of South Africa

	2002	2001	2000	1999	1998	1997	1996	Average
<b>Asset structure</b>								
Total asset to turnover	3.12	2.25	2.46	2.28	2.28	2.53	2.76	2.53
<b>Funding structure</b>								
Total assets to funding	2.50	2.22	1.76	1.62	1.83	1.54	1.60	1.87
Fixed assets as % of funding	51.27	47.46	38.13	37.62	35.50	34.04	35.82	39.98
Long-term loans as % of total debt	9.88	22.16	17.58	22.65	22.02	25.39	28.34	21.15
<b>Solvency and liquidity structure</b>								
Current ratio	1.21	1.24	1.54	1.69	1.57	1.79	1.91	1.56
Quick ratio	0.53	0.69	0.81	0.95	0.86	0.91	0.89	0.81
Debt to assets	0.67	0.71	0.53	0.50	0.59	0.47	0.52	0.57
Debt to equity	2.02	2.41	1.11	0.98	1.41	0.89	1.10	1.42
Interest cover	2.75	1.52	1.54	1.57	1.33	2.68	3.27	2.09
Debt to cash flow	5.90	4.89	7.37	4.04	11.80	5.57	4.86	6.35
Cash flow interest cover	3.29	4.70	2.30	2.33	1.61	2.76	3.29	2.90
<b>Profitability structure</b>								
Operating profit margin (%)	4.39	2.64	3.45	6.45	4.77	5.08	5.58	4.62
Net profit margin (%)	2.33	0.58	0.48	1.74	0.32	2.05	2.68	1.45
Return on assets (%)	13.71	5.95	8.47	14.53	10.86	12.85	15.41	11.68
Return on equity	21.90	4.46	2.49	7.29	1.76	9.77	15.55	9.03
Leverage factor	1.93	1.07	1.25	1.24	0.58	1.18	1.53	1.25
Retention rate (%)	77.27	113.04	34.58	85.93	145.13	71.40	78.24	86.51
Return on external investments (%)	14.08	14.71	22.44	51.17	69.59	13.30	24.72	30.00

(Source: ABSA (2003: 27))

Although these business ratios provide an indication of the business within specific reference to aspects such as liquidity and profitability, it is also imperative in comparison of businesses with itself and competitors. From Table 12, the following observations of the South African Automotive and Component Industry can be made:

- Asset structure indicates the relation between assets and sales. On average, South African companies' assets exceed 2.53 times their turnover. This is a significant indicator that the South African industry is asset intensive.
- Funding structure indicates the size of funding to a reference base such as assets or long-term debt. On average the South African industry fixed assets amounts to 39.98 per cent of funding with long-term debt being 21.15 per cent of total debt. Funding in the industry is predominantly short-term in nature.
- Solvency and liquidity structure refers to the ability of a company to meet its long-term obligations on a continuing basis. For example, cash flow interest cover is on average 2.9 that indicates that cash flow generated covers the interest expense 2.9 times, a good

solvency measure. Current ratio measures the relationship between total current assets and total current liabilities. The current ratio is a measure of the “cushion” of working capital for the volatility in the flow of funds in the working capital accounts. The average current ratio is 1.59, which indicates that current assets cover current liabilities by 1.59 times, a good measure of liquidity.

- Profitability structure is a primary measure of the overall success of a company. Tests of profitability focus on measuring the adequacy of income by comparing it with one or more activities that are measured in the financial statements (Libby *et al.*, 1998:709). The measures used in Table 12 is similar to the ones used in the research (see 1.6.13), hence no further detailed discussion is undertaken.

This same approach is used in transfer pricing and in particular the comparability adjustment transfer pricing model (CATPM) where the aim is to determine the business ratios that provides a positive correlation in estimating the arm’s length consideration. Transfer pricing is comparison driven (comparable, independent party requirement, see 1.6.1 and 1.6.5) therefore it is imperative that any model that aims to determine the arm’s length consideration should be based on a comparative base, in this instance, financial ratios of comparable companies. The comparison, for transfer pricing can either be on a price (under the CUP methodology) or a profit indicator amongst the parties to a transaction to be tested or the companies to which the comparison are made.

Information availability in most of cases determines which methodologies or approaches is to be used in the transfer pricing analysis (OECD, 1995:II-9 and South Africa, 1999:13). Financial information in most cases are readily available, hence the reliance on using financial information to determine the arm’s length consideration.

Financial ratio analysis is not limited to transfer pricing only; it is widely used in business and provides insight into corporate finance, management performance measures, investment decisions etc (Libby *et al.*, 1998:707 and Brigham *et al.*, 1999:72). In light of the wide spectrum of users of financial ratios from different disciplines, various approaches and models are used to illustrate financial performance. The financial ratios widely used as evidenced in Table 12 forms an integral part of the extended DuPont analysis (refer to section 1.6.11 for a list of the financial ratios used in the research).

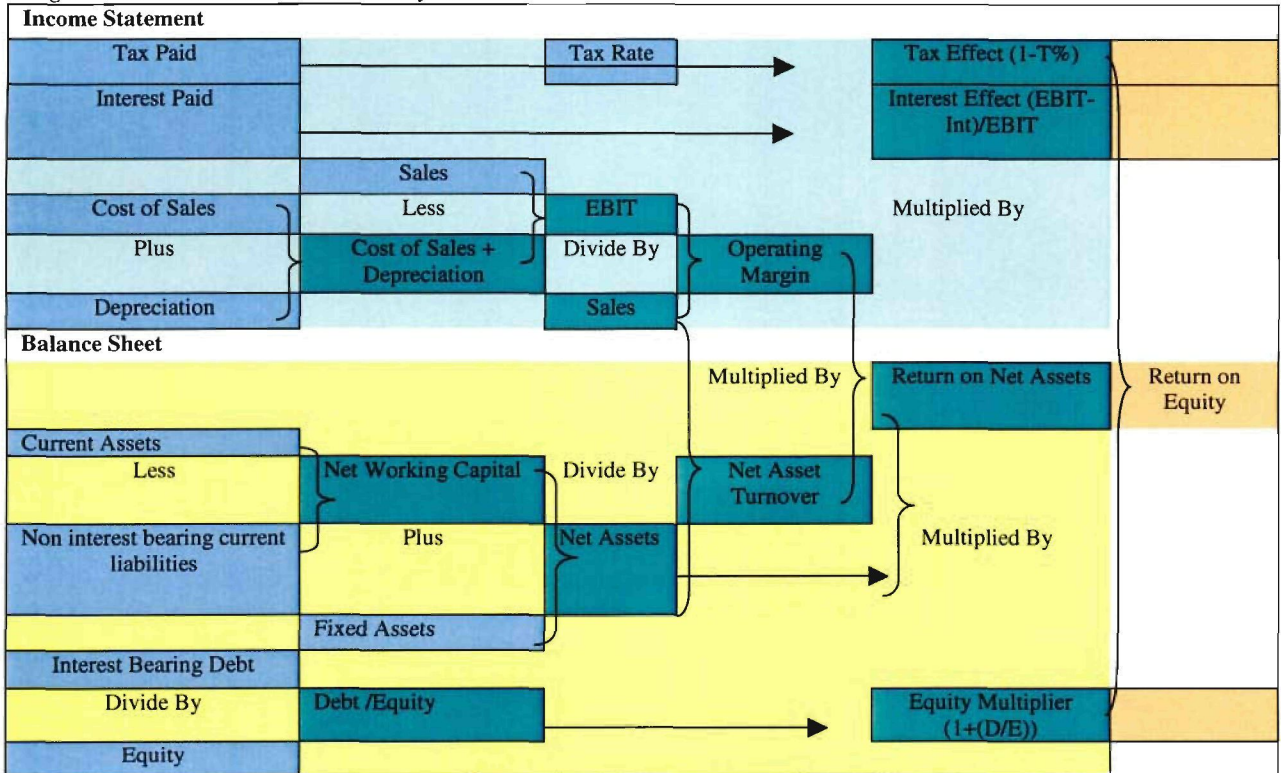
#### 4.4.1.1.3 The Extended DuPont Analysis of Profitability

The DuPont System of Analysis merges the income statement and balance sheet into two summary measures of profitability (Brigham *et al.*, 1999:89).

- The Return on Assets (ROA) and the Return on Equity (ROE)
- The system uses three financial ratios to express the ROA and ROE: Operating Profit Margin Ratio (OPM), Asset Turnover Ratio (ATR), and Equity Multiplier (EM).

The objective for any company is to ensure that the capital invested in operations generates sufficient liquidity for the company to finance short-term and long-term activities without putting solvency at risk.

Figure 25: Extended DuPont Analysis



(Source: Brigham *et al.*, 1999: 86)

Return on equity (the return the shareholders will be interested in) according to the DuPont System of Analysis is (Brigham *et al.*, 1999: 86):

$$ROE = \frac{NP}{Equity} = \frac{NP}{EBT} \times \frac{EBT}{EBIT} \times \left( \frac{EBIT}{Sales} \times \frac{Sales}{Capital} \right) \times \frac{Capital}{Equity} \quad (5)$$

The equation within the bracket of the return on equity equation,  $\frac{EBIT}{Sales} \times \frac{Sales}{Capital}$  is equal to return on investment (ROI). Return on equity (ROE), incorporating return on investment can be written as  $ROE = \frac{NP}{Equity} = \frac{NP}{EBT} \times \frac{EBT}{EBIT} \times ROI \times \frac{Capital}{Equity}$  and if the return on investment (ROI) equation is expanded, the return on investment (ROI) equation can be written as (Brigham *et al.*, 1999:87):

$$ROI = \frac{EBIT}{Capital} = \frac{EBIT}{Sales} \times \frac{Sales}{TA} \times \frac{TA}{REC} \times \frac{REC}{Inv} \times \frac{Inv}{Sales} \times \frac{Sales}{CA} \times \frac{CA}{CL} \times \frac{CL}{Debt} \times \frac{Debt}{Capital}. \quad (6)$$

The first two terms in the ROI equation provides the return on assets (ROA). This means that the ROA is included in the ROI, which in turn forms part of the ROE equation. These terms used in the extended DuPont model with their respective relevance to transfer pricing insofar as functions performed, assets used and risk assumed is tabled in Table 13.

Table 13: Ratio's measuring functions, assets and risk

Transfer Pricing Categorization			
Specific implication	Transfer pricing categorisation (functionality driven)	Ratio	Description
Operational ability	Function performed driven	$OM = \frac{EBIT}{Sales}$	Operating margin, widely used in transfer pricing analysis as a profit level indicator under the TNMM method
Use of sources finance to obtain leverage benefits	Function performed driven	$FLev = \frac{EBT}{EBIT}$	Financial leverage
Use of tax (timing, deferral) to obtain leverage benefits	Function performed driven	$TLev = \frac{NP}{EBT}$	Tax leverage
Cash flow position	Function performed driven	$CP = \frac{Sales}{CA}$	Cash position as expressed by sales to current assets, generated cash flow
Financial and funding structure	Function performed driven	$FSRM = \frac{Capital}{Equity}$	Financial structure and risk management. Companies' financing decisions determine the mix of debt and equity aimed at operational funding. It is also important from a transfer pricing perspective, especially with the safe harbour rule of 3:1 debt to equity (South Africa 1996: 3).
Activity	Assets	$TAT = \frac{Sales}{TA}$	Total assets turnover
Error or mismatch	Accounts receivables risk	$RecTO = \frac{Rec}{Inv}$	Accounts receivables turnover
Error or mismatch	Inventory risk	$ITO = \frac{Inventory}{Sales}$	Inventory turnover
Liquidity	Short term liquidity risk	$STLiq = \frac{CA}{CL}$	Short term liquidity
Solvency	Long term solvency	$LTSol = \frac{Debt}{Capital}$	Long term solvency
Liability	Liabilities	$LiabSt = \frac{CL}{Debt}$	Liability structure

(Source: Brigham et al., (1999: 87) and Libby et al., (1998: 710) and own compilation)

In exploring ratio analysis and the extended DuPont ratio analysis, the supply side of the CATPM, allows for the identification of ratios that reflects functions performed, assets used and risk assumed. The determination of the arm's length consideration is based on functions performed, assets used and risk assumed (OECD, 1995:I-8, I-9, South Africa, 1999:10, 28).

Ratio analysis in conjunction with the extended DuPont analysis allows for the recognition of the following factors that could be assessed in terms of its impact on profitability and is measurable with information obtained from the financial statements:

- Activity as expressed by the relative relation between sales and total assets
- Liquidity as expressed by the relative relation between current assets and current liabilities
- Solvency as expressed by the relative relation between debt and capital
- Financial leverage as expressed by the relative relation between earnings before tax (EBT) and earnings before interest and tax (EBIT)
- Tax leverage as expressed by the relative relation between net profit (NP) and earnings before tax (EBT)

Connected parties do not operate in complete isolation from the market and is exposed to the market forces of supply and demand. The supply side of the CATPM defined two leverages, i.e. tax and financial and in addition to that, ratios reflecting business activity (sales to assets), liquidity and solvency. Ratios, which could be indicative of the demand side, are ratios that relate to sales and inventory. In the event that demand-pull deteriorates, sales are expected to decline with inventory holding to increase. This observation is based on demand being measured by sales, accounts receivable and inventory (both assets on the balance sheet) that provides “access” to goods that can be sold. Within this context, the CATPM’s supply and demand side converge; business ratio’s reflects supply and demand dynamics. The ratios that reflects the demand side of the CATPM is as follows:

- Inventory as expressed by the relative relation between inventory and sales
- Accounts receivable as expressed by the relative relation between accounts receivable and inventory

#### ***4.4.1.2 Demand side***

The demand side of the model is based on business ratios such as inventory and accounts receivable and a market analysis. The market analysis is primarily concerned with demand variables that is firstly under the control of the tested party (as well as the comparables), and secondly under the control of competitors and lastly, external, uncontrollable variables.

#### 4.4.1.2.1 Reference to the Capital Asset Pricing Model

The capital asset pricing model (CAPM) postulates the relationship amongst risk and return with reference to an asset (Brigham *et al.*, 1999:178). Risk, according to the CAPM, is the sum of market risk, (systematic risk) factors out of the control of the company, such as interest rates and exchange rates, (corresponds with demand side and in particular the market analysis) and referred to as systematic risk and on the other hand, idiosyncratic risk which is under the control of the company (Brigham *et al.*, 1999:180). The approach of the CAPM leads to the realisation that the company can by *virtue of managing idiosyncratic risk limit overall risk close to the level of market risk* that is out of their control.

In order to enable comparisons amongst companies, risk is not recorded in financial statements nor is it measured in any specific manner. However, *the impact risk had on companies is recorded in their financial statements in the form of earnings or profits* (use of the profit in relation to assets or capital provides measurement opportunities). The *relative base on which these profits are earned, the assets, (an essential factor in the CAPM) are recorded inclusive of the risk the company was exposed to in realising the profits.*

Hence, following on a pragmatic approach by analysing the financial statements and profitability ratios, comparisons amongst companies are possible. The comparisons undertaken include risk for all the companies (systematic and idiosyncratic) due to the fact that profitability are a result of the underlying risk (irrespective if it realises or not) with reference to a base, an asset (refer to section 4.3.5.2 where risk measurement and reference to the CAPM is discussed in more detail).

#### 4.4.1.3 Market analysis

Market analysis, within the context of transfer pricing, aims to describe the market in which the tested party and its comparables operate (South Africa, 1999:25). Thompson and Strickland (1999:100) identifies seven factors to be considered when a market and industry analysis is undertaken which are as follows:

- Dominant economic characteristics of the industry
- Competition
- Competition drivers

- Competitive position of major market participants or strategic groups
- Competitor analysis
- Key success factors
- Industry prospects and overall attractiveness

South Africa's PN 7 (South Africa, 1999:12) and the OECD Guidelines (OECD, 1995:I-12) provide a list of factors to consider when markets are analysed and compare which are:

- the geographic location of the market;
- the size of markets;
- the extent of competition in the markets;
- the availability of substitute goods and services;
- the transport costs; and
- the level of the market (retail or wholesale).

These guidelines do not venture in providing specific details how such factors are to be considered. *The potential effect the factors might have on the arm's length consideration is not discussed at all.*

It is not surprising that confusion and ambiguity emerges with the interchangeable use of the terms "market" and "industry analysis". For the purposes of this research, the terms are used in the following context:

- The term '**industry**' normally refers to a group of companies producing technologically related products or services. The group need not and normally will not all compete with one another, either because they operate in different geographical markets or because they operate at distinct steps in the value chain (manufacture and distribution). For example, the automotive industry comprises components suppliers as well as vehicle assemblers. Industries can be broadly or narrowly defined but tend to be relatively broad. For example, reference is often made to the software industry and the IT sector.
- The term '**market**' in contrast focuses on the consumer (purchaser) needs that are being satisfied and leads directly to the identification of competitors. In many cases, the

definition of the market(s) in which the company is active is obvious. For example, there is clearly a market for cars, which is distinct from that for buses.

In light of defining the CATPM, it is useful to review the types of variables, which are likely to influence demand, and the extent to which these variables are controllable by the tested party. This is of importance since the tested party aims to determine thresholds for controllable variables to maximise profitability and manage risks to minimise the effect of those risk on profitability. The following table is a summary of variables considered in conducting a market analysis.

*Table 14: Demand variables*

Under Company Control	Under Competitor's Control	Universe or macro economic factors
The product's own price The price of related products from the company's product line, i.e. substitute products Future prices for the product and related or substitute products Advertising and / or marketing for the affected products Product design characteristics and performance criteria	Prices of competing products Prices of substitutes products Advertising and / or marketing for the affected products	The level of real / nominal and disposable income or (average or per capita) Gross Domestic Product (GDP) growth Inflation rates Interest rates Fiscal policy Government policy (e.g., through restrictions on advertising of tobacco or alcohol, supply side measures such as the Motor Industrial Development Programme ("MIDP")) Tastes and preference, applicable when product differentiation is technology driven

*(Source: own compilation)*

In determining the supply and demand side of the CATPM and in particular the business ratio analysis, various ratios have been identified from a supply and demand perspective. Demand is measured in terms of inventory and accounts receivable ratios. Supply is measured by liquidity, activity, solvency ratios as well as financial leverage and tax leverage.

#### 4.4.2 CATPM regression equation

In determining the arm's length consideration, ( $\alpha$ ) of  $n$  unconnected parties that are comparable to the tested party ( $i$ ) based on functions performed, assets used and risk assumed, for the *purpose to determine point estimates from weights ( $w$ ) that are obtained from the supply and demand ratios* which are MECE can be written as  $\alpha_i = w_1(Dr_i) + w_2(Sr_i) + w_3\varepsilon_i$  .

(7)

Demand risk ( $Dr_i$ ) consists of inventory risk  $\left(\frac{Inventory}{Sales}\right)_i$  and receivable risk  $\left(\frac{Receivables}{Inventory}\right)_i$ .

Supply risk ( $Sr_i$ ) consists of two leverages, financial  $\left(\frac{EBT}{EBIT}\right)_i$  and tax  $\left(\frac{NP}{EBT}\right)_i$ , as well as liquidity

$\left(\frac{CA}{CL}\right)_i$ , activity  $\left(\frac{Sales}{TA}\right)_i$  and solvency  $\left(\frac{Debt}{Capital}\right)_i$  measures (refer to section 1.6.13 for acronyms

used in financial ratios).

The regression is based on the MECE ratios and their impact on profitability, with ( $a$ ) being the intercept, ( $\varepsilon$ ) the error term and ( $\beta_1... \beta_n$ ) the coefficients of the regression. The equation is

$$\alpha_i = a + \beta_1 \frac{Inv}{Sales} + \beta_2 \frac{Rec}{Inv} + \beta_3 \frac{CA}{CL} + \beta_4 \frac{Sales}{TA} + \beta_5 \frac{Debt}{Capital} + \beta_6 \frac{EBT}{EBIT} + \beta_7 \frac{NP}{EBT} + \varepsilon \quad (8)$$

#### 4.4.2.1 Sample size

In the determination of the arm's length consideration, the potential comparable unconnected parties are determined in accordance with functions, assets and risk assumed. Functionality thus drives the database query. Comparable functionality is driven by the facts established during the functional analysis. In this research, the focus is on a specific case, a manufacturer of automotive products. In addition to the query criteria used to establish independence (unconnected parties) the NACE (Nomenclature générale des activités économiques dans les communautés Européennes), an industry classification system is used (see Appendix 2 for more details). The NACE code that reflects a manufacturer of automotive products in conjunction with the independence criteria are used to define the potential comparable dataset.

The practical application of determining a potential comparable dataset requires to be tested insofar as establishing an acceptable sample size. Berenson and Levine (1999: 383) and Albright *et al.*, (2003: 398) alludes that the sampling error (that influences the reliability of the results obtained from the sample) needs to be minimized as far as possible. Albright *et al.*, (2003:398) acknowledges that in order to minimize sampling error, larger sampling sizes are used. In estimating the arm's length consideration including the arm's length range and the relative position (see 4.4.3) within the range by the CATPM, samples are not used; the entire population of potential comparables companies in accordance with the screening criteria are used.

### 4.4.3 Positioning analysis

The OECD transfer pricing guidelines does not provide any authoritative view on the position of a connected party within the arm's length range (OECD, 1995:I-1-AN-52). The approach followed by SARS for transfer pricing, is the same as any other section of the Act, the burden of proof that vests with the taxpayer (tested party). SARS regards positioning of the tested party within the arm's length to the point in the range that best accounts for the facts and circumstances of the controlled transaction (South Africa, 1999:27). In the absence of any evidence of the positioning of the tested party within the arm's length range, the Commissioner may select the mid-point in the range (South Africa, 1999:27).

*The subjective nature of adjusting to the mid-point in a range substantiates the need to establish an objective approach in determining the position of the tested party within the arm's length range (refer to 1.6.2 for a definition). In order to determine the position within the arm's length range which dually constitutes the arm's length consideration is of value. One of the CATPM (refer to section 1.2 and 4.4 ) fundamental propositions is to enhance the comparability analysis through providing an objective measure based on regression techniques to produce point estimates of the arm's length consideration relative to the inter-quartile range.*

In order to determine the point estimates, weights are obtained from the supply and demand ratios, which are mutually exclusive, and collectively exhaustive ("MECE") (Albright *et al.*, 2003:191 and Berenson and Levine, 1999:197) in estimating profitability. The CATPM (refer to section Appendix 3.1 for a discussion and comprehensive tabulation on the inference of the key equation of the CATPM), defines profitability of the tested party (*i*) as:

- Profitability<sub>*i*</sub> =  $f_i a_i$  (total risks)<sub>*i*</sub>, (9)
- Where  $f_i a_i$  is the function (*f*) performed (manufacturing) and assets (*a*) (property, plant, equipment, inventory) of tested party (*i*) in relation to total risk tested party (*i*) assumed in performing the functions and using the assets.
- The basis on which the arm's length consideration,  $\alpha_i = P_i q_i - C_i$  (see section 4.3.1 where the equation is discussed) is based on identifying comparable unconnected parties through a comparability analysis to determine ( $\alpha_i$ ) as the product of the price ( $P_i$ ) of goods and

services and the quantity ( $q_i$ ) of the goods and services less the cost ( $C_i$ ) of providing the goods and services.

- The value of ( $\alpha_i$ ) is as a result of the market interaction (supply and demand as well as the total risk associated with it) in accordance with the requirements of Paragraph 1 of Article 9 of the OECD Model Tax Convention (OECD, 1995:I-3).

## **4.5 CATPM test**

In order to implement the CATPM and useage in transfer pricing requires testing and application to actual data. For this purpose, the South African company, the tested party's name is omitted with reference to it made as ZA Case 01 and limited financial information is provided, to ensure confidentiality (refer to section 1.4.2.1 for details pertaining to the classification of the research). However, the research methodology used in finding potentially comparable data is disclosed.

### **4.5.1 Comparability Analysis**

In order to test the CATPM, the research is based on adherence to comparability requirements. Hence, the compensation for the transfer of property or services amongst two unconnected parties will usually reflect the functions that each enterprise performs, taking into account the risks assumed and the assets used.

According to South Africa's PN 7, economic theory predicts that when a group of unconnected parties performs various functions, the enterprise that provides most of the effort and, more particularly, the rare or unique functions, and assumes the most risk should earn a greater portion of the profit (South Africa, 1999:10). In determining whether two transactions are comparable, the functions and risks undertaken by the independent parties should be compared to those undertaken by the connected parties. The functions of ZA Case 01 discussed in 5.3.3 are used to determine the comparable dataset to be used in testing the CATPM.

#### **4.5.1.1 Comparable Search**

The entities being viewed as comparable to the tested party were tested on functional comparability (manufacturer), assets used and the risk assumed.

#### 4.5.1.1.1 Industrial Classification

Standard Industrial Classification (“SIC”) codes classify business enterprises by their type of economic activity (see Appendix 2 for a complete list of classifications). Any industrial classification system uses a hierarchical system, dividing economies in sectors and sub-sectors. The system used in Amadeus is comparable to the SIC standard and is referred to as the “*Nomenclature générale des activités économiques dans les communautés Européennes*” (“NACE”) classification.

#### 4.5.1.2 Data source

##### 4.5.1.2.1 South African Source

In South Africa, a database containing South African unconnected party information does not exist. South African public listed entities’ financial information is available. The majority of the entities’ financial information is on a consolidated basis, which makes it unacceptable for transfer pricing purposes. Consolidated financial information results in transactions being netted off, the result of the total transactions are disclosed, the underlying transactions that might include affected transactions are not disclosed. In applying transfer pricing principles, unconsolidated information is used. The lack of a South African data source necessitates the use of a foreign database, as acknowledged by South African PN 7 (South Africa, 1999: 26).

##### 4.5.1.2.2 Bureau van Dijk’s Amadeus Database

Bureau van Dijk’s “*Analyse Major Databases from European Sources*”, commonly referred to as Amadeus Database, contains financial and business information of approximately 1.1 million companies. According to Amadeus’ disclosure on data, to be included on the database for the UK, Germany, France, Italy, Ukraine and Russian Federation, an enterprise must have the following:

- Operating revenue equal to at least € 1.5 million,
- Total assets equal to at least € 3million,
- Number of employees equal to at least 15.

#### 4.5.1.3 Functional Determination - Screening Criteria

Two screening criteria is applied in undertaking a comparable search of the data, the first being quantitative screening and the second being qualitative screening (not undertaken in the test of the

CATPM, due to its subjective nature). Quantitative screening use ratios or thresholds to find companies that are similar to the tested party (thresholds are determined by the functional analysis).

The July 2005 version, update 130 of the Amadeus database, was used for the comparable search.

#### 4.5.1.4 Quantitative screening

##### 4.5.1.4.1 Geographic Region

Market conditions vary greatly amongst countries and country specific factors can influence profitability. Bearing this in mind the search concentrated on a common geographic area such as the European Union. There were 1.118 million companies identified and the results from this step can be summarised as follow:

*Table 15: Screening Results – Geographic Region*

STEP	Search Criteria	Value of criteria	Step Result	Search Result
1	Countries	European Union	1 118 824	1 118 824

*(Source: own compilation)*

##### 4.5.1.4.2 Independence

Related companies cannot be used in a comparable set due tot the fact that they might have transfer pricing issues of their own. The Amadeus database consists of 1.152 million companies that do not have subsidiaries with 883 090 of the companies in the European Union. Independent / dependent companies according to the search criteria (A+, A, A-) of companies with no shareholders recorded with more than 24,9% direct or total ownership as well as unknown ownership (U) resulted in 666 245 possible companies with only 407 585 companies being in the EU and not having any subsidiaries with the result from these steps as follow:

*Table 16: Screening Results – Independence*

STEP	Search Criteria	Value of criteria	Step Result	Search Result
2	No of subsidiaries	None	1 152 540	883 090
3	Independent / Dependent Co.'s.	A+, A, A-,U	666 245	407 585

*(Source: own compilation)*

Access to intangible assets such as know-how, patents and trade marks may provide the owner of such intangibles the potential to earn profits in excess to that of a similar company, operating in the same industry without the intangibles. This clearly poses a problem and might inflate the results if screening is not done to exclude companies with intangible assets. In applying this screen, 319 765 companies on the database do not have intangible fixed assets with 78 318 of the

companies being in the EU, do not have subsidiaries and conforms to the independence/dependence screen as follows:

*Table 17: Screening Results – Intangible Assets*

STEP	Search Criteria	Value of criteria	Step Result	Search Result
4	Intangible Fixed Assets	2001, 2000, 1999, 1998 Max = 0 for all years	319 765	78 318

*(Source: own compilation)*

#### 4.5.1.4.3 Industrial classification

By using industrial classification as search criteria, companies are selected on the grounds of their respective industry classification, an indication of relative comparability. The industry classification codes being used is the NACE Rev. 1.1, code 341 Manufacture of motor vehicles, 342 Manufacture of bodies (coachwork) for motor vehicles, manufacture of trailers and semi-trailers. The result from this abovementioned step is as follow:

*Table 18: Screening Results – Industrial classification*

STEP	Search Criteria	Value of criteria	Step Result	Search Result
5	NACE Rev. 1.1	Primary code: 341 Manufacture of motor vehicles, 342 Manufacture of bodies (coachwork) for motor vehicles, manufacture of trailers and semi-trailers.	2 712	100

*(Source: own compilation)*

#### 4.5.1.4.4 Financial items

In order to find companies that are similar in size, a qualitative screen based on turnover was applied. Companies with a turnover more than € 140 million were accepted. The reason why this screen is applied is to maximise the potential that potentially comparable companies that might benefit from economies of scale are included in the comparable search.

Further cognisance is taken of the turnover growth of the tested party (ZA Case 01) over the years under consideration, hence the minimum screen. The results from these steps can be summarised as follow:

*Table 19: Screening Results – Financial Item*

STEP	Search Criteria	Value of criteria	Step Result	Search Result
6	Operating revenue / turnover (th Euro)	Last available year Max=140 000	1 054 392	81

*(Source: own compilation)*

In applying this screen, 1 054 392 companies in the Amadeus database satisfy the operating revenue criteria with 81 companies being in the EU, do not have subsidiaries, conforms to the independence / dependence screen and do not have intangible fixed assets.

Lastly, (step 7) a screen was applied in terms of the trade descriptions as disclosed on Amadeus. The screening text criteria used was “BUS! or BUSES! or COACH! or COACHBUILDERS! or COACHBUILDING! or COACHES! or COACHWORK! or LORRY, or LORRIES, or TRUCK, or TRUCKING or TRUCKS”. In applying this screen, 6 606 companies in the Amadeus database satisfy the trade description text screen with 66 companies being in the EU that do not have subsidiaries, conform to the independence / dependence screen, do not have intangible fixed assets and conforms with the operating revenue criteria. The search yielded 66 comparable companies providing data for 2002. Over the period 1998 to 2002, 197 observations provided financial information.

#### **4.5.2 CATPM Modelling**

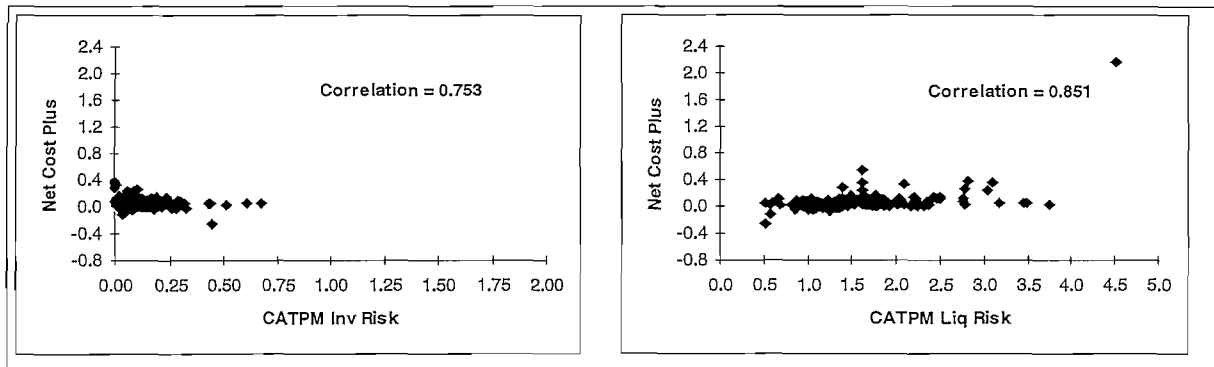
The data obtained from Amadeus database is used in the determination of the arm’s length consideration, following the CATPM approach (see 4.4.2). Prior to any further analysis, scatter plots of the data are drawn with the scatter plots of net-cost-plus (NCP) as profit level indicator and four factors of the CATPM, financial leverage, receivables, inventory and liquidity as illustrated in Figure 26. The following observations with reference to the comparability analysis and scatter plots illustrated in Figure 26 are noteworthy:

- Financial data of the comparable companies of 1998 to 2002 is used to minimise the effect of business cycles and cyclical trends in the data. (The use of multiple year data is the accepted norm according to the OECD (1995:I-20))
- Scatter plots for all the variables under consideration for the CATPM do not indicate non-linear relationship
- The scatter plots illustrated in Figure 26 indicates a high correlation amongst NCP and inventory as well as NCP and liquidity
- Outliers (observations that lie outside the general pattern of points on the scatter plot) are present and were not omitted from the data. Albright *et al.*, (2003:557-558) do not provide

any significant approach to follow in the case with outliers. The following was considered in not excluding the outliers in the analysis:

- It noted that in the case when an outlier is not clearly a member of the population of interest, it is best to exclude it. The population's determination is based on various factors under the comparability analysis. Hence, outliers can only be excluded based on being outliers, which is unacceptable seen in the light that the CATPM attempts to limit subjectivity in the analysis.
- The number of outliers is very small considering the number of observations; hence, it is unlikely that the outliers could significantly influence the results.
- The output from the CATPM is reported with the outliers included.

Figure 26: Scatter plots NCP, inventory and liquidity



(Source: own compilation)

Although all seven variables are theoretically essential to the CATPM (see Appendix 4.5 for all the scatter plots), removing one or several can reduce or eliminate multicollinearity (nearly a linear relationship among a set of explanatory variables (Albright *et al.*, 2003:635)) while maintaining the MECE requirement. In order to achieve the elimination of multicollinearity whilst maintaining the MECE, a correlation matrix for the seven variables and the three profit level indicators (Pli's) was calculated as illustrated in Table 20.

Table 20: Correlation Matrix CATPM factors 1998 to 2002

	CATPM Inv Risk	CATPM Rec Risk	CATPM Liq Risk	CATPM Activity Risk	CATPM Sol Risk	CATPM Fin Lev	CATPM Tax Lev
CATPM Inv Risk	1.000						
CATPM Rec Risk	-0.056	1.000					
CATPM Liq Risk	0.522	0.073	1.000				
CATPM Activity Risk	-0.348	-0.129	-0.162	1.000			
CATPM Sol Risk	-0.003	-0.023	-0.009	-0.097	1.000		
CATPM Fin Lev	0.015	0.039	0.157	-0.020	0.067	1.000	
CATPM Tax Lev	0.009	-0.021	-0.029	-0.111	-0.004	-0.135	1.000

(Source: own compilation)

The correlation matrix indicates that liquidity and inventory are somewhat correlated; the coefficient of correlation is 0.522 which means that one of the two factors could be excluded from the regression. There is no established threshold for elimination or no rule for determining which one of the pair should be eliminated, therefore for the purposes of this regression both are accepted.

Hence, the empirical MECE ratios are inventory risk, receivable risk, liquidity risk, activity risk, solvency risk, financial leverage and tax leverage as defined in the following regression formula.

$$\alpha_i = a + \beta_1 \frac{Inv}{Sales} + \beta_2 \frac{Rec}{Inv} + \beta_3 \frac{CA}{CL} + \beta_4 \frac{Sales}{TA} + \beta_5 \frac{Debt}{Capital} + \beta_6 \frac{EBT}{EBIT} + \beta_7 \frac{NP}{EBT} + \varepsilon \quad (10)$$

The regression aims to predict Y, profitability = Net-cost-plus and EBIT margin, from a set of X variables (the CATPM factors), which are the empirical mutually exclusive and collectively exhaustive (“MECE”) factors (risks) and leverages. In order to decide which of the variables should be included in the model, a stepwise regression was performed. Refer to Appendix 4.3 for a stepwise regression for Net-cost-plus for the period 1998 to 2002. The final model of the stepwise regression for Net-cost-plus is illustrated in Table 21.

Table 21: CATPM Net-cost-plus regression

Multiple R	0.933103276							
R Square	0.870681723							
Adjusted R Square	0.865892158							
Standard Error	0.129807592							
Observations	197							
ANOVA								
		<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>		
Regression		7	21.441813	3.0631162	181.78719	2.188E-80		
Residual		189	3.1846521	0.01685				
Total		196	24.626466					
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-0.19676069	0.0354138	-5.556043	9.279E-08	-0.26661776	-0.12690	-0.26661	-0.126903
CATPM Inv Risk	0.138581868	0.010719	12.92864	8.341E-28	0.11743766	0.159726	0.117437	0.159726
CATPM Rec Risk	0.000760639	0.0002693	2.8245934	0.0052421	0.00022943	0.001292	0.000229	0.001291
CATPM Liq Risk	0.194147327	0.0095393	20.352343	1.639E-49	0.17533014	0.212965	0.175330	0.212964
CATPM Fin Lev	-0.07309953	0.0201062	-3.635678	0.0003574	-0.11276083	-0.03344	-0.112760	-0.03343

(Source: own compilation)

#### 4.5.2.1 Interpretation of multiple regression results

The outputs to be considered are highlighted in Table 21. R Square, ( $R^2$ ), the coefficient of determination is a measure of goodness of linear fit (Berenson and Levine, 1999:749).  $R^2$  always has a value between 0 and 1 and the coefficient of determination can be interpreted as the fraction of variation of the response variable (Net-cost-plus (NCP)) explained by the regression line (as defined by the CATPM factors) (Albright *et al.*, 2003: 571).

The coefficient of determination,  $R^2$ , in Table 21 indicates that inventory, receivable, liquidity factors and financial leverage explain 87% of variation in NCP (refer to Appendix 4.3 where the stepwise regression is presented). Alternatively, only 13% of the variation of NCP is not explained by the CATPM, in particular the inventory, receivable, liquidity and financial leverage factors.

The standard error of estimate, as provided in the regression output in Table 21, is the standard deviation (is a measure of variation, how values fluctuate around the mean or average) around the line of regression (Berenson and Levine, 1999: 749) The standard error of estimate is equal to 0.1298. Generally, the standard error of estimate indicates the level of accuracy of the predictions made from the regression equation. The smaller the value, the more accurate predictions ought to be (Albright *et al.*, 2003: 570). The standard error of estimate of 0.1298 of the regression in Table 21 indicates the typical error likely when the fitted value (CATPM factors) based on the regression line to predict or estimate NCP. In order to determine the acceptability of the accuracy and the expected error, a comparison with the standard deviation of the factors under consideration is made.

Table 22: Summary Statistics for CATPM factors

<i>Summary measures for selected variables</i>					
	Net-cost-plus	CATPM Inv Risk	CATPM Rec Risk	CATPM Liq Risk	CATPM Fin Lev
Count	197.000	197.000	197.000	197.000	197.000
Mean	0.087	0.275	8.527	1.601	0.925
Median	0.037	0.106	1.525	1.365	0.956
<b>Standard deviation</b>	<b>0.354</b>	1.086	35.265	1.167	0.474
First quartile	0.020	0.055	0.797	1.087	0.747
Third quartile	0.076	0.175	3.557	1.775	1.017
Interquartile range	0.055	0.121	2.760	0.689	0.270

(Source: own compilation)

In analysing the test for overall fit, the ANOVA table illustrated in Table 21 are considered. The R square value is acceptable (value of 0.8706); the standard error of estimate of 0.1298 is significantly smaller than the standard deviation of the NCP of 0.354. Furthermore, the  $F$ -ratio 181.78 is high (if it is large, then the explained variation is large relative to the unexplained variation, thus it has explanatory value) and its significance  $F$  (P-value) test is very small 2.188<sup>-80</sup>. According to Albright *et al* (2003:632) if the P-value is less than 0.05 in combination with a large  $F$ -ratio, then the explanatory variables such as inventory, receivable, liquidity and financial leverage has some explanatory power of NCP.

Another consideration about the regression output is  $t$ - values. The  $t$ -values for the regression coefficients indicates which of the potential explanatory variables (CATPM factors) are useful in explaining NCP, the response variable. A  $t$ -value measures the ratio of estimated coefficient to its standard error, it is an indicator of how many standard errors the regression coefficient is from 0 (Albright *et al.*, 2003:632). A  $t$ - value can be used to determine if any particular explanatory

variable of the CATPM should be included in the CATPM regression equation. In the event that an explanatory variable's coefficient equals 0, it is pointless to include such a variable in the CATPM equation, *the 0 coefficient will cancel its effect on the response variable, NCP*. Table 21 does not indicate a *t*-value of 0 for any of the explanatory variables, hence none of them are excluded from the CATPM equation (refer to section 4.4.2 for a discussion)  $\alpha_i = a + \beta_1 \frac{Inv}{Sales} + \beta_2 \frac{Rec}{Inv} + \beta_3 \frac{CA}{CL} + \beta_4 \frac{Sales}{TA} + \beta_5 \frac{Debt}{Capital} + \beta_6 \frac{EBT}{EBIT} + \beta_7 \frac{NP}{EBT} + \varepsilon$ . (11)

In analysing and interpreting, the results obtained from the CATPM, and in particular, the regression, the following emerges:

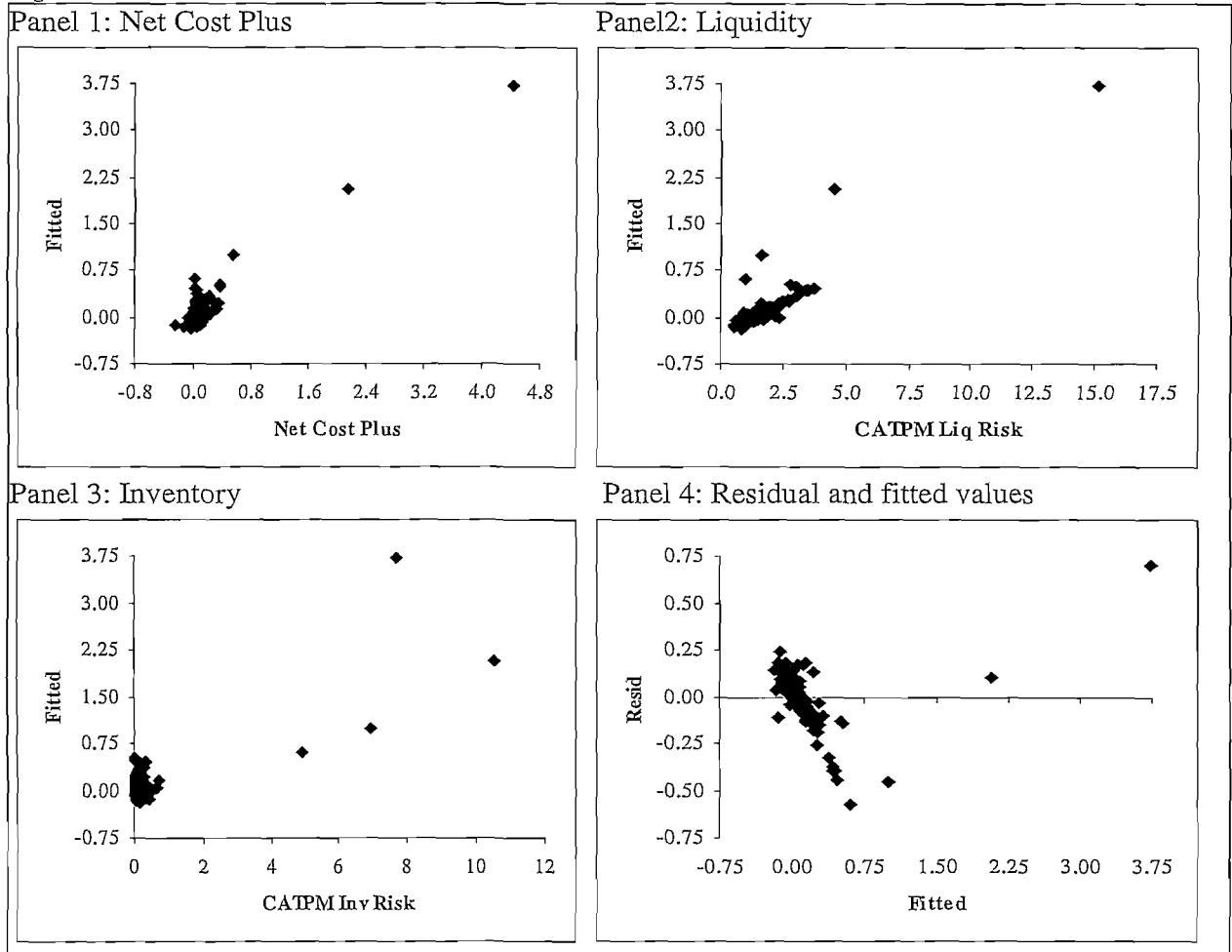
- Inventory, receivables, liquidity and financial leverage is significant explanatory variables in estimating the response variable (NCP)
- The estimation of the response variable the coefficient of determination,  $R^2$  explains 87% of variation in NCP
- The ANOVA table illustrated in Table 21 indicates a high *F*-ratio of 181.78 (if it is large, then the explained variation is large relative to the unexplained variation, thus it has explanatory value) and its significance *F* (P-value) being very small 2.188<sup>-80</sup>. The explanatory variables with a P-value less than 0.05 in combination with a large *F*-ratio, then the explanatory variables such as inventory, receivable, liquidity and financial leverage has some explanatory power of NCP (Albright *et al.*, 2003:632).
- The regression analysis indicates that in using the coefficients determined with the CATPM that the arm's length consideration  $\alpha_i$  can be formulated as

$$\hat{\alpha}^i = -0.197 + 0.13858 \frac{Inv}{Sales} + 0.0076 \frac{Rec}{Inv} + 0.194147 \frac{CA}{CL} - 0.0731 \frac{EBT}{EBIT} \quad (12)$$

The fitted pattern of the data, in particular the CATPM factors (MECE ratios), inventory and liquidity and the profit level indicator, Net-cost-plus (NCP) as well as the residual (the difference amongst the actual and fitted value of the response variable) and fitted values (a fitted value is the predicted value of a response variable) is illustrated in Figure 27. In Figure 27, Panel 4 where the residual and the fitted values are illustrated, it seems that a reasonably good fit is achieved with majority of the residuals being between 0.25 and -0.25 and fitted values between 0 and 0.75 with

some outliers being indicated by points outside the majority of the residuals and fitted values as discussed.

Figure 27: Fitted values



(Source: own compilation)

#### 4.5.2.2 Application of the CATPM regression output

In order to determine the arm's length consideration  $\alpha_i$  the multiple regression of the CATPM

formulated the arm's length consideration as  $\alpha_i = a + \beta_1 \frac{Inv}{Sales} + \beta_2 \frac{Rec}{Inv} + \beta_3 \frac{CA}{CL} + \beta_4 \frac{EBT}{EBIT} + \varepsilon$  or

$$\hat{\alpha}^i = -0.197 + 0.13858 \frac{Inv}{Sales} + 0.0076 \frac{Rec}{Inv} + 0.194147 \frac{CA}{CL} - 0.0731 \frac{EBT}{EBIT}$$

with the the explanatory variables inventory, receivable, liquidity and financial leverage being the factors to estimate the arm's length consideration. In order to estimate the arm's length consideration, the following approach is followed:

- Determine the explanatory variables (CATPM factors or risk indicators) for the tested party.
- Use the estimated significant weights or coefficients determined by the regression analysis (inventory, receivables, activity and financial leverage) to estimate the arm's length consideration. The arm's length consideration is in accordance with OECD Model Tax Convention "...conditions are made or imposed amongst... two [associated] enterprises in their commercial or financial relations ... which would have been made amongst independent enterprises (unconnected parties) ..." (OECD 1995:I-3).
- The basis of the estimation of the NCP arm's length consideration is the sum of the product of the estimated significant weights and the tested party's explanatory variables. The explanatory variables are only the ones indicated as significant (inventory, receivables, liquidity and financial leverage) by the multiple regression, including that of the intercept, as indicated in Table 23.

Table 23: CATPM Result

Regression NCP for the period 1998 to 2002						
Estimation of the Arm's length consideration (Indicate physical calculations as point of application)	Tested Party			Hypothetical Median Company		
	Tested Party Ratio's (Median)	Regression Output Coefficients or weights	Weights x Tested Ratio's	Median Ratio's	Regression Output Coefficients or weights	Weights x Median Ratio's
Intercept	1.000	-0.1968	-0.1968	1.0000	-0.1968	-0.1968
Inventory Risk	0.384	0.1386	0.0532	0.1062	0.1386	0.0147
Receivable Risk	0.596	0.0008	0.0005	1.5253	0.0008	0.0012
Liquidity Risk	1.115	0.1941	0.2165	1.3651	0.1941	0.2650
Financial Leverage	-0.114	-0.0731	0.0083	0.9560	-0.0731	-0.0699
<b>Sum</b>			<b>8.17%</b>			<b>1.43%</b>
<b>Difference amongst Tested Party and Comparable Data</b>						<b>6.74%</b>
<b>Tested Party Profit Level Indicator</b>			<b>2.40%</b>			<b>2.40%</b>
<b>Variance Premium (Discount)</b>			<b>-5.77%</b>			<b>0.97%</b>

(Source: own compilation)

The tested party's, ZA Case 01, financial information in terms of the CATPM equation is provided in the part of Table 23 marked Tested Party. The coefficients of the explanatory variables that provide an R square of 0.87 is provided (refer to Table 21 for the regression output). For instance, inventory risk for the tested party have a value of 0.384 and the coefficient as determined by the regression analysis is 0.1386, resulting in a CATPM factor of 0.0532. The sum of all these

CATPM factors is 8.17%. According to the proposition of the CATPM, it is *estimated* that ZA Case 01 *arm's length consideration, as measured by NCP, amounts to 8.17% in the EU*, based on its explanatory variables (inventory with a value of 0.384, receivable with a value of 0.596 etc). In *contrast* to the output of the CATPM, *the tested party (ZA Case 01) realised a NCP of 2.4%*, clearly not indicative of what the estimation of the arm's length consideration purport to be.

Positioning analysis concerning the output from the CATPM is significant. The South African PN (South Africa, 1999:27) reiterates that in the event an adjustment is made (when the tested party falls outside the arm's length range), the midpoint is appropriate. This research, in the context of ZA Case 01 indicates that the arm's length NCP consideration is higher than the median or mid-point.

The median arm's length consideration, according to the CATPM is 1.43%, considerably lower (6.74%) than 8.17% (the estimated NCP). The position of ZA Case 01 within the arm's length range is closer to the third quartile of the arm's length range (refer to Appendix 4.5 where the third quartile is included in the analysis) and not the mid-point or median of the arm's length range.

## 4.6 Conclusion

The CATPM provides guidance insofar as explanatory variables in determination or estimation of the arm's length range. Positioning analysis in conjunction with the CATPM results, indicates the position of the tested party within the arm's length range. In the event that an adjustment is made, the point in the range to where the adjustment will be affected can be determined with objectivity, an improvement on adjustments to the mid-point of a range, without any substantive measures or evidence.

In general, it could be concluded that the arm's length consideration for ZA Case 01, as expressed by the NCP as the Pli in applying the TNMM to be 8.17 per cent for the financial years 1998 through to 2002. The conclusion on the arm's length nature of ZA Case 01 dealings is within the ambit of the following conclusive observations:

- A considerable amount of financial data is required to calculate the hypothetical arm's length consideration.

- The CATPM imposes the tested party as if it is operating within the EU, based on ZA Case 01 financial data and the explanatory variables of the regression. ZA Case 01 explanatory variables are based on the interaction of the South African market and the effect it has on ZA Case 01. Imposing ZA Case 01 explanatory variables in accordance with the CATPM equation  $\alpha_i = a + \beta_1 \frac{Inv}{Sales} + \beta_2 \frac{Rec}{Inv} + \beta_3 \frac{CA}{CL} + \beta_4 \frac{EBT}{EBIT} + \varepsilon$ , derived from the regression, an arm's length consideration is determined.
- Market differences amongst the EU and South Africa exist and as such require adjustment (comparability requirements). In making use of the CATPM, the estimated arm's length consideration for ZA CASE 01, in the EU is 8.17%, which includes market forces in South Africa. The explanatory variables in ZA Case 01 is supply driven (liquidity and financial leverage) and demand driven (inventory and receivables) as well.

The CATPM provides insight into what could be deemed to be the arm's length consideration in the EU as well as the relative position of ZA Case 01 within the inter-quartile range. Testing the CATPM provided some insight into the factors that influences profitability and consequently the determination of the arm's length consideration. The proposed CATPM should be considered in accordance with current transfer pricing practices; hence, a similar approach is followed in analysing ZA Case 01 in the next Chapter.

# Chapter 5      The arm's length consideration: An empirical application in the SA automotive industry

## 5.1 Introduction

This empirical part of the research is based on an actual transfer pricing investigation and the information pertaining to the case is presented in a form to protect the identity of the specific company (see 1.4.2.2). Complete financial statement information is not disclosed to ensure anonymity of the specific MNE, referred to as ZA Case 01. However, information to illustrate the application of transfer pricing is included.

Presentation of the findings is in accordance with accepted international practice as it pertains to the Guidelines of the OECD (1995:I-9) and South Africa's PN 7 (South Africa, 1999:28,37). The chapter follows the approach as promulgated by PN 7 whereby the transfer pricing evaluation focuses on the following (South Africa, 1999:12):

- An overview of the organisation inclusive of the overall structure and nature of the business activities (functions) undertaken by the MNE.
- General commercial and industry conditions affecting the MNE as well as an evaluation and explanation of the current business environment in which the MNE operates.
- Direct consideration of the transaction under review, the nature and terms of the transaction, economic conditions and property involved in the transaction, how the product or service that is the subject of the controlled transaction in question flows between the connected parties
- Contractual terms of the transaction(s) of the MNE. The actual contractual terms provide evidence about the form in which the responsibilities, risks and benefits have been assigned among those members of the MNE participating in the transaction.
- The functions performed by the MNE. The relative contributions of various functions recognising that the number of functions performed by a particular member of an MNE is not decisive in determining whether that member should derive the greater share of the

profit. The importance of each function that is relevant in the determination of reward or profit.

- An appraisal of risk associated with the functions performed by the MNE. In the open market, the assumption of increased risk is rewarded by an increase in the expected return (South Africa 1999:18).

The business overview and analysis of ZA Case 01 is followed by the determination of the arm's length consideration. The process of determining the arm's length consideration involves a comparability analysis and a country risk adjustment. The analysis is further complimented by making use of the CATPM to determine the arm's length consideration. The results from both these approaches are considered.

## **5.2 Industry overview: Company ZA Case 01**

In order to obtain a reasonable understanding of the operations of the companies used in this research in terms of applying the provisions of section 31 of the Act, the investigation relied on information gathered by means of the following:

- Interviews with various personnel within the group of companies
- Industry information as published by National Association of Automobile Manufacturers of South Africa (NAAMSA)
- Statistics as published by Statistics South Africa (Stats SA) and media reports.
- The focus of the business overview is on the South African industry and the particular company's position within the industry.

### **5.2.1 General market overview**

South African vehicle manufacturers do not report production data, only retail and export sales. NAAMSA uses sales of domestically produced vehicles and export sales as a proxy for South African vehicle production (NAAMSA, 2001:4). Table 24 summarises domestic production, exports and imports for the period 1995 – 2001.

*Table 24: Domestic production, exports and imports of SA motor vehicles (Units)*

	1995	1996	1997	1998	1999	2000	2001
Sales of domestically produced vehicles	373 712	374 758	342 535	286 159	266 349	289 333	299 035
Exports	15 764	11 553	19 569	25 896	59 716	68 031	108 001
Total domestic production	389 476	386 311	362 104	312 055	326 065	357 364	407 036
Exports as percentage of domestic production	4,0%	3,0%	5,4%	8,3%	18,3%	19,0%	26,5%
Imports	22 081	46 318	56 740	65 351	59 426	66 749	85 064
Total local market (including imports)	395 793	421 076	399 275	351 510	325 775	356 082	384 099
Imports as percentage of local market	5,5%	11,0%	14,2%	18,6%	18,2%	18,7%	22,1%

(Source: NAAMSA, 2001: 6. Note: Domestically produced vehicles include cars, light, medium and heavy commercials)

During 2001, exports of vehicles significantly exceeded built-up imports and total industry production increased commensurately. Global automotive production declined by 3.5% in 2001 to a level of 56.3 million units. Conversely, the South African total automotive production in 2001 expanded by 13.9% enabling the South Africa vehicle manufacturing industry to achieve to being ranked 18<sup>th</sup> in the world albeit that the share in global production is minuscule, it comprises less than 1%.

Over the period under consideration, imports as a per cent of the total South African market increased from 5.5% in 1995 to 22.1% in 2001. The significance fact is that exports as a per cent of domestic production increased considerably, albeit from a low base. These statistics provides further evidence of globalisation and South Africa becoming increasingly part thereof and the accompanying transfer pricing implications as discussed in the previous sections of this research.

## **5.2.2 Commercial vehicle sales**

Demand-pull of the domestic market on commercial vehicles (the specific focus of this research) is driven by the general economic climate, estimated age of the current vehicle fleet and the road infrastructure. Furthermore, seen in light of this empirical investigation for transfer pricing purposes, commercial vehicle sales within the South African market is important.

### **5.2.2.1 Some factors influencing commercial vehicle demand**

Vehicle sales are not independent of demand factors. The factors that could potentially have an impact on commercial vehicle sales, such as road infrastructure and vehicle age distribution are further investigated with specific reference to:

- Road infrastructure influences ZA Case 01 insofar as availability of service and maintenance as well as vehicle replacement due to the extensive distances the vehicles travel in a relatively short period.
- Vehicle age is indicative of the potential demand for new vehicles if ZA Case 01 customers experiences favourable economic conditions. Although specific data on ZA Case 01 customers is not available, ZA Case 01 general sales trend provides an indication.
- Third parties do not undertake research on road infrastructure and vehicle age. Verification is difficult and the information from the Department of Transport is often delayed. Hence, reliance is placed on the information as published by NAAMSA (2001:32).

#### 5.2.2.1.1 Road infrastructure

South Africa is a country with an extensive road infrastructure with approximately 80% of the infrastructure being unpaved roads as illustrated in Table 25.

*Table 25: Road infrastructure in the South African Economy*

Year	Freeways (km million)	Paved (km million)	Unpaved (km million)	National Roads Agency (including toll roads) (km million)	Total (km million)
1980	1,280	45,372	136,990	1,762	185,404
1985	1,666	49,046	133,106	2,558	186,376
1990	1,893	53,490	130,368	6,593	192,344
1995	1,927	59,753	298,843	6,815	367,338
1999 (latest)	2,032	61,121	300,978	7,722	371,853

*(Source: NAAMSA, 2001: 31)*

From Table 25 road infrastructure expanded considerably since 1980 with the National Roads Agency roads increasing nearly seven fold and unpaved roads nearly threefold. This rapid expansion of infrastructure is indicative of the economic expansion South Africa experienced since 1980. The condition of the road infrastructure has a bearing on the demand for spares and maintenance services as well as having an effect on the economically viable life span of the country's automotive fleet.

These statistics is important insofar as it is indicative of the infrastructure network and the status thereof. These statistics is important for ZA Case 01. ZA Case 01 is predominantly active in the commercial vehicle segment with a substantial intercity transport application. Due to the vast distances being travelled, support and maintenance of the vehicles ZA Case 01 supplies is of strategic importance and support their sales strategy (business strategy) .

### 5.2.2.2 Motor vehicle age distribution

Estimates by NAAMSA of South Africa's motor vehicle age distribution for 2000 are as follows (NAAMSA, 2001: 29):

Table 26: Median age of SA motor vehicles

Age in years : Less than											
	1	2	3	4	5	6	7	8	9	10	More than 10
Motor vehicles*	227	430	647	891	1,134	1,353	1,520	1,685	1,837	1,997	1,920
Per Cent <sup>#</sup>	5.8%	11.0%	16.5%	22.7%	28.9%	34.5%	38.8%	43.0%	46.9%	51.0%	49.0%
Commercial vehicles*	112	212,5	316	430	555	675	767	850	929	1,015	1,392
Per Cent <sup>#</sup>	4.5%	8.8%	13.1%	17.8%	23.1%	28.1%	31.9%	35.3%	38.6%	42.2%	57.8%

Note : \* Represent thousand of vehicles ('000) <sup>#</sup> Expressed as a per cent of 2000 estimated vehicle population

Source: NAAMSA (2001: 29)

From the table it is clear that the median age for South African motor vehicles is amongst 9 and 10 years, whereas for commercial vehicles, our focus, it is more than 10 years. However, in the absence of the same statistics for previous years, the only conclusion that can be drawn is that the median motor vehicle and commercial fleet age is relatively old and that recapitalisation sales could be expected in the future.

The sales trends will largely be driven by other factors such as GDP growth rates, new entrants in the market, interest rates, exchange rates, tenders and general business conditions. ZA Case 01 expects vehicle demand to increase in a favourable economic climate with potential replacement strategies of their major customers fuelling further demand growth.

### 5.2.2.3 Commercial vehicle sales

This transfer pricing investigation is aimed at the medium and heavy commercial vehicle segment of the automotive industry and the sales volumes being investigated reflects it. The sales information in this section is based on NAAMSA (2001:11) information distributed to its members.

Table 27 Different categories of vehicle sales

Medium and Heavy Commercial Vehicles (HCV)	1995	1996	1997	1998	1999	2000	2001	2002	2003
NAAMSA Members Sales Exports	11432	13685	121111	11748	10788	11679	12456	13582	14600
Imports (Non-NAAMSA)	950	1050	1000	1300	1500	550	630	630	630
Total Medium Commercial Vehicle ("MCV") /HCV Market	12753	14617	13759	12811	11736	12275	13323	14335	14630
Market per cent change		14.62%	-5.87%	-6.89%	-8.39%	4.59%	8.54%	7.60%	2.06%

(Source: NAAMSA, 2001: 11)

The medium and heavy commercial vehicle market experienced considerable contraction from 1997 to 1999, as illustrated in Table 27 and it collaborates with the contraction trend evident in the industry employment statistics (see Table 28 and Table 29). Considerable expansion since 2000 were experienced with total commercial vehicle market estimate for 2003 at 14 630 units, the highest since 1996 (NAAMSA, 2001:11).

### 5.2.3 Industry Employment

The Automotive Industry's employment statistics are not indicative of a growing economy, which can be characterised by sustainable labour absorption, although South Africa experience jobless growth due to technology driven growth, the latest globalisation wave, as illustrated in Table 28.

Table 28: Past decade's employment in vehicle manufacturing

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
January	38 234	37 539	36 905	37 546	39 121	37 836	35 251	31 656	32 339	33 164
February	38 141	37 076	36 846	37 532	39 227	37 782	34 738	31 705	31 105	33 156
March	39 345	36 935	36 862	37 635	39 300	37 580	34 647	32 064	31 121	33 015
April	39 198	37 723	37 294	38 314	38 774	37 524	33 989	31 998	31 137	32 704
May	39 406	37 120	37 154	38 766	38 681	37 389	33 885	31 868	32 233	32 849
June	39 785	37 117	37 378	38 637	38 791	37 091	33 619	31 958	32 239	32 698
July	39 104	36 886	37 347	38 997	38 795	37 412	33 333	32 047	32 789	32 474
August	38 635	36 852	37 583	39 063	38 759	37 142	33 269	32 101	32 826	32 449
September	38 470	36 863	37 914	39 059	38 549	36 939	33 247	32 177	33 162	32 488
October	38 396	37 179	38 024	39 307	38 009	36 457	32 909	32 132	32 809	32 485
November	38 232	37 328	38 333	39 332	37 717	35 976	32 886	32 061	32 848	32 436
December	37 830	37 308	38 222	39 152	37 566	35 855	32 129	32 111	32 751	32 389
<b>Monthly Average per Annum</b>	<b>38 731</b>	<b>37 160</b>	<b>37 489</b>	<b>38 612</b>	<b>38 607</b>	<b>37 082</b>	<b>33 658</b>	<b>31 990</b>	<b>32 280</b>	<b>32 692</b>

(Source: NAAMSA 2001: 11)

Employment statistics in Table 28 indicates gradual employment losses with employment in 1992 being 38 731 shrinking to 32 692 in 2001. Over the period 1996 to 2001, the period the research

investigated transfer pricing, employment declined from 38 607 in 1996 to 32 692 in 2001, a loss of 15 per cent.

The Automotive Industry underwent considerable structural changes since South Africa's re-emergence in the international market in 1994, employment remained stable with employment ranging between 37 000 and 38 000 between 1994 and 1997. Since 1997 approximately 5 000 jobs were lost in the automotive assembly industry (see Table 28). The component industry experienced severe job losses, losing 30 500 jobs from 1996 to 2001, shrinkage of 34.3 per cent as illustrated in Table 29:

*Table 29: Annual Employment in the Automotive Industries*

	1995	1996	1997	1998	1999	2000	2001
Assembly Industry	38 600	38 600	37 100	33 700	32 000	32 300	32 700
Component Industry	81 000	89 000	78 000	70 000	60 000	59 500	58 500
Tyre Industry	11 000	10 000	9 500	9 100	9 000	8 600	8 500
Motor Trade	178 000	180 000	180 000	170 000	175 000	175 000	180 000
<b>Total</b>	<b>308 600</b>	<b>317 600</b>	<b>304 600</b>	<b>282 800</b>	<b>276 000</b>	<b>275 400</b>	<b>279 700</b>

*(Source: NAAMSA, 2001:7)*

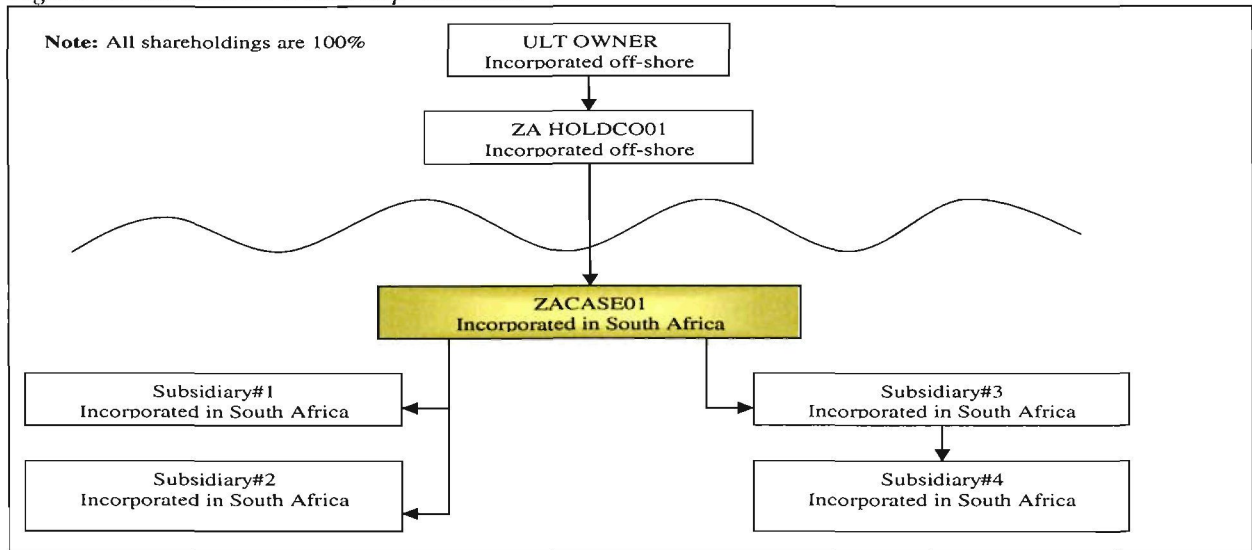
The industry's employment statistics is based on monthly average employment statistics annually and the average annual employment according to the major sectors are illustrated in Table 29. The motor trade is the only sub-sector in the automotive industry that reported stable employment.

The automotive industry's net employment decreased by 28 900 since 1995. However, since 1999 the industry created 3 700 employment opportunities. For the year 2001 as a whole, the new vehicle manufacturing industry reflected net employment creation, usually attributed to strong demand growth. The average monthly employment level for the vehicle manufacturing industry for 2001 was 32 700 compared to 32 300 jobs in 2000.

### **5.3 A brief company overview**

ZA Case 01 started operating in South Africa in the early seventies when the now holding company, ZA HOLDCO01 took over local distributors, establishing ZA Case 01, a wholly owned subsidiary, with an investment in a manufacturing facility situated in South Africa as illustrated in Figure 28. This dedicated plant assembles ZA Case 01 products to specifications set by ZA HOLDCO01 as illustrated in Figure 28 and Figure 31.

Figure 28: ZA Case 01 Ownership Structure



(Source: own compilation)

ZA Case 01 is incorporated in South Africa with a holding company incorporated offshore. ZA Case 01’s relationship with ZA Hold Co 01 and Ult Owner is that of a connected person (see 1.6.8) and falls within the scope of section 31 of the Act (see 1.6.29) with controlled transactions as defined (see 1.6.9) and illustrated in more detail in Figure 31. ZA CASE 01 supply vehicles to the government, quasi-government organisations and the retail market and since 1997 following a re-organisation, concentrates on the retail market.

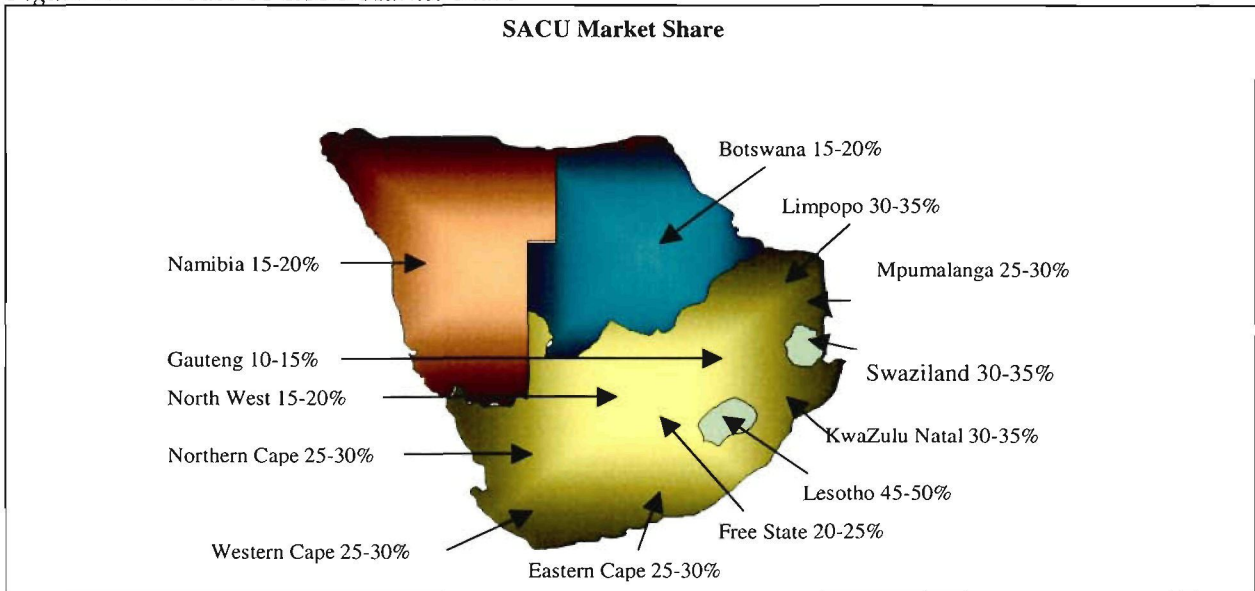
### 5.3.1 Product expansion

In 1996, ZA Case 01 launched new products into a South African competitive niche market. This was followed in 1998 and 2000 with the launch of a range of new products. ZA Case 01 acquired a domestic competitor in 1999 and renamed it to Subsidiary#4 (see Figure 28). Retail outlets were established in major centres during 2001 and record sales results were achieved in July 2002 when ZA Case 01 achieved a market share in excess of 30 per cent in the niche market in which they operate.

### 5.3.2 ZA CASE 01’s market performance

ZA Case 01 is one of the major players in the South African Customs Union (SACU) as illustrated in Figure 29.

Figure 29: ZA Case 01 SACU Market Share

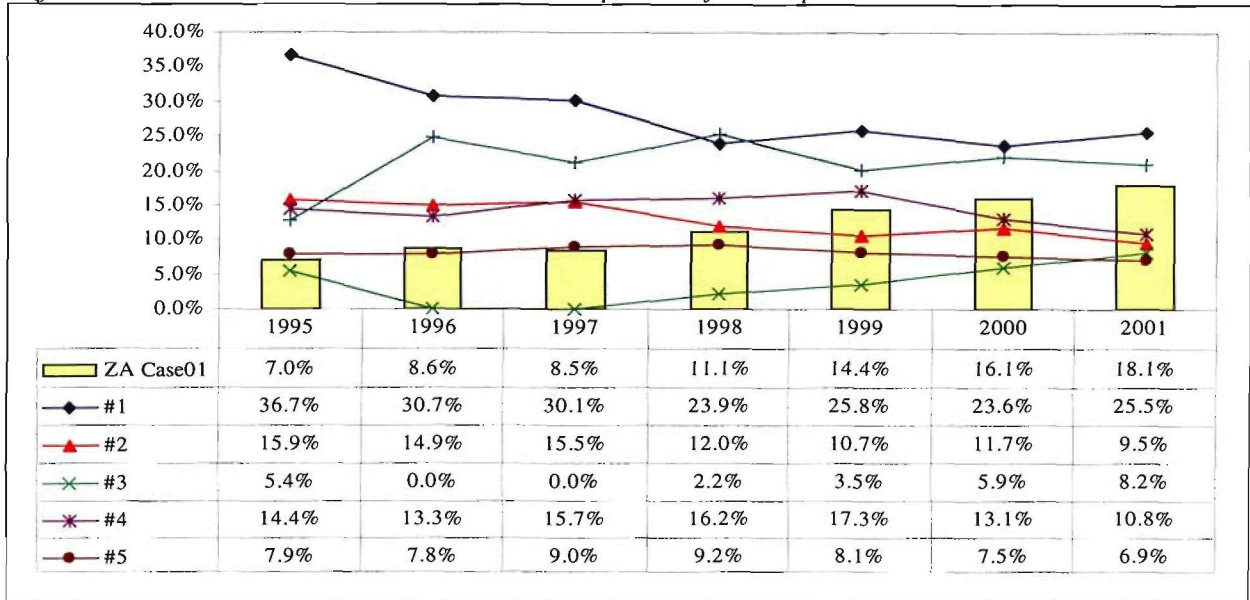


(Source: own compilation)

ZA Case 01 is representative in all the regions within SACU, having a substantial market share in each regional market. Lesotho and Swaziland is the biggest markets for ZA Case 01 outside South Africa. Namibia and Botswana is increasing in importance with a market share ranging from 15 per cent to 20 per cent. In South Africa, ZA Case 01 has a market dominant position (market share in excess of 30 per cent) in Limpopo and KwaZulu Natal.

Analysing ZA Case 01's performance over the period under investigation, a picture of strong market share growth emerges in a market that showed signs of decline and recovery as evidenced in Figure 30. ZA Case 01 realised market growth in excess of 25 per cent with production unit volumes increasing by approximately 63 per cent from 1999 to 2001. ZA Case 01 increased their market share from around 18 per cent in 2001 to close to 20 per cent in 2002. In effect, ZA Case 01's market share increased from 7.0% in 1995 to 19.7% in 2002 for all products sold in the South African market segment.

Figure 30: ZA Case 01's relative market share compared to five competitors



(Source: own compilation)

Since reorganisation in 1997, ZA Case 01's focus shifted from general freight capital equipment to the supply of customised products to an extended client portfolio not limited to the agriculture, construction, forestry, mining, food and beverage industries and Subsidiary#4 (see Figure 28) supplying products to the public sector. ZA Case 01 is actively involved in developing their export market with initial focus over the immediate short term on the geographic areas to the north of the SACU area and extending it to Central Africa and Mauritius with expansion further north being on the planning horizon (see Figure 29).

### 5.3.3 Analysis of functions, risks and markets of ZA Case 01

ZA Case 01 manufactures products sell the products into the South African and Southern African Customs Union (SACU) markets. In undertaking various interviews (refer to section Appendix 5.2 for the interview schedule) with personnel of ZA Case 01 in accordance with the guidelines as provided in PN 7, the following broadly defined functions of ZA Case 01 were identified (South Africa, 1999:28):

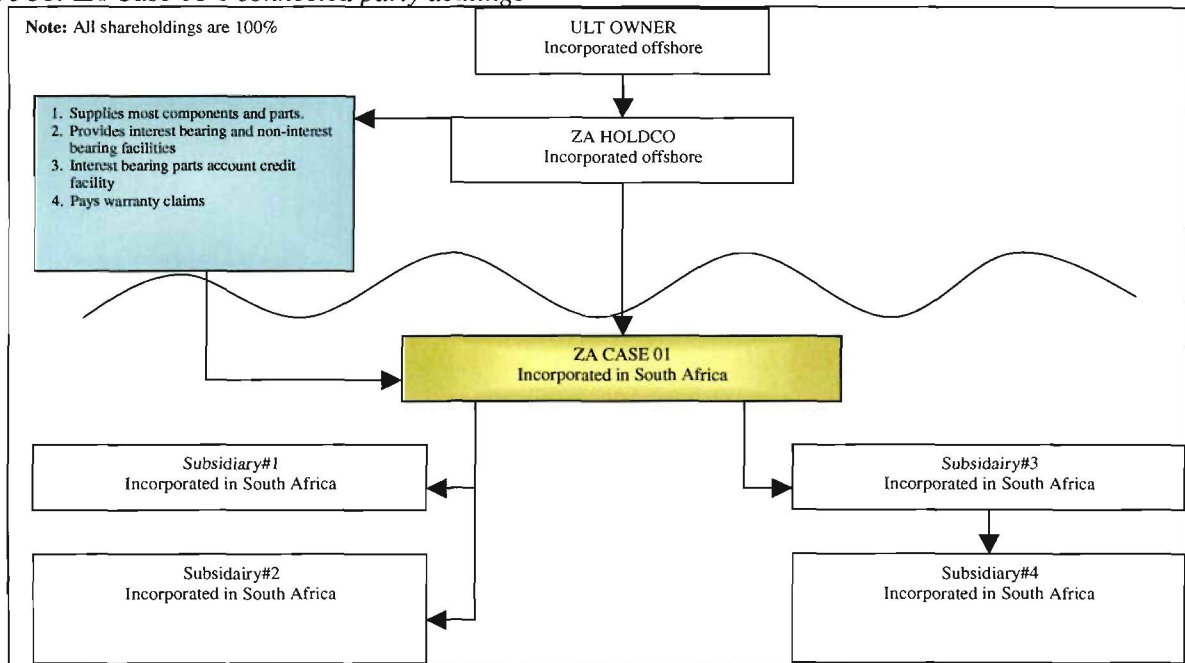
- Manufacturing of products
- Distribution of products
- Marketing and advertising

- Management of South African operations

The affected transactions amongst ZA Case 01 and its connected parties off-shore in performing the abovementioned functions in terms of section 31 of the Act (see 1.6.29) is illustrated in the section 5.3.4.

### 5.3.4 Affected transactions of ZA Case 01

Figure 31: ZA Case 01's connected party dealings



(Source: own compilation)

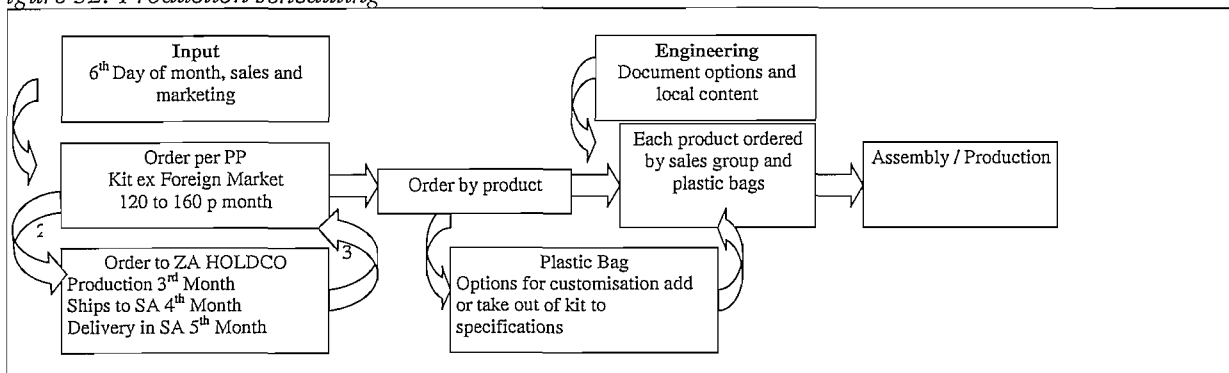
ZA Case 01 is incorporated in South Africa. ZA Holdco supplies ZA Case 01 of most of the components and parts required in the assembling (manufacturing) function ZA Case 01 performs in South Africa. ZA Holdco provides interest bearing and non-interest bearing financial assistance to ZA Case 01. ZA Holdco assumes warranty risk and pays all warranty related claims of ZA Case 01. The affected transactions (see 1.6.9) of ZA Case 01 are as follows:

- Management - ZA Case 01's head office is situated in a major city in South Africa with a staff compliment of more than 100. This facility houses the sales, marketing, finance and administration functions. The management function of the company is undertaken from its head office. Basic accounting functions are decentralised with a treasury function being centralised at the head office of ZA Case 01. Legal, auditing and taxation services are

outsourced as and when required by ZA Case 01. Inventory, sales, vehicle release to dealers, maintenance contracts that include monthly billing are controlled centrally. ZA Holdco, situated offshore, verifies substantial sales deals in excess of specific determined R value million. Pricing policy of ZA Case 01's products is determined locally. ZA HOLDCO, situated offshore, determines the prices of the kits. The costing of manufacturing in South Africa as well as the effect of the exchange rate is factored in to obtain production cost. Competitor pricing is undertaken to determine a low-high price comparison.

- Manufacturing - ZA Case 01 manufactures products at its manufacturing facilities in South Africa. The assembly plant is situated on approximately 33 000 m<sup>2</sup>, employing close to 300 employees. This facility is responsible for engineering, production and technical service as well as enabling ZA Case 01 to customise products to local conditions for the benefit of the customer. Customised build is about 60% to 65% of total build and is primarily based on product application.
  - Production scheduling - The process of ordering and production planning at the manufacturing plant can be summarized as illustrated in Figure 32. Production scheduling at the manufacturing plant is done on the 6<sup>th</sup> working day of each month as illustrated with the production planning and the sales and marketing departments forecasting demand for the different products per model type as well as production mix and customisation.

Figure 32: Production scheduling



(Source: own compilation)

- Inventory at the production facility relates to inventory needed for manufacturing in the form of imported kits and the “plastic bags” (refer to Figure 32). This is a

concept that allows for the manufacturing of customised vehicles in accordance with the customer's requirements based on product application. Finished products make up part of the inventory of ZA Case 01 under the auspices of the Marketing and Sales (MS) division of ZA Case 01. The spares and stores used in the after sales service of products are housed at the central part depot and are included in the inventory of ZA Case 01.

- Distribution - Distribution of the finished products is undertaken by the marketing and sales (MS) division of ZA Case 01. ZA Case 01's dealer network comprises of 15 full dealerships and 20 service and parts dealerships, which are strategically situated throughout Southern Africa in order to provide complete support to ZA Case 01's customers. ZA Case 01's Customer Satisfaction Monitor (CSM) measures each dealership's individual performance as well as each product's performance with regard to sales, service and parts. A Dealer Standards Programme defines objectives and measures scores throughout the year culminating in a "Dealer of the Year" trophy being awarded to the winning dealership.
- Marketing and advertising - Marketing and advertising (MA) is undertaken by a dedicated division of ZA Case 01. Media advertising is done by the MA division and is responsible for the launches of models, taking key clients to trade shows and it have its own budget allocation. Decisions are taken locally with approval of the local board.

### **5.3.5 Market**

The market in which ZA Case 01 operates as well as their relative performance is discussed in section 5.3.2. However, ZA Case 01's performance over the period under investigation is noteworthy (based on interviews with ZA Case 01 and ZA Case 01 data and could be made accessible for moderators if they want to test authenticity of facts) and could be summarised as follows:

- Market share increased from 7.7% in 1997 to 19.7% in 2002 for specific products sold in the Customs Union of Southern Africa.
- The South African market has shown very little growth since 1996 but ZA Case 01 more than doubled its unit sales volumes, realising sales growth of 52.9% from 1996 to 2002.

- The introduction of new products in 1996 contributed nearly 400 unit sales in 2002 allowing ZA Case 01 to obtain a 13% share of this specific market segment.
- Another product at the high end of the market showed continual growth with annual sales increasing from approximately 600 units in 2000 to nearly 800 units in 2002 resulting in a 19.1% market share in the specific market segment.
- A local beneficiated product realised the sale of almost 450 units in an industry market of more than 1 000 units, nearly 40% of the total market.

The market performance of ZA Case 01 is significant for transfer pricing purposes. In the years under consideration, ZA Case 01 was profitable in 1996 and 1999. ZA Case 01 incurred losses for tax purposes over the period 1996 to 2001 which are in contrast with ZA Case 01 market performance.

### **5.3.6 Risk**

From a transfer pricing perspective, risk (with reference to functions performed, assets used and risk assumed) can be categorised as being demand related risk, supply related risk and transactional risk. Risk ZA Case 01 is exposed to is determined through interviews (see Appendix 5.2) as well as an evaluation of the trial balance investigating expense items that reflects realisation of risk. For example, inventory risk is identified by provisions for inventory, obsolescence write-off and inventory losses recorded in the financial accounts.

#### **5.3.6.1 Demand related risk**

Demand related risks are the risks associated with market risk, inventory risk and price volatility of competing products or services (Brigham *et al.*, 1999: 187). ZA Case 01 is exposed to the following demand related risk:

- Inventory - ZA Case 01 is exposed to inventory risk and the assessment is based on the following discernable inventory items.
  - Kit inventory items - the risk that inventory items could become obsolete is small if ordering of the kits is in accordance to estimated demand. In the event that product and model change is enacted, some items could become obsolete, especially with the plastic bag system that is in place. This might not be substantial because a

number of the obsolete items from an assembly point could be incorporated into spares and stores for after sales. This cannot be done without the accompanying paperwork in terms of customs regulations.

- Finished product - these units are produced based on demand forecasts and it would overall not have a major risk attached to it.
- Spares and stores - the risk associated will be primarily that of pilferage and to a lesser extent obsolescence and as such cannot be classified as medium or high-risk activities.
- Price volatility - ZA Case 01 is exposed to the same price volatility as any of its competitors. All the domestic players in the industry is exposed to primarily foreign exchange volatility and its' impact on price volatility. Based on the facts the risk that ZA Case 01 is exposed to could not be classified as being high in comparison to the other players in the industry.

#### ***5.3.6.2 Supply related risk***

Supply related risks are the risk associated with the presence of technological change, cost volatility and the potential of market entry and exit. Risk of loss associated with investment in and use of property, plant and equipment should be considered. The risks inherent in research and development to the extent that it influences the success and failure of the research and development projects are recorded as such. In undertaking the functional analysis of ZA Case 01 the supply related risks that could affect ZA Case 01's operations is as follows:

- Industry role players - It is noted that the industry has a number of players with a few major competitors and a number of smaller players. In an industry with 11 participants, the top five participants command in excess of 90% of the total market. There is some ground for perceived volatility in the market insofar as new entrants, however, ZA Case 01 is one of the major players and it should be able to withstand the threat of potential small new entrants hence the supply risk based on market entry is minimal.
- Research and development - Research and development is not undertaken in South Africa beyond ongoing quality improvement insofar as customisation of vehicles for specific applications. There is the risk of breakage, downtime and performance and as such will be

assumed by ZA Case 01. However, warranties exist and in some instances defect parts and equipment imported from ZA Holdco will be settled by them, hence the conclusion reached is that the risk is not substantial from ZA Case 01's perspective.

- New products - The launch of the new generation product planned for 2004 poses a potential risk to ZA Case 01's operations. With a new product launch and the withdrawal of the current, well-known product, market perception and resistance could be a barrier to unit sales volumes over the short term. If ZA Case 01 overcomes the normal market apprehension and could prove the new generation product to be their product of the future with huge benefits to their customers, it could bolster their sales over the medium to long term.

### ***5.3.6.3 Transactional risk***

Transactional risk within the South African paradigm will be primarily the risk associated with foreign exchange volatility and interest rate fluctuation. Credit risk might be a further consideration. Culminating from the investigation, the following risk areas were evaluated and the following are an indication of ZA Case 01's risk exposure.

- Foreign exchange - ZA Case 01 was exposed to foreign exchange currency risk until October 2002 when the billing arrangement changed to R based invoicing from ZA HOLDCO. Their future exposure will be associated with the relative depreciation of the R versus the Euro, which will affect their kit prices, a form of purchase parity price adjustment. In light of the South African market dynamics, ZA Case 01 will not be in an adverse position in comparison to their competitors because they are also exposed to foreign currency volatility with the importation of the final products.

## **5.4 Requirements of the arm's length principle**

### **5.4.1 Comparability in practice**

Comparability is fundamental (see 3.2.2) to the application of the arm's length principle (South Africa, 1999:8). The preferred arm's length methods are based on the concept of comparing the prices or margins achieved by connected parties in their dealings to those achieved by independent entities for the same or similar dealings. In order for such comparisons to be useful, the

economically relevant characteristics of the situations being compared must be highly comparable (OECD, 1995:I-3 and South Africa, 1999:9).

To be comparable means that none of the differences (if any) amongst the situations being compared could materially affect the condition being examined in the method (e.g. price or margin), or that reasonably accurate adjustments can be made to eliminate the effect of any such differences (OECD, 1995:I-7). If suitable adjustments cannot be made, then the dealings cannot be considered comparable. Since precise calculations cannot be made and the application of any method involves elements of judgment, there is, depending on the circumstances of the particular case, a need to avoid making adjustments to account for minor or marginal differences in comparability.

#### ***5.4.1.1 Objective of comparability***

The objective of comparability is to always seek the highest practical degree of comparability (see 3.2.2.3). Recognising that there will be unique situations and cases involving unique intangibles where it is not practicable to apply methods based on a high degree of direct comparability (South Africa 1999:10). The practicable standard of comparability will be determined by the amount of data on which comparisons with uncontrolled situations and dealings in a particular case can be based. Comparisons with controlled dealings by other MNE's cannot be regarded as arm's length comparisons.

#### ***5.4.1.2 Assessment of comparability***

The assessment of comparability can be affected, *inter alia*, by (OECD, 1995:I-9):

- The characteristics of goods and services;
- The relative importance of functions performed;
- The terms and conditions of relevant agreements;
- The relative risk assumed by the MNE, connected enterprises and any independent party where such party is considered as a possible comparable;
- Economic and market conditions; and
- Business strategies.

#### ***5.4.1.3 Comparability and functions performed***

The compensation for the transfer of goods or services amongst two unconnected parties will usually reflect the functions that each enterprise performs, taking into account the risks assumed and the assets used (South Africa, 1999: 11). In determining whether two transactions are comparable, the functions and risks undertaken by the independent parties should be compared to those undertaken by the connected parties (see 3.2.2.3.2).

#### **5.4.2 Comparable search**

The TNMM was selected as the most appropriate method (refer to section 3.3.2.1 for the discussion on the method) under the circumstances based on the available information and the functions performed by the companies investigated, assets used and risk assumed. The entities being regarded as comparable to the different companies were tested on functional comparability, assets used and the risk assumed.

##### ***5.4.2.1 Industrial Classification***

Standard Industrial Classification (SIC) codes classify business enterprises by their type of economic activity (see Appendix 2 for details). Any industrial classification system uses a hierarchical system, dividing economies in sectors and sub-sectors. The system used in Amadeus is comparable to the SIC standard and is referred to as “NACE” classification.

The classification codes in Amadeus support searches based on the two-digit primary industry code as well as supporting four-digit classification. Bureau van Dijk’s Amadeus Database contains financial and business information of approximately 1.2 million companies (refer to section 4.5.1.2.2 for inclusion criteria).

#### **5.4.3 Screening Criteria**

There are two screening criteria applied (as indicated in the previous Chapter) in undertaking a comparable search, the first being quantitative screening and the second being qualitative screening. Quantitative screening use ratios or thresholds to find companies that are similar to the tested party, ZA Case 01. Qualitative screening focuses on screening criteria that cannot be quantified.

The June 2003 version, update number 105 of the database was used for the comparable search. Nine screening steps, each with its own criteria are used to determine the comparable set for ZA Case 01.

### 5.4.3.1 Quantitative screening

#### 5.4.3.1.1 Geographic Region

Market conditions vary greatly amongst countries and country specific factors can influence profitability. Therefore, the search concentrated on a common geographic area such as the European Union (EU). There were 1.209 million companies identified that operates in the EU and the results from this step can be summarised as follow:

*Table 30: Screening Results – Geographic Region*

STEP	Search Criteria	Value of criteria	Step Result	Search Result
1	Countries	European Union	1 209 234	1 209 234

*(Source: own compilation)*

#### 5.4.3.1.2 Independence

Connected companies cannot be used in a comparable set due tot the fact that they might have transfer pricing issues of their own. The Amadeus database consists of 1.255 million companies that do not have subsidiaries with 544 084 of the companies in the European Union. Independent or dependent companies according to the search criteria of companies with no shareholders recorded with more than 24,9% direct or total ownership (referred to as A+, A, A-) as well as unknown ownership (U) resulted in 767 766 possible companies with only 624 544 companies being in the EU and not having any subsidiaries with the result from these steps as follow:

*Table 31: Screening Results – Independence*

STEP	Search Criteria	Value of criteria	Step Result	Search Result
2	Independent/Dependent Co.'s.	A+, A, A-,U	767 776	624 544
3	No of subsidiaries	None	1 254 960	544 084

*(Source: own compilation)*

#### 5.4.3.1.3 Intangible assets

Access to intangible assets such as trademarks, technological know-how, patents etc., may provide the owner of such intangibles the potential to earn profits in excess to that of a similar company, operating in the same industry without the intangibles. This poses a problem and inflates the results if screening is not done to exclude companies with intangible assets. In applying this screen, 178 985 companies on the database do not have intangible fixed assets with 70 166 of the

companies being in the EU that does not have subsidiaries and conforms to the independence/dependence screen. The result from this step is as follow:

*Table 32: Screening Results – Intangible Assets*

STEP	Search Criteria	Value of criteria	Step Result	Search Result
4	Intangible Fixed Assets	2001, 2000, 1999, 1998 Max = 0 for all years	178 985	70 166

*(Source: own compilation)*

#### 5.4.3.1.4 Industrial classification

By using industrial classification as search criteria, companies are selected on the grounds of their respective industry classification, an indication of relative comparability. The industry classification code being used is the NACE 1, code 34, manufacture of motor vehicles, trailers and semi-trailers. In making use of sub-sectors within this industry segment (see also Appendix 2), the following potentially comparable sub sectors were identified:

*Table 33: Industry sub-sector code description*

NACE Code	Description
3410	Manufacture of motor vehicles
3420	Manufacture of bodies (coachwork) for motor vehicles, manufacture of trailers and semi-trailers

*(Source: own compilation)*

The results from incorporating the abovementioned industry sub-sector code description are as follow:

*Table 34: Screening Results – Industrial classification*

STEP	Search Criteria	Value of criteria	Step Result	Search Result
5	NACE 1	Primary codes: 3410 and 3420	2 905	112

*(Source: own compilation)*

In applying this screen, 2 905 companies are classified under technical testing and analysis with 112 companies being in the EU, do not have subsidiaries, conforms to the independence/dependence screen and do not have intangible fixed assets.

#### 5.4.3.2 Qualitative screening

##### 5.4.3.2.1 Financial item

In order to find companies that are similar in size, based on turnover, a qualitative screen was applied. Companies with a turnover more than € 140 million were rejected. The results from this step can be summarised as follow:

*Table 35: Screening Results – Financial Item*

STEP	Search Criteria	Value of criteria	Step Result	Search Result
6	Operating revenue / turnover (Thousand Euro € '000)	Last available year, Max =140 000 for at least one year	1 167 235	50

*(Source: own compilation)*

In applying this screen, 1 167 235 companies in the Amadeus database satisfy the financial item criteria with 50 companies being in the EU that do not have subsidiaries, conforms to the independence/dependence screen, do not have intangible fixed assets and has an operating revenue of more than € 140 million.

#### 5.4.3.2.2 Individual screening

In applying individual screening, each company of the remaining 50 companies are screened to ascertain whether it operates in a comparable industry segment, is functionally broadly similar to the tested party and is not in a start-up phase nor closed down. Within this screen, market segment and data availability over the period of investigation is verified. The results from this step can be summarised as follow:

*Table 36: Screening Results – Individual screening; functionality and market segment*

STEP	Search Criteria	Value of criteria	Step Result	Search Result
7	Market Companies	32 Companies deleted	18	18

*(Source: own compilation)*

The next screen that was applied was to verify that none of the potentially comparable companies has any shareholding that might be included in the dataset. The results from this step can be summarised as follow:

*Table 37: Screening Results – Individual screening; Shareholding*

STEP	Search Criteria	Value of criteria	Step Result	Search Result
8	Market Companies	4 Companies deleted	14	14

*(Source: own compilation)*

The last screen focuses on financial information of the 14 potentially comparable companies. Financial information screening involves screening to ensure that at least 3 years of financial information is available and any discernable outliers are eliminated with the result being represented below:

*Table 38: Screening Results – Individual screening; Financial Information*

STEP	Search Criteria	Value of criteria	Step Result	Search Result
9	Market Companies	5 Companies deleted	9	9

*(Source: own compilation)*

The result of all the abovementioned screening steps resulted in that 9 companies can be regarded as reasonably functionally comparable with the tested party, ZA CASE 01. With the comparable companies being in the EU, which does not have subsidiaries, conforms to the independence/dependence screen, do not have intangible fixed assets and have operating revenue of not more than € 140 million with sufficient information to satisfy all of the abovementioned criteria (refer to Appendix 6.1 for the details on the 9 companies).

*Table 39: Summary of Screening Results*

STEP	Search Criteria	Value of criteria	Step Result	Search Result
1	Countries	European Union	1 209 234	1 209 234
2	Independent/Dependent Co.'s.	A+, A, A-,U	767 776	624 544
3	No of subsidiaries	None	1 254 960	544 084
4	Intangible Fixed Assets	2001, 2000, 1999, 1998 Max = 0 for all years	178 985	70 166
5	NACE 1	Primary codes: 3410 and 3420	2 905	112
6	Operating revenue / turnover (th Euro)	Last available year, Max =140 000 for at least one year	1 167 235	50
7	Market Companies	32 Companies deleted	18	18
8	Market Companies	4 Companies deleted	14	14
9	Market Companies	5 Companies deleted	9	9

*(Source: own compilation)*

In order to determine the arm's length consideration, the information pertaining to the nine comparable companies as illustrated in Table 39 is used. The current approach in determining the arm's length consideration is discussed in the subsequent sections.

#### **5.4.4 Current approach in determination the arm's length consideration**

In any analysis or interpretation of data, a variety of descriptive measures that represents the inherent properties of central tendency, variation and shape may be used to describe or summarise the data set. The five number summary data were used as a comparable benchmark for determining a return consistent with the arm's length principle.

The comparable search results were discussed in detail in section 5.4.3. Using the transactional net margin method (TNMM) (see 3.3.2.1) to determine the arm's length consideration, the net-cost-plus (NCP) mark-up profit level indicator was used. The net-cost-plus results of the comparable search are tabled in Table 40.

Table 40: Net-cost-plus - Unadjusted results

Company	2001	2000		1999	1998	1997	1996	Ave.	Std Dev.
JAPA MAINTENANCE	1.09%	1.43%		3.27%	6.17%	13.50%	16.23%	6.95%	0.064
SARL ALQUIER JEUNES	2.60%	3.47%		3.82%	1.94%	1.15%	0.14%	2.19%	0.014
UTILITAIRES PRO SERVICES UPS	5.34%	3.76%		4.80%	4.37%	4.09%	8.26%	5.10%	0.016
DEILA	3.63%	4.64%		2.18%	2.71%	5.52%	5.13%	3.97%	0.013
BENNES GUILLAUME SA	0.17%	1.39%		3.49%	3.83%	3.79%	-0.74%	1.99%	0.020
SUD EST REPARATION	7.80%	5.50%		3.67%	6.79%	5.02%	0.40%	4.86%	0.026
CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	12.30%	7.63%		4.81%	2.32%	8.05%	3.13%	6.37%	0.037
ALLOY BODIES LIMITED	2.76%	4.12%		6.09%	11.84%	5.42%	3.99%	5.70%	0.032
J. C. PAYNE LIMITED	6.23%	8.34%		0.47%	2.48%	-0.20%	-2.99%	2.39%	0.042
<b>Count</b>	<b>9</b>	<b>9</b>		<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>		
<b>Inter quartile range</b>	<b>2001</b>	<b>2000</b>		<b>1999</b>	<b>1998</b>	<b>1997</b>	<b>1996</b>	<b>Ave.</b>	<b>Std Dev.</b>
Minimum	0.17%	1.39%		0.47%	1.94%	-0.20%	-2.99%	0.13%	0.017
first quartile	2.60%	3.47%		3.27%	2.48%	3.79%	0.14%	2.63%	0.013
Median	3.63%	4.12%		3.67%	3.83%	5.02%	3.13%	3.90%	0.006
third quartile	6.23%	5.50%		4.80%	6.17%	5.52%	5.13%	5.56%	0.006
Maximum	12.30%	8.34%		6.09%	11.84%	13.50%	16.23%	11.38%	0.036
	<b>2001</b>	<b>6 months to Dec 2000</b>	<b>6 months to June 2000</b>	<b>1999</b>	<b>1998</b>	<b>1997</b>	<b>1996</b>	<b>Ave.</b>	<b>Std Dev.</b>
<b>Tested Party</b>	<b>2.38%</b>	<b>3.99%</b>	<b>3.75%</b>	<b>9.45%</b>	<b>2.19%</b>	<b>-1.09%</b>	<b>8.44%</b>	<b>4.16%</b>	<b>0.037</b>

(Source: own compilation)

Note that the tested party, ZA Case 01 had a financial year-end change in 2000, hence the application of the results for 2000 to the financials accordingly. From this analysis, on a net-cost-plus basis, apart from 1999 and 1996, ZA Case 01 does not derive a result, which can be deemed consistent with the arm's length principle.

It is clear that, apart from the two years previously mentioned, that ZA Case 01 does not fall within the arm's length range. This is concerning from the perspective that the *potentially comparable data is based on an EU dataset, which is clearly exposed to far less market risk if the bond yield rates* (refer to Table 43 for more detail) is not factored into the dataset as a comparable adjustment.

The challenge is to determine where one would ordinarily expect ZA Case 01 to be positioned in the arm's length range. Another challenge is to determine if adjustments should be made and what such adjustments would be. The proposition is adjustments should only be performed in relation to comparability insofar as it would *that none of the differences amongst the situations being*

compared could materially affect the condition being examined in the methodology (e.g. price or margin), or that reasonably accurate adjustments can be made to eliminate the effect of any such differences (OECD, 1995: 33).

#### 5.4.4.1 Transactional Net Margin Method results

ZA Case 01's positioning with regard to the inter-quartile is discussed in the previous section and in applying the TNMM the median is regarded as the most appropriate comparative benchmark. The results of applying this approach in practice yielded the results as tabled Table 41.

Table 41: TNMM results at median

<i>Adjusted Net-cost-plus</i>	2001	6 months to Dec 2000	6 months to June 2000	1999	1998	1997	1996	Ave.	Std Dev.
<b>ZA CASE 01 Results</b>	2.38%	3.99%	3.75%	9.45%	2.19%	-1.09%	8.44%	4.16%	0.037
<b>Adjustment at Median</b>	5.85%	3.44%	3.68%	0.00%	7.10%	8.70%	0.00%		
<b>Inter quartile range</b>									
first quartile	4.35%	5.43%	5.43%	6.09%	6.24%	5.70%	2.14%	4.99%	0.016
Median	8.23%	7.43%	7.43%	7.18%	9.29%	7.62%	4.31%	7.34%	0.017
third quartile	8.77%	9.84%	9.84%	8.87%	11.77%	9.76%	12.48%	10.25%	0.015
<b>Income Statement as reported</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>		
Cost of Sales	-916,298	-318,207	-592,702	-480,905	-338,550	-304,473	-326,120		
EBIT	25,395	14,568	24,980	50,625	8,397	-3,691	30,397		
Net-cost-plus	2.381%	3.990%	3.754%	9.454%	2.195%	-1.086%	8.444%		
<b>Adjusted Income Statement</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>		
Adjusted Cost of Sales	854,413	305,635	568,209	480,905	311,381	274,724	326,120		
EBIT	87,280	27,140	49,473	50,625	35,566	26,058	30,397		
Adjusted EBIT	87,280	27,140	49,473	50,625	35,566	26,058	30,397		
Ebit at Median	61,885	12,572	24,493	0	27,169	29,749	0		
Total Cost	996,330	352,509	641,000	535,503	355,588	312,055	359,974		
Net-cost-plus	8.248%	7.434%	7.434%	9.454%	9.292%	7.624%	8.444%		
<b>ADJUSTMENT</b>								<b>Total</b>	
Tax Rate	30%	30%	30%	30%	30%	35%	35%	<b>R'000</b>	
Adjusted Taxation	18,565	3,772	7,348	0	8,151	10,412	0	48,248	
STC	7,736	1,572	3,062	0	3,396	3,719	0	19,483	
Total Taxation	26,301	5,343	10,409	0	11,547	14,131	0	67,731	

(Source: own compilation)

From Table 41 it is evident that ZA Case 01 does not derive a result, which is consistent with the arm's length principle hence, the position after careful consideration of all the facts at hand is to make an adjustment in accordance with section 31 of the Act. In addition to the application of the TNMM, a bond yield differential is used to test the analysis and position with regards to the arm's length consideration.

The adjustment is significant in monetary terms with the total adjustment being R 67 million. Transfer pricing adjustments is significant and requires careful consideration from business and tax authorities alike, as illustrated in ZA Case 01.

The adjustment in Table 41 is based on comparable data from the EU. Adjustments to reflect the difference in the foreign comparables are not incorporated into the analysis. PN 7 requires consideration of foreign comparables and the impact of foreign comparables on the arm's length consideration (South Africa, 1999:26). The differences in government bond yield are considered a fair proxy for differences in the EU and South African market.

#### **5.4.5 Bond Yield adjustment to enhance comparability**

For the purposes of this research, various companies were accepted for comparative purposes. However, significant geographic market differences exists between South Africa the EU, on which the comparable datasets were based. Therefore, the financial data of the comparable EU companies should be adjusted by a country risk premium if the requirements of comparability are to be met (OECD, 1995:I-33). In order to apply the risk reward concept in practice, the approach followed as an alternative is broadly based on the following:

- The bond yield rates on government long bonds (maturity 10 years and older) provides a fair investment benchmark for virtually risk free investments.
- The interest rate risk is included in the price of the bond over the duration of the bond. Bonds with a similar coupon and the differential sensitivity to changes in interest rates are included.
- Reinvestment rate risk is included, this is the risk associated with the decline of income attributable to a drop in interest rates.
- Default risk is also included, however, in the case of a government bond; the default risk is extremely low in the specific national economy.
- A company operating within a specific national economy would at least be satisfied with a return equal or bigger than the bond yield rates.

- The perceived and actual risk the company are being exposed to within a national economy will equate to a mark-up being added to the bond yield rate that is a fair proxy of the investor's expected return for accepting the "additional" risk attached to the investment.

In an attempt to adjust for the differences amongst the two markets, a risk adjustment model was devised that could hypothetically impose a country risk premium on the comparable dataset. A simple comparison using the profitability level indicators of unadjusted EU companies would be incorrect since the perceived risks associated with investing capital in South Africa would not be recognised. Fundamentally, investment in the South Africa market is generally considered riskier than investment in the EU market (see Table 43 where the difference in bond yield rates can be seen and it supports this assumption). In order to attract global capital, South African investments must offer a return in excess to that of a comparable EU investment by compensating for the perceived higher risk (Brigham *et al.*, 1999:190).

This difference in risk amongst the EU market and the South African market is considered the country risk premium. The profitability of comparable EU companies in addition to the country risk premium will provide a reliable measure of arm's length result for companies conducting their operations in these countries.

Quantifying the inherent risk in doing business in South Africa in a more tangible way, the ROA for the various companies used in the analysis were used as the profit level indicator being adjusted with a risk premium. The return on assets of the comparable EU dataset is tabled in Table 42.

Table 42: Return on Assets - Unadjusted results of the comparable EU dataset

<i>Inter quartile range</i>	2001	2000		1999	1998	1997	1996	Ave.	Std Dev.
Minimum	0.22%	3.95%		0.42%	2.45%	-1.64%	-11.70%	-1.05%	0.056
First quartile	5.41%	5.29%		7.95%	5.57%	5.77%	-0.90%	4.85%	0.030
Median	9.12%	10.61%		10.42%	8.86%	9.52%	5.47%	9.00%	0.019
Third quartile	17.72%	18.03%		12.47%	14.66%	16.03%	7.71%	14.44%	0.039
Maximum	28.66%	24.41%		14.90%	25.90%	35.03%	46.25%	29.19%	0.106
		6 months to Dec 2000	6 months to June 2000						
	2001			1999	1998	1997	1996	Ave.	Std Dev.
<b>Tested Party</b>	<b>3.11%</b>	<b>2.65%</b>	<b>5.25%</b>	<b>11.63%</b>	<b>2.76%</b>	<b>-1.65%</b>	<b>9.55%</b>	<b>4.27%</b>	<b>0.044</b>

(Source: own compilation)

With the exception of 1996 and 1999, the tested party (ZA Case 01) realised a return on assets lower than the first quartile and on average falls outside the inter-quartile range. The return on assets interquartile range is 4.85 per cent to 14.44 percent for the years 1996 to 2001. The return on assets of ZA Case 01 that falls outside the inter-quartile range could indicate potential transfer pricing exposure.

The return on assets is used as an appropriate measure to benchmark a comparable investment return such as government bond yield rates, a relative risk free investment. The hypothesis is based on the premise that the difference in government bond yield rates is a fair estimation or proxy of the inherent risk of doing business in a country, risk free, thus the difference in the bond yields is a proxy of country risk, all other things being equal. The bond yield rates for long terms bonds in South Africa and the EU are tabled in Table 43.

*Table 43: Bond Yield Rate*

<b>European Union</b>							
EU 10 Year Government Bond Yield Annual Rate	1995	1996	1997	1998	1999	2000	2001
	8.73%	7.23%	5.96%	4.70%	4.66%	5.44%	5.03%
<b>South African</b>							
Government Bonds 10 Years and older Annual Rate	14.56%	16.19%	14.14%	16.36%	13.96%	12.88%	11.63%
Bond Yield Differential	5.83%	8.96%	8.18%	11.66%	9.30%	7.44%	6.60%

*(Source: European Central Bank, 2003: T03.02\_c5 and SARB, 2003(b): KBP2003M)*

In order to apply these hypothetical country risk premiums to the comparable dataset for the years under investigation, the country risk premium is applied to the return on assets of all the comparable companies. The adjusted results are tabled in Table 44.

In applying the bond yield to the return on assets of the comparable companies' financial data, the return on assets (ROA) inter-quartile range increased from 4.85 per cent to 14.44 percent to 13.54 per cent to 23.13 per cent (average from 1996 to 2001). The adjusted ROA interquartile range compares well with the research ABSA published on the automotive and component industry (see Table 12).

Table 44: Return on Assets- Adjusted results

<i>Company</i>	2001	2000		1999	1998	1997	1996	Ave.	Std Dev.
JAPA MAINTENANCE	9.13%	11.83%		17.26%	33.07%	43.21%	55.21%	28.28%	0.19
SARL ALQUIER JEUNES	15.72%	19.41%		23.79%	21.29%	11.33%	8.06%	16.60%	0.06
UTILITAIRES PRO SERVICES UPS	18.08%	16.57%		19.73%	20.52%	17.06%	24.91%	19.48%	0.03
DEILA	12.01%	12.73%		11.50%	14.11%	13.95%	16.45%	13.46%	0.02
BENNES GUILLAUME SA	6.82%	11.39%		17.52%	19.84%	17.70%	5.40%	13.11%	0.06
SUD EST REPARATION	27.93%	25.47%		21.78%	26.32%	19.72%	8.96%	21.70%	0.07
CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	35.26%	26.75%		20.65%	15.81%	28.69%	14.43%	23.60%	0.08
ALLOY BODIES LIMITED	14.68%	18.05%		24.21%	37.56%	24.21%	16.67%	22.56%	0.08
J. C. PAYNE LIMITED	24.32%	31.85%		9.73%	17.23%	6.54%	-2.74%	14.49%	0.13
<i>Inter quartile range</i>	2001	2000		1999	1998	1997	1996	Ave.	Std Dev.
First quartile	12.01%	12.73%		17.26%	17.23%	13.95%	8.06%	13.54%	0.035
Median	15.72%	18.05%		19.73%	20.52%	17.70%	14.43%	17.69%	0.023
Third quartile	24.32%	25.47%		21.78%	26.32%	24.21%	16.67%	23.13%	0.035
	2001	6 months to Dec 2000	6 months to June 2000	1999	1998	1997	1996	Ave.	Std Dev.
<i>Tested Party</i>	3.11%	2.65%	5.25%	11.63%	2.76%	-1.65%	9.55%	4.27%	0.044

(Source: own compilation)

In order to adjust the net-cost-plus mark-up, the operating profit must be adjusted to *reflect* the adjusted net-cost-plus. The hypothesis is based on the premise that the asset base is constant and by applying the country risk premium, the “excess” operating profit is calculated that could equate as the “additional” profit required by an investor to compensate for the increased risk. Similarly, the operating profit so calculated applied to the net-cost-plus formula would be a fair approximation of the “additional” profit expected on the cost incurred when operating in a higher risk location. The adjusted results are tabled in Table 45.

Table 45: Net-cost-plus – Adjusted results

<i>Inter quartile range</i>	2001	2000		1999	1998	1997	1996	Ave.	Std Dev.
First quartile	4.35%	5.43%		6.09%	6.24%	5.70%	2.14%	4.99%	0.016
Median	8.23%	7.43%		7.18%	9.29%	7.62%	4.31%	7.34%	0.017
Third quartile	8.77%	9.84%		8.87%	11.77%	9.76%	12.48%	10.25%	0.015
		<b>6 months to Dec 2000</b>	<b>6 months to June 2000</b>						
	2001			1999	1998	1997	1996	Ave.	Std Dev.
<b>Tested Party Positioning</b>	<b>2.38%</b> < Min	<b>3.99%</b> < 25 <sup>th</sup> Per	<b>3.75%</b> < 25 <sup>th</sup> Per	<b>9.45%</b> >75 <sup>th</sup> Per	<b>2.19%</b> < Min	<b>-1.09%</b> < Min	<b>8.44%</b> < 75 <sup>th</sup> Per	4.16% < Med	0.037

(Source: own compilation)

From the analysis, ZA Case 01's results is volatile, during 1997 and 1998, it recorded results considerably lower than the inter-quartile range. During 1999 ZA Case 01 recorded a net-cost plus of 9.45 per cent that is higher than the 8.87 per cent, the third quartile. This net-cost-plus result could be considered being consistent with the arm's length consideration.

Following on the same approach for the following two years, ZA Case 01 has returns, which are below the arm's length consideration, i.e. lower than the first quartile of the inter-quartile range. This confirms the SARS position that ZA Case 01 did not deal at arm's length in all the years under investigation where the adjusted net-cost-plus is below the first quartile. Hence, adjustments are to be made to reflect what could be considered the arm's length consideration.

#### 5.4.5.1 Positioning of the ZA Case 01 in the inter quartile range

From the comparable results in the previous section it seems that the tested party, ZA Case 01 realises returns lower than the median in most years. However, it was not yet objectively established if the first quartile is the appropriate position for ZA Case 01 within the comparable dataset.

In order to establish ZA Case 01's position relative to the comparable dataset, the country risk adjustment was applied thereby positioned ZA Case 01 as if it was hypothetically operating in the comparable EU conditions. The results obtained from the analysis are tabled in Table 46.

Table 46: Inter quartile range positioning of ZA Case 01

<b>Tested Party</b>	<b>2001</b>	<b>6 months to Dec 2000</b>	<b>6 months to June 2000</b>	<b>1999</b>	<b>1998</b>	<b>1997</b>	<b>1996</b>	<b>Ave.</b>	<b>Std Dev.</b>
Actual ROA	3.11%	2.65%	5.25%	11.63%	2.76%	-1.65%	9.55%	4.27%	4.41%
Differential in Bond yields	6.60%	7.44%	7.44%	9.31%	11.66%	8.18%	8.96%		
Adjusted ROA	-3.49%	-4.79%	-2.19%	2.32%	-8.89%	-9.83%	0.59%		
<b>Inter quartile range</b>									
Minimum	0.22%	3.95%	3.95%	0.42%	2.45%	-1.64%	-11.70%	-1.05%	0.056
First quartile	5.41%	5.29%	5.29%	7.95%	5.57%	5.77%	-0.90%	4.85%	0.030
Median	9.12%	10.61%	10.61%	10.42%	8.86%	9.52%	5.47%	9.00%	0.019
Third quartile	17.72%	18.03%	18.03%	12.47%	14.66%	16.03%	7.71%	14.44%	0.039
Maximum	28.66%	24.41%	24.41%	14.90%	25.90%	35.03%	46.25%	29.19%	0.106

(Source: own compilation)

From this analysis in Table 46 ZA Case 01 falls above the median in the 1996 and 1999 years of assessment. In applying the arm's length principle, a reward consistent with the arm's length standard could arguably be the median or the mid point of the comparable arm's length range (South Africa 1999:27).

This view is consistent with the view expressed in the functional analysis with regards to ZA Case 01's risk profile (see 5.3.6). Any material change to either functions performed, assets used or risk assumed in the connected party dealings would be considered and as such would be incorporated into the positioning of ZA Case 01 in the inter quartile range. The CATPM, in the proposed positioning analysis is expected to provide further evidence what ZA Case 01 position should be within the arm's length range (refer to sections 4.4.3 where it is discussed and Appendix 7.2 where it is disclosed).

#### 5.4.5.2 Government bond yield benchmark

In order to apply the risk-reward concept in practice, the approach followed as an alternative to the current practice is broadly based on the fact that bond yield rates on government long bonds (maturity 10 years and older) provides a fair investment benchmark for virtually risk free investments. Furthermore, the interest rate risk is included in the price of the bond over the duration of the bond. Bonds with a similar coupon and the differential sensitivity to changes in interest rates are included.

The perceived and actual risk a company are being exposed to within a national economy will equate to a mark-up being added to the bond yield rate that is a fair proxy of the investor's expected return for accepting the "additional" risk attached to the investment. In the analysis, the

bond yield rate of South Africa is applied to the asset base of the tested party and a return of at least equal to the bond yield rate (conservative stance) is determined as tabled in Table 43.

Table 47: Bond Yield Adjustment

	2001	6 months to Dec 2000	6 months to June 2000	1999	1998	1997	1996	
	R'000	R'000	R'000	R'000	R'000	R'000	R'000	
<i>Total Assets</i>	815,444	549,130	476,206	435,329	303,852	223,317	318,343	
RSA Long Bond Yield	11.63%	12.88%	12.88%	16.36%	14.14%	16.19%	14.56%	
Return on total assets	0.823%	3.114%	2.653%	5.246%	11.629%	2.764%	-1.653%	
Expected EBIT	94,836	35,364	30,668	71,220	42,965	36,155	46,351	
<i>Income Statement as reported</i>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	
Cost of Sales	-916,298	-318,207	-592,702	-480,905	-338,550	-304,473	-326,120	
Operating Costs	-150,458	-46,874	-72,791	-54,598	-44,077	-35,246	-33,854	
EBIT	25,395	14,568	24,980	50,625	8,397	-3,691	30,397	
Net-cost-plus	2.381%	3.990%	3.754%	9.454%	2.195%	-1.086%	8.444%	
<i>Adjusted Income Statement</i>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	
Adjusted Cost of Sales	-846,857	-297,411	-587,014	-460,310	-303,982	-264,627	-310,166	
Operating Costs	-150,458	-46,874	-72,791	-54,598	-44,077	-35,246	-33,854	
EBIT	94,836	35,364	30,668	71,220	42,965	36,155	46,351	
Adj. Result to Cost of Sales	-69,441	-20,796	-5,688	-20,595	-34,568	-39,846	-15,954	
Adjusted Net-cost-plus	9.509%	10.272%	4.648%	13.832%	12.344%	12.057%	13.473%	
Gross Profit per cent	21.85%	21.66%	14.98%	21.47%	22.29%	21.73%	20.55%	
<b>ADJUSTMENT</b>								<b>Total</b>
Tax Rate	30%	30%	30%	30%	30%	35%	35%	<b>R'000</b>
Adjusted Taxation	20,832	6,239	1,706	6,178	10,370	13,946	5,584	64,856
STC	8,680	2,599	711	2,574	4,321	4,981	1,994	25,861
Total Taxation	29,512	8,838	2,417	8,753	14,691	18,927	7,578	90,717

(Source: own compilation)

In undertaking the abovementioned analysis in Table 47 the following should be noted:

- The transfer pricing adjustment increased from R 67 million to R 90 million, inclusive of Secondary Taxation on Companies (deemed dividend provision in the Act). The significance of the transfer pricing adjustment in monetary terms underlines the importance for business and tax authorities to ensure accurate application of transfer pricing.
- The turnover figure represents the tested party dealings with the domestic market and is a fair representation of unconnected party dealings. Although not disclosed, it could be verified.
- The operating costs disclosed in the financial statements are costs the tested party incurs and does not form part of any connected party dealings.

- The abovementioned facts substantiate that the adjustment is made at the cost of sales line, the connected party transaction where transfer might occur.
- The analysis treats the tested party on par with the risk profile of a government bond yield. In reality, the tested party's risk profile is not equal to that of a government bond and one would expect it to attract a margin for perceived higher risk.
- This margin for risk cannot be objectively allocated in circumstances where the company's credit rating is not known, hence the conservative approach to determine the minimum benchmark. The analysis is based on the following underlying assumptions:
  - The South African long government bond yield rates (long bond) are a fair proxy for a relative risk free investment in South Africa.
  - Usually an investor would expect a return on assets (or the investment) of at least equal to the government bond yield rates. Investors usually add a margin to the risk free rate to compensate them for increased risk in any other investment (Brigham *et al.*, 1999:178). It is very difficult to calculate this mark-up or premium objectively in the absence of published company credit ratings, in this instance ZA Case 01. This prompted the use of the bond yield benchmark as an indication of the minimum (at least be satisfied with a risk free return) return an investor would be satisfied with for investing in South Africa.
- Earnings before interest and tax (EBIT) are the return the investor earns on assets (investment). Using EBIT as the most appropriate benchmark for the return on the investment is based on (Brigham *et al.*, 1999: 180):
  - Expenditure items such as interest and tax could differ substantially from one company to the next, as well as from one year to the next.
  - Interest expense is based on financing structure that could vary greatly amongst companies and over time within the same company.
  - Taxation expense, is influenced by financial performance of previous years, and can distort the return calculations.

- Adjustment to EBIT is made with respect to the difference amongst expected return on assets (bond yield benchmark) and realised return (ZA Case 01) as measured by return on assets.
- The adjustment is applied to the income statement to effect the adjustment to the line item where connected party transactions take place, in this specific instance, the cost of sales line.

In the determination of the arm's length consideration under the current approach, ZA Case 01 does not derive a result that is consistent with the arm's length consideration for the years 1997 through to 2002, excluding 1999. The analysis does not provides any indication of the risk identified in the functional analysis of ZA Case 01 (refer to section 5.3.6 for the analysis) that could be influential in the relative level of profitability ZA Case 01 realised.

The Comparability Adjustment Transfer Pricing Model (CATPM) makes use of a variety of factors (refer to section 4.4.1 and 4.5.2.1) that measures risk insofar as it is significant in the estimation of profitability and consequently the arm's length consideration. Applying the CATPM to the data concerning ZA Case 01 and making use of explanatory variables (factors that impact on profitability) in determining the response variable (profit level indicator, net-cost-plus "NCP"), the arm's length consideration is a function of functions performed, assets used and risk assumed with risk assumed being objectively determined.

## **5.5 A Comparability Adjustment Transfer Pricing Model**

The CATPM, which is the focus of this research, has been described in detail in section 4.4. Uncertainty exists in transfer pricing insofar as adjustments to comparable data is necessary and in the event that a tested party is found to be in contravention of the arm's length consideration, what the adjustment position in the arm's length range should be. In determining the arm's length consideration, the OECD Guidelines (OECD 1995:I-7,I-17,I-19,I-25) as well as the South African PN (South Africa, 1999: 9) requires adjustments to be made in order to enhance comparability.

In following the current approach as described in section 5.4.4, the results is not conclusive whether adjustments is required in order to enhance comparability. **This is due to the inexact nature of transfer pricing (OECD, 1995:I-5 and South Africa, 1999:27) and the practice of determining a range of profit level indicators with the adjustment usually enacted at the**

mid-point (South Africa, 1999:27), or median of the range. Hence, the CATPM is used for ZA Case 01 to shed some light on the noted uncertainties, in accordance with the objectives of the research (refer to section 1.2).

### 5.5.1 Comparable Analysis results under the CATPM

In practice, information constraints make the application of the traditional methods (refer to section 3.2.2.4 for a detailed discussion) not viable mainly due to the lack of publicly available information on comparable uncontrolled transactions or gross margins. In an attempt to overcome these information constraints, it is often necessary to resort to the transactional profits methods (refer to section 3.3.2 for a detailed discussion).

The comparable search results for the CATPM were discussed in section 4.5.1. In order to apply the CATPM to ZA Case 01, the dataset was extended to include information for the financial years 1996 through to 2002, the period over which the tested party, ZA Case 01 is analysed. The summary statistics of the dataset under consideration is tabled in Table 48.

*Table 48: CATPM Summary Statistics for 1996 through 2002*

<i>Summary measures for selected variables</i>								
	CATPM Inv Risk	CATPM Rec Risk	CATPM Liq Risk	CATPM Activity Risk	CATPM Sol Risk	CATPM Fin Lev	CATPM Tax Lev	Net- cost- plus
Observations	262.000	262.000	262.000	262.000	262.000	262.000	262.000	262.000
Mean	0.256	8.046	1.576	2.077	114.205	0.857	0.853	0.078
Median	0.120	1.505	1.346	2.033	6.586	0.937	0.704	0.036
Standard deviation	0.965	32.305	1.170	0.847	883.324	0.695	2.109	0.310
First quartile	0.056	0.798	1.064	1.513	2.283	0.675	0.632	0.019
Third quartile	0.178	3.532	1.737	2.598	16.756	1.013	0.999	0.069

*(Source: own compilation)*

From the statistical summary, in Table 48 a NCP arm's length consideration range (the inter-quartile range) between 1.9 per cent, the lower end of the range, to 6.9 per cent, the higher end of the range, with a median NCP of 3.6 per cent (read off the last column marked Net-cost-plus). In the event that the tested party, ZA Case 01, falls outside this range, and adjustment would ordinarily be made to the financials statements, in particular the earnings before interest and tax ("EBIT"). The same approach is followed if any of the other profit level indicators are used.

The arm's length NCP range, 1.9 per cent to 6.9 per cent, in Table 48 (inter-quartile) does not provide insight into what factors from the 262 observations are significant insofar as the

determination of the boundaries of the arm's length NCP range. Making use of the population of comparable companies (determination of the population is discussed in section 4.5.1) in comparison to the sample as determined under the current approach (refer to section 5.4.4) the arm's length NCP range is deemed to be between 2.63 per cent and 5.56 per cent (refer to Table 40 for the NCP results).

The median of the current approach is 3.9 per cent whilst the median under the CATPM is 3.6 per cent (according to the summary statistics in Table 48). The median NCP arm's length consideration differs slightly, albeit that the spread of the data under the current approach (2.63 per cent to 5.56 per cent) is tighter than under the CATPM approach (1.9 per cent to 6.9 per cent). The smaller spread of data is as a result of individual screening that minimise the potential comparable companies (9 companies over 6 years that equates to 54 observations) compared to 262 observations used in the CATPM.

The sample, as tabled in Table 39, current approach's determination is subjective and can be seen as ambiguous because of the qualitative screening in the comparability analysis. The quality of qualitative screening is dependent on the analytical ability and experience of the analyst undertaking the analysis. In order to minimise potential ambiguity, the objectives of this research in section 1.2 clearly states that by using multiple regression in the CATPM, the aim is to enhance comparability analysis by estimating weights that determine the quantitative impact of mutually exclusive and collectively exhaustive ("MECE") ratios on profitability.

Ambiguity and subjectivity is further limited by the CATPM where the total population conforming to the quantitative screening criteria is used. Substantial differences in the median is not expected, (evidenced by 3.6 per cent compared to 3.9 per cent) however, the significant contribution of the CATPM is the determination of the arm's length range (the interquartile range) lower and upper limits that has an impact on whether an adjustment is made or not. Substantial differences exist with the arm's length range under the current approach being 2.63 per cent to 5.56 per cent and the CATPM being 1.9 per cent to 6.9 per cent.

In accordance with the current approach, if the tested party falls outside the 2.63 to 5.56 per cent range, an adjustment to profitability (NCP) in the case of ZA Case 01, the mid-point, 3.6 per cent is made. According to the CATPM, if the tested party falls outside the 1.9 to 6.9 per cent range, an adjustment is made to 3.9 per cent. The difference in the thresholds according to the arm's

length range is significant (1.9 per cent compared to 2.63 per cent and 6.9 per cent compared to 5.56 per cent) especially if the determination of these thresholds is model driven rather than analyst interpretation. In addressing potential material tax consequences for an MNE, an approach that does not rely on possible subjective analysis to determine whether an adjustment is to be made or not, is clearly more attractive.

### 5.5.2 CATPM results

The regression aim to predict Y, (profitability) = Net-cost-plus from a set of X variables (the CATPM factors), which are the empirical mutually exclusive and collectively exhaustive (“MECE”) risks and leverages. Data used for the CATPM model is the 262 observations comparable to ZA Case 01 for the financial years 1996 through to 2002. Although all seven variables are theoretically essential to the CATPM, removing one or several can reduce or eliminate multicollinearity (nearly a linear relationship among a set of explanatory variables (Albright *et al.*, 2003:635) while maintaining the MECE requirement. In order to achieve the elimination of multicollinearity whilst maintaining the MECE, a correlation matrix for the seven variables was calculated as illustrated Table 49.

Table 49: Correlation Matrix CATPM factors 1996 to 2002

	CATPM Inv Risk	CATPM Rec Risk	CATPM Liq Risk	CATPM Activity Risk	CATPM Sol Risk	CATPM Fin Lev	CATPM Tax Lev
CATPM Inv Risk	1.000						
CATPM Rec Risk	-0.060	1.000					
CATPM Liq Risk	0.537	0.048	1.000				
CATPM Activity Risk	-0.338	-0.086	-0.166	1.000			
CATPM Sol Risk	-0.005	-0.024	-0.014	-0.080	1.000		
CATPM Fin Lev	-0.049	0.037	0.029	0.054	0.030	1.000	
CATPM Tax Lev	0.013	-0.018	-0.019	-0.103	-0.003	-0.086	1.000

(Source: own compilation)

The correlation matrix indicates that liquidity and inventory are somewhat correlated; with the coefficient of correlation 0.537 which means that one of the two factors could be excluded from the regression. There is no established threshold for elimination or no rule for determining which

one of the pair should be eliminated, therefore for the purposes of this regression both are accepted.

Table 50: Net-cost-plus regression results

<i>Summary measures</i>		Change	% Change			
Multiple R	0.8551	0.0054	0.6%			
R-Square	0.7313	0.0092	1.3%			
Adj R-Square	0.7282	0.0082	1.1%			
StErr of Est	0.1617	-0.0024	-1.5%			
<i>ANOVA Table</i>						
Source	df	SS	MS	F	p-value	
Explained	3	18.3631	6.1210	234.0341	2.640E-73	
Unexplained	258	6.7479	0.0262			
<i>Regression coefficients</i>						
	Coefficient	Std Err	t-value	p-value	Lower limit	Upper limit
Constant	-0.1738	0.0177	-9.8264	1.455E-19	-0.2086	-0.1389
CATPM Liq Risk	0.1302	0.0102	12.7867	2.506E-29	0.1102	0.1503
CATPM Inv Risk	0.1539	0.0124	12.4469	3.608E-28	0.1295	0.1782
CATPM Rec Risk	0.0009	0.0003	2.9742	3.215E-03	0.0003	0.0015

(Source: own compilation)

### 5.5.3 Interpretation of regression results

#### 5.5.3.1 Coefficient of determination

The outputs to be considered are tabulated in Table 50. R Square, or  $R^2$ , the coefficient of determination is a measure of goodness of linear fit (Berenson and Levine, 1999:749).  $R^2$  always has a value between 0 and 1 and the coefficient of determination can be interpreted as the fraction of variation of the response variable (NCP) explained by the regression line (as defined by the CATPM factors) Albright *et al.*, (2003:571). R Square, in Table 50 (Step 3 of the multiple stepwise regression, see Appendix 7.3) indicates that inventory, receivable and liquidity explain 73% of variation in NCP. Alternatively, 27% of the variation of NCP is not explained by the CATPM, in particular the inventory, receivable and liquidity leverage factors, commonly referred to as explanatory variables.

#### 5.5.3.2 Standard error

The standard error of estimate, as provided in the regression output in Table 50, is the standard deviation (is a measure of variation, how values fluctuate around the mean or average) around the line of regression (Berenson and Levine, 1999:749) The standard error of estimate is equal to 0,1617. Generally, the standard error of estimate indicates the level of accuracy of the predictions made from the regression equation.

The smaller the value, the more accurate predictions ought to be (Albright *et al.*, 2003:570). The standard error or estimate of 0.1617 of the regression in Table 50 indicates the typical error likely when the fitted value (CATPM factors) based on the regression line to predict or estimate NCP. In order to determine the acceptability of the accuracy and the expected error, a comparison with the standard deviation of the factors under consideration, as tabled in Table 48 is made.

One measure of comparison is the standard deviation of the NCP, 0.31 as tabled in Table 48. The value of 0.31 is the standard deviation of the residuals around a horizontal line positioned at the mean value, 0.078 of NCP. The mean value would be the relevant regression line if no explanatory variables such as inventory, receivables, liquidity and financial leverage were used. The standard deviation of NCP is a measure of the estimate error (0.31) if the mean is used to estimate NCP for all the comparables in the dataset. The standard error of estimate of 0.1617 of the regression is considerably smaller than the standard deviation of NCP that implies a significant improvement in reducing the estimate error (Albright *et al.*, 2003:570).

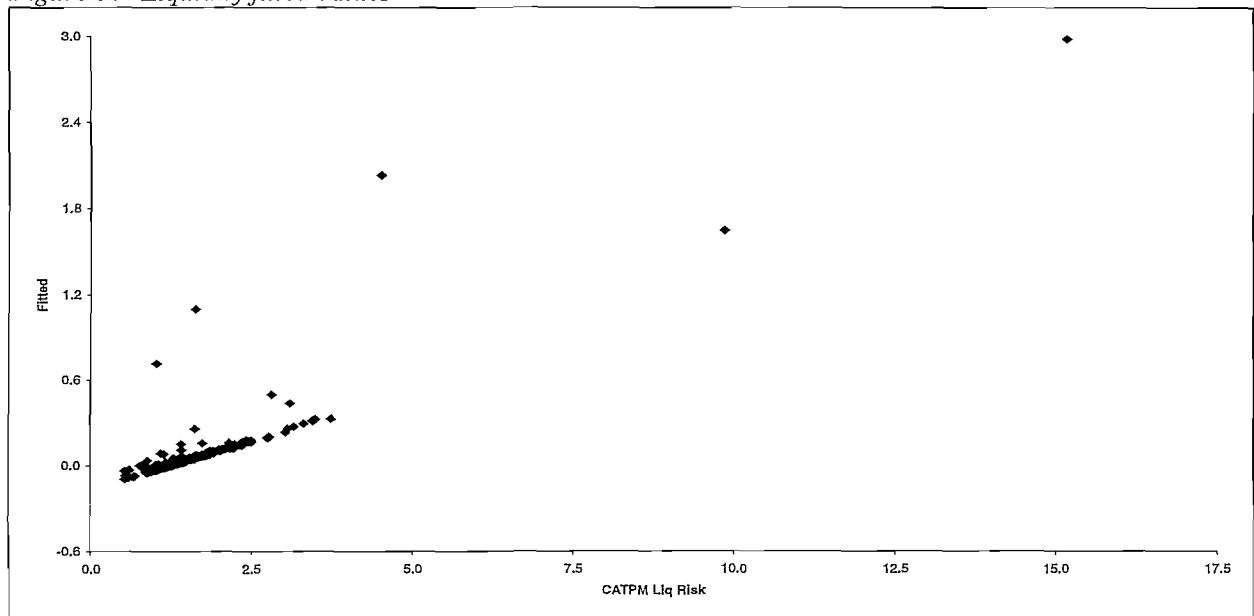
### ***5.5.3.3 Test for overall fit***

In analysing the test for overall fit, the ANOVA table illustrated in Table 50 are considered. The R square value is acceptable (value of 0.7313); the standard error of estimate of 0.1617 is significantly smaller than the standard deviation of the NCP. Furthermore, the  $F$ -ratio 234.034 is high (if it is large, then the explained variation is large relative to the unexplained variation, thus is has explanatory value) and its significance  $F$  ( $P$ -value) test is very small  $2.640^{-73}$ . According to Albright *et al* (2003:632) if the  $P$ -value is less than 0.05 in combination with a large  $F$ -ratio, then the explanatory variables such as inventory, receivable and liquidity has some explanatory value of NCP.

Another consideration with regards to the regression output is  $t$ - values. The  $t$ -values for the regression coefficients indicates which of the potential explanatory variables (CATPM factors) are useful in explaining NCP, the response variable. A  $t$ -value measures the ratio of estimated coefficient to its standard error, it is an indicator of how many standard errors the regression coefficient is from 0 Albright *et al.*, (2003:632). A  $t$ -value can be used to determine if any particular explanatory variable of the CATPM should be included in the CATPM regression equation. In the event that an explanatory variable's coefficient equals 0, it is pointless to include such a variable in the CATPM equation, the 0 coefficient will cancel its effect on the response

variable, NCP. Table 50 does not indicate a  $t$ -value of 0 for any of the explanatory variables, hence none of them are excluded from the CATPM equation (refer to section 4.4.2 for a discussion)  $\alpha^i = a + \beta_1 \frac{Inv}{Sales} + \beta_2 \frac{Rec}{Inv} + \beta_3 \frac{CA}{CL} + \beta_4 \frac{Sales}{TA} + \beta_5 \frac{Debt}{Capital} + \beta_6 \frac{EBT}{EBIT} + \beta_7 \frac{NP}{EBT} + \varepsilon$ . The fitted pattern of the data, in particular the CATPM factor (MECE ratio) liquidity is illustrated in Figure 33.

Figure 33: Liquidity fitted values



(Source: own compilation)

The linear trend from the liquidity fitted value scatter plot is clearly visible, as illustrated in Figure 33. Outliers are present in the data with outliers being indicated by points outside the majority of the fitted values. In analysing and interpreting the results obtained from the CATPM, and in particular, the regression, the following emerges:

- Inventory, receivables and liquidity is significant explanatory variables in estimating the response variable (NCP)
- The estimation of the response variable the coefficient of determination, R square explains 73% of variation in NCP
- The ANOVA table illustrated in Table 50 indicates a high  $F$  – ratio 234.034 (if it is large, then the explained variation is large relative to the unexplained variation, thus it has explanatory value) and its significance  $F$  (P-value) being very small  $2.640^{-73}$ . The

explanatory variables with a p-value less than 0.05 in combination with a large  $F$ -ratio, then the explanatory variables such as inventory, receivable and liquidity has explanatory power of NCP (Albright *et al.*, 2003:632).

- The regression analysis indicates that in using the coefficients determined with the CATPM that the arm's length consideration  $\alpha^i$  can be formulated as

$$\alpha^i = a + \beta_1 \frac{Inv}{Sales} + \beta_2 \frac{Rec}{Inv} + \beta_3 \frac{CA}{CL} + \varepsilon \quad \text{or} \quad \hat{\alpha}^i = -0.1738 + 0.1302 \frac{Inv}{Sales} + 0.1539 \frac{Rec}{Inv} + 0.0009 \frac{CA}{CL}$$

#### 5.5.3.4 Application of the CATPM regression output

In order to determine the arm's length consideration with the CATPM, the explanatory variables inventory, receivable and liquidity is used to estimate the arm's length consideration. In order to estimate the arm's length consideration, the following approach is followed:

- Determine the explanatory variables (CATPM factors or risk indicators) for the tested party (refer to Appendix 7.1 where ZA Case 01 explanatory variables as well as the respondent variables are disclosed).
- Use the estimated significant weights or coefficients determined by the regression analysis (inventory, receivables and liquidity) to estimate the arm's length consideration. The arm's length consideration is in accordance with Paragraph 1 of Article 9 of the OECD Model Tax Convention (OECD, 1995: I-3) "...conditions are made or imposed amongst... two [associated] enterprises in their commercial or financial relations ... *which would have been made amongst independent enterprises (unconnected parties) ...*".
- The basis of the estimation of the NCP arm's length consideration is the sum of the product of the estimated significant weights and the tested party's explanatory variables. The explanatory variables are only the ones indicated as significant (inventory, receivables and liquidity) by the multiple regression, including that of the intercept, as tabled in Table 51.

Table 51: CATPM Result 1996 to 2002

Regression NCP for the period 1996to 2002						
Estimation of the Arm's length consideration	Tested Party			Hypothetical first quartile Company		
	Tested Party Ratio's (Median)	Regression Output Coefficients or weights	Weights x Tested Ratio's	first quartile Ratio's	Regression Output Coefficients or weights	Weights x Median Ratio's
Intercept	1.000	-0.1738	-0.1738	1.0000	-0.1738	-0.1738
Inventory Risk	0.407	0.1539	0.0626	0.0557	0.1539	0.0086
Receivable Risk	0.557	0.0009	0.0005	0.7977	0.0009	0.0007
Liquidity Risk	1.716	0.1302	0.2234	1.0643	0.1302	0.1386
<b>Sum</b>			<b>11.28%</b>			<b>-2.59%</b>
<b>Difference amongst Tested Party and Comparable Data Sample</b>						<b>13.86%</b>
<b>Tested Party Profit Level Indicator</b>			<b>3.68%</b>			<b>3.68%</b>

Source: own compilation

The tested party, ZA Case 01 financial information in terms of the CATPM equation is provided in the part of Table 51, marked Tested Party. The coefficients of the explanatory variables that provide an  $R^2$  of 0.7313 is provided (refer to Table 50 for the regression output). For instance, liquidity risk for the tested party have a value of 1.716 and the coefficient as determined by the regression analysis is 0.1302, resulting in a CATPM factor of 0.2234. The sum of all these CATPM factors is 11.28%. According to the proposition of the CATPM, should ZA Case 01 earn a NCP of 11.28 % in the EU, given its risk factors or explanatory variables? The tested party realised a NCP of 3.68%, clearly not indicative of what the estimation of the arm's length consideration purport to be.

Positioning analysis with regards to the output from the CATPM is significant. The South African PN (South Africa, 1999:27) reiterates that in the event an adjustment is made (when the tested party falls outside the arm's length range), the midpoint is appropriate. This research, in the context of ZA Case 01 indicates that the arm's length NCP consideration is higher than the median or mid-point. The median arm's length consideration, according to the CATPM is 2.13%, considerably lower than 11.28%, the estimated NCP. The position of ZA Case 01 within the arm's length range is above the third quartile of the arm's length range (refer to Appendix 7.2 where the third quartile is included in the analysis.)

## 5.6 Conclusion

From the investigation, ZA Case 01 did not derive a result consistent with the arm's length consideration for the years under consideration; irrespective if the current (see Table 41 and Table 45) or CATPM approach (see Table 51 and Appendix 7.2) was followed. The arm's length test was performed by making use of the TNMM method in conjunction with the bond yield model, which came to the same conclusion. Although the research does not focus on the provision of financial assistance, in the investigation financial assistance as contemplated in section 31 was identified and an adjustment for thin capitalisation was made. This tax adjustment amounts to R 18 million for the period under consideration which is indicative of the materiality of transfer pricing adjustments.

The adjustment for the transfer pricing of goods amounts to an adjustment of R 68 million for a total taxation adjustment of R 86 million. By making use of the bond yield model, the adjustment amounts to R 90 million. The difference in results amongst the bond yield model and the calculations under the TNMM is less than 5 per cent. The OECD Guidelines and PN 7 states that transfer pricing are not an exact science. The conversion of the bond yield model with the TNMM in this specific case is significant.

The total adjustment to taxable income of ZA CASE 01 is approximately R 300 million. The management of MNE's such as ZA Case 01 faces substantial challenges in determining their transfer prices and ensuring that they mitigate the risk of an adjustment in the advent of an investigation. The magnitude of the adjustments based on the dealings of connected parties is significant in ensuring effective administration of the arm's length principle.

In order to further test this approach, the CATPM was designed to crystallise comparability insofar as risk identified by using regression analysis to estimate the arm's length consideration. In addition to the hypothetical arm's length consideration, it is used to determine the position of the tested party within the constraints of the arm's length range.

A consideration from the CATPM output follows that ZACase 01 should earn an estimated NCP of 11.28 per cent. This is a significant observation seen in light that when applying the bond yield as an indicator for the difference in market risk, the bond yield adjusted NCP (refer to Table 45 for details) amounts to 10.25 per cent at the third quartile, the position of ZA Case 01 according to the

positioning analysis (refer to Appendix 7.2 where the third quartile is disclosed). When applying the Bond yield as an indicator, the conservative assumption is that a comparable company would at least earn return equal to the bond yield over time. Usually, companies are exposed to more risk than a bond yield; hence, one would expect returns in excess of the bond yield. Applying the CATPM, the excess or premium over the bond yield is (11.28 % less 10.25%) 1.03%, which seems reasonable in the circumstances.

Although, transfer pricing is regarded as a non-exact science, its outcomes are material in monetary terms. For business management and tax authorities alike, it is essential to apply theoretical approaches and research methodologies in the determination of the arm's length consideration, which could remove substantial subjective conclusions. Consequently, the most relevant research findings are considered in the next chapter.

## Chapter 6      Conclusions and recommendations

### 6.1 Conclusions

In concluding on the findings of this research, the overriding concept that transfer pricing is not an exact science but results in an exact exposure in terms of tax is concerning. Substantial work has been undertaken by the OECD and tax authorities such as the SARS in clarifying the concept of transfer pricing and provide some certainty to business on transfer pricing application.

The South African economy is becoming increasingly open (refer to 2.2.1.1 for the discussion) and is increasingly participating in global trade. The increase in the openness of the South African economy (see 2.2.1.1) is indicative of globalisation as well as emphasising the importance of transfer pricing in strategic business decisions as well as securing the South African tax base. In order to effectively deal with transfer pricing, it is essential that South African information be used in the determination of the arm's length consideration. Currently South African data pertaining to unconnected parties is not available forcing MNE's, professional advisors and the SARS to make use of foreign databases.

The determination of the arm's length consideration presupposes a profitability comparison amongst connected and unconnected parties. At best, transfer pricing results in an approximation of an arm's length consideration, hence the use of the arm's length range (see 1.6.2 and 3.2.2). In the event that a tested party's results falls with the arm's length range, it is deemed to be transacting according to the arm's length principle.

It is apparent from the research that MNE's management missed the following related opportunities:

- Out of 22 countries that was surveyed, only in Germany, more than half of the respondents include transfer pricing as part of their corporate strategic planning process (refer to Table 6 for more detail)
- MNE's are missing shareholder value building opportunities by not integrating transfer pricing up front in strategic business such as mergers, acquisitions, divestures, e-commerce and intellectual property management (see Table 6) with Germany (67 per cent) and Korea

(88 per cent) being the only countries that charge (in significant instances) intellectual property for tax and management purposes.

- Two thirds of parent and half of subsidiaries have not considered the transfer pricing issues around their e-commerce activities (see Table 5).
- Only eighteen per cent of MNE's that were involved in a recent merger used the opportunity to re-examine overall transfer pricing policies (see Table 5). Re-examination of transfer pricing policies provides opportunities to co-ordinate and ensure tax efficient transfer pricing policies

The proposition of a comparable approach and specifically a CATPM based on the arm's length principle has tremendous value, and in particular for the:

- management of multinational enterprises,
- professional advisory firms and
- tax authorities.

Transfer pricing is by nature non-exact. By virtue of accepting the non-exact nature of transfer pricing, ambiguity and subjective analysis are argued away with reference to the acceptance of the non-exact nature of transfer pricing. The proposition put forward by the CATPM (see section 4.4) unveils the true dynamics of transfer pricing, albeit that the arm's length principle (refer to 1.6.1 for a definition) is based on what would have been amongst connected and unconnected parties.

The first proposition of the arm's length principle, "what would have been" is where the CATPM provides significant insight. In determining the degree of comparability, including the adjustments required to establish it, an understanding of how unrelated companies evaluate potential transactions is required. The "what would have been" hypothesis is based on unconnected parties, when evaluating the terms of a potential transaction, will compare the transaction to the other options realistically available to them (such as profit maximisation or loss minimisation), and they will only enter into the transaction if they see no alternative that is clearly more attractive.

The arm's length consideration is equal to the consideration an unconnected party receives from a transaction that it derives the utmost benefit from. The determination of the arm's length consideration is in effect the determination of the utmost benefit (measured by profitability)

unconnected parties receive and extrapolate it to the transaction amongst connected parties. In the determination of the arm's length consideration under the current approach, ZA Case 01 does not derive a result (see 5.4.4.1) that is consistent with the arm's length consideration for the years 1997 through to 2002 (excluding 1999). The analysis does not provide any indication of the risk identified in the functional analysis of ZA Case 01 (refer to section 5.3.6 for the analysis) that could be influential in the relative level of profitability ZA Case 01 realised.

The adjustment for the transfer pricing of goods amounts according to the current approach results in an adjustment of R 68 million for a total taxation adjustment of R 86 million (inclusive of the adjustment for financial assistance which falls outside the scope of this research). By making use of bond yields, to reflect country or market differences, the transfer pricing adjustment amounts to R 90 million (see section 5.4.5.2).

The current approach lacks in objectively determining the positioning of the transfer pricing adjustment (see section 5.4.5.1). In imposing the bond yield differential to ZA Case 01, at a minimum (risk free rate is appropriate return without any premium on increased risk) ZA Case 01 can be viewed with reference to the EU comparable dataset (refer to Table 46 ). This positioning is based on the premise that an investor would at least expect ZA Case 01 to return equal or bigger than the bond yield rate. The more than or bigger is unquantifiable, hence the minimum return is determined and positioning in the arm's length range so determined.

The CATPM approach make use of a variety of factors (refer to section 4.4.1 and 4.5.2.1) that measures risk insofar as it is significant in the estimation of profitability, the arm's length consideration. Applying the CATPM to the data concerning ZA Case 01 and making use of explanatory variables (factors that impact on profitability) in determining the response variable (profit level indicator, NCP), the arm's length consideration is a function of functions performed, assets used and risk assumed.

In order to further test this approach, the CATPM was designed to conceptualise comparability insofar as risk identified by using regression analysis to estimate the arm's length consideration. In addition to the hypothetical arm's length consideration, the CATPM is used to determine the position of the tested party within the constraints of the arm's length range (see section Appendix 7.2).

An arm's length consideration according to the CATPM estimates that ZA Case 01 should earn an estimated NCP of 11.28 per cent (see Appendix 7.2). This is a significant observation seen in light that when applying the bond yield as an indicator for the difference in market risk (country risk premium), the bond yield adjusted NCP (refer to Table 45 for details) amounts to 10.25 per cent at the third quartile, the position of ZA Case 01 according to the positioning analysis (refer to Appendix 7.2 where the third quartile calculations is disclosed).

When applying the bond yield as an indicator, the conservative assumption is that a comparable company would at least earn return (profit) equal to the bond yield over time. Usually, companies are exposed to more risk than a bond yield; hence, one would expect returns in excess of the bond yield. Applying the CATPM, the premium over the bond yield is (11.28 % less 10.25%) 1.03%, which seems reasonable in the circumstances.

Another contribution of the CATPM is that objectively, ZA Case 01 should not be adjusted to the mid-point of the inter-quartile (arm's length range) as suggested by the South African PN 7. In making use of the explanatory variables (inventory, receivables and liquidity), an estimation of the response variable (NCP) is possible. In applying the coefficients determined by a multiple regression model to the explanatory variables of ZA Case 01, it is established that ZA Case position within the arm's length range is at the third quartile (refer to Appendix 7.2 for details).

### **6.1.1 Specific conclusions on arm's length consideration**

The current approach is based on determining comparable companies to ZA Case 01. The basis of comparability is the interpretation of the facts established by the functional analysis. The functional analysis (see section 5.3.3) identifies the significant functions, assets and risk assumed by ZA Case 01. Quantification of the functions performed, assets used and risk assumed is based on a combination of qualitative and quantitative factors (see sections 5.4.3.1 and 5.4.3.2).

In determining the arm's length consideration according to the current approach, subjectivity in the selection of the comparables of ZA Case 01, and in particular the comparability analysis steps tabled in Table 36 through to Table 38 is dependent on the experience of the analyst. The interpretation of the most significant functions in the MNE's operations that would entitle the member of the MNE that performs the significant functions should be entitled to the major share

of the profit emphasises further consideration to what is significant and to what extent significance influences profitability and comparability.

Management of MNE's, professional advisors and tax administrations are expected to exercise judgment and discretion, which give, rise to subjectivity and ambiguity. Furthermore, the adjustment to transactions of MNE's is not ambiguous (see sections 5.4.4.1 and 5.4.5.2). It is not surprisingly that a concerted effort should be made to clarify subjectivity and ambiguity. In this regard, the CATPM is based on a comparable dataset without any analyst interpretation of qualitative inclusion criteria (see section 5.4.3.2). The CATPM provides an alternative objective approach with specific outcomes such as:

- Improving the comparability analysis by using ratio analysis. Ratios or the relevant profit level indicators provides measures of functions, assets and risks, to use the information contained in financial statements and to guide the analysis of comparables; even in the absence of industry comparables (see section 4.4.1).
- Enhancing comparability analysis by estimating weights that determine the quantitative impact of mutually exclusive and collectively exhaustive ("MECE") ratios on profitability (see sections 4.5.2 and 5.5.3.4).
- Enhancing the comparability analysis through providing an objective measure based on regression techniques to produce point estimates of the arm's length consideration relative to the inter-quartile range (see and Appendix 7.2 ).

Working capital adjustments (refer to section 4.3.3) in conjunction with the CATPM provides a measure to enhance comparability to factors that influences profitability. In the event that the CATPM indicates that inventory, receivables or payables are significant explanatory variables in estimating the response variable (profitability), adjustments to reflect the time value of money on either the price of goods (sales) or cost (cost of sales) is imperative. Currently, adjustments are made without any substantiating evidence on the actual reasons behind the adjustments.

## **6.2 Recommendations**

The unavailability of comparable information on which a South African transfer pricing analysis is based is well known. Comparability analyses in South Africa are based on information obtained

from foreign sourced databases, such as Amadeus that is used in this research. In order to overcome the data constraints experienced, the following is recommended:

- Change the Company Act that makes it a statutory requirement for companies to file their financial statements publicly, on a unconsolidated as well as a consolidated basis, irrespective if it is a private or public company
- Establish a South African database that contains information on South African companies covering at least the following information:
  - Company name
  - Industry classification
  - Trade description
  - Activities undertaken
  - Complete financial statements on an unconsolidated and consolidated basis
  - Management information such as directors, ownership, auditors
  - If listed, share price information, sector on the securities exchange, primary and secondary listing particulars
- Recall PN 7 and PN 2 that provides guidelines and safe harbours that are vague and contributes to ambiguity
- Legislate transfer pricing documentation (at least the policy) and make it a statutory record requirement

## **6.2.1 Recommendation for further research**

### ***6.2.1.1 Establishment of CATPM database***

In order to minimise uncertainty and ambiguity currently experienced in transfer pricing administration, the CATPM can be used to provide clarity on the following:

- Categorisation of the South African economy on a functional basis, i.e., manufacturing, logistics, services, wholesale, retail, etc.
- Determination of sectors and sub-sectors, i.e., manufacturing, pharmaceutical, ethical, etc.

- Determination of thresholds or norms with respect to entity characterisation, i.e., manufacturing, fully fledged manufacturer to a toll manufacturer
- Determine explanatory variables for different sectors, entities, etc.

### ***6.2.1.2 Market forms***

One shortcoming in the application of the arm's length principle is that the reward consistent with the arm's length standard is based on a comparison of unconnected party dealings in a competitive market model. However, MNE's operate in various market structures and adjustments to emulate the forces of competition on pricing or profits are not performed.

Transfer pricing under less than perfect competitive structures such as monopolistic and oligopolistic market conditions is not considered in this research. The impact of the prevalence of these market conditions on transfer pricing has not been explored.

### ***6.2.1.3 Levels of Economic Development***

Consideration of transfer pricing in developed and developing economies is another field of research that has not been undertaken. The only exception to this criticism with regards to the lack of competition measurement in transfer pricing insofar as prices is by applying the comparable uncontrolled price and the comparable uncontrolled transaction methods.

### ***6.2.1.4 Impact of tax havens on MNE's effective tax rate***

The impact of harmful tax competition or tax havens is not investigated in this research. However, international business structures involving these tax havens are common; all MNE's does cite business reasons for the establishment and continuous business dealings through it.

This investigation does not explore the commerciality thereof. An empirical investigation aimed at identifying the commercial benefits tax havens provides to the MNE's in the advent of greater tax harmonisation and equalisation of corporate tax rates will add tremendous value to current literature.

### ***6.2.1.5 Profit split transfer pricing methodology***

Uncertainty with regards to the profit split method or the lack of use (refer to Figure 17 and Table 10 where the profit split is compared to the other methodologies) should not deter research on the

appropriateness of the method. International trade transactions are increasing and the lack of objective measures to separate transactions would increase the potential use of the profit split. The aim of this research is not to find possible alternative profit split applications, however cognisance of alternative approaches with the approaches that is discussed in Appendix 7.3 is worthwhile researching.

#### ***6.2.1.6 Ethical Dimension***

In conclusion, the ethical dimensions from a managerial point of view also warrant further research. Ultimately, a type of code of good conduct in the field of transfer pricing is needed.

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## Appendix 1. Branches of foreign entities operating in South Africa

Company Name	Domicile	Industry
1st Floor The Gabba	Bryanston	Services
ABN AMRO Bank NV	Johannesburg	Banking/Finance
ACNielsen SA BV and Nielsen Media Research	Southdale	Services
Action Equipment Company	Edenglen	Services
Actis	Saxonwold	Banking/Finance
Africa X-Ray Industrial & Medical (AXIM)	Halfway House	Services
African Bank Ltd	Halfway House	Banking/Finance
Agence Francaise De Developpement AFD	Sandton	Banking/Finance
AHI	Menlo Park	Banking/Finance
AHI	Menlo Park	Services
ATIC Services	Westhoven	Services
Babcock Plant & Equipment	Bloemfontein	Services
Banca di Roma	Sandton	Banking/Finance
Banco Espirito Santo	Bruma	Banking/Finance
Bandag Inc South Africa	Edenvale	Services
Bank of Baroda	Durban	Banking/Finance
Bank of Tokyo-Mitsubishi Ltd, The	Sandton	Banking/Finance
Barra International Ltd	Newlands	Banking/Finance
Belgolaise Bank	Benmore	Banking/Finance
Bell Dewar & Hall Inc	Houghton	Services
Bisset Boehmke McBlain Attorneys	Cape Town	Services
Buchanan Boyes Smith Tabata Attorneys bb	Cape Town	Services
Byers Auto Glass	Kenwyn	Services
Bytes Specialised Solutions	Johannesburg	Services
Canadian High Commission Trade Office	Parklands	Services
Daewoo International Corporation Johannesburg Branch	Sandton	Services
Deneys Reitz Inc	Sandton	Services
Det Norske Veritas	Roggebaai	Services
Dresdner Kleinwort Wasserstein	Johannesburg	Banking/Finance
Emerging Markets Partnership - Southern Africa	Braamfontein	Banking/Finance
Fintrex	Craighall	Services
Forge Ahead	Gauteng	Services
Forklift Specialities	Pinetown	Services
French South African Trade Development Corporation Co-FRANSA	Craighall	Services
Fujitsu Services	Johannesburg	Services
Goldman Judin Maisels Inc	Sandton	Services
Goldman Sachs International	Benmore	Banking/Finance
Habib Overseas Bank Ltd	Marshalltown	Banking/Finance
Hahn & Hahn Inc	Hatfield	Services
HBZ Bank Ltd	Qualbert	Banking/Finance
Hentrich Bergs & Associates	Johannesburg	Services
IIR - Institute for International Research	Parklands	Services
IMS Health International	Johannesburg	Services
ING South Africa	Benmore	Banking/Finance

<b>Company Name</b>	<b>Domicile</b>	<b>Industry</b>
Interlink Translation Services	Roosevelt Park	Services
JP Morgan Chase	Johannesburg	Banking/Finance
JP Morgan Chase	Johannesburg	Services
KLM Royal Dutch Airlines	Johannesburg	Services
Leaders Unlimited Korn/Ferry International	Sandton	Services
Lowe Bull	Bryanston	Services
Maison Francaise Du Cap - French Business Centre	Gardens	Services
Mitsubishi Corporation	Sandton	Banking/Finance
Netsoft Inc	Umhlanga Rocks	Services
Ogilvy	Durban	Services
Only The Best	Cresta	Services
Open Trade Training Centre	Dersley	Services
P&H MinePro Services	Johannesburg	Services
Regus International	Gallo Manor	Services
Regus International	Durban	Services
Relocation Africa	Claremont	Services
Rennie Murray & Co Pty Ltd	Durban	Banking/Finance
Rentokil Initial	Clareinch	Services
Safcor Panalpina	Johannesburg	Services
Saitex	Cresta	Services
Search Partners International	Johannesburg	Services
SITA INC	Johannesburg	Services
Sofema	Centurion	Services
South African Bank of Athens Ltd	Johannesburg	Banking/Finance
Standard Chartered Bank SA	Sandton	Banking/Finance
State Bank of India	Rosebank	Banking/Finance
Stewart Scott International	Sandton	Services
Sumitomo Mitsui Banking Corporation	Bryanston	Banking/Finance
Top Reizen	Northriding	Services
Travel Insurance Consultants	Cramerview	Services
UCB	Braamfontein	Services
WestLB AG	Johannesburg	Banking/Finance
Wolff Neuhaus & Co	Highlands North	Banking/Finance
Wolff Neuhaus & Co	Highlands North	Services
Young & Rubicam	Woodmead	Services

## Appendix 2. Industry classification

### Appendix 2.1. Industry classification on Amadeus database

Bureau van Dijk Electronic Publishing (BvDEP) has developed a detailed cross-reference system linking multiple national and international industry classification systems from around the world. This unique cross-referencing system provides BvDEP databases with the most accurate cross-border industry searching and analysis possible.

Each country uses one industrial classification system as its national system for cataloguing the industries of the companies filing accounts with the official registries. All company accounts filed in a given country, therefore, indicate the company's activities with this national code, whether it is a code unique to that country or a widely used international code. The national codes relevant for companies on the AMADEUS databases are listed in the table below, along with the three international codes (NACE 1.1, US SIC, NAICS) used in the cross-reference system.

Table 52: Amadeus database industry classification sources

Code	Description	Countries covered	Max No. of digits
NACE Rev 1.1	Nomenclature statistique des activités économiques dans la Communauté européenne	23 European countries	4
US SIC	Standard Industrial Classification	International Code and National Code for: USA & 145 non European countries	4
NAICS 2002	North American Industry Classification System (2002)	International Code and National Code for USA listed companies	6
UK SIC 2003	Standard Industrial Classification	United Kingdom	5
NAF	Nomenclature d'Activités Françaises	France	4
WZ 2003	Klassifikation der Wirtschaftszweige vom Statistischen Bundesamt aus der Revision von 2003	Germany/Austria	5 <sup>1</sup>
ATECO 2002	Classificazione delle attività economiche (2002)	Italy	5
CNAE	Clasificación Nacional de Actividades Económicas	Spain/Portugal	4
BIK	Bedrijfsindeling Kammers van Koophandel	Netherlands	6
NACE-BEL	Nomenclature générale des Activités économiques en Belgique	Belgium	5
SNI-SE	Svensk Näringsgrensindelning	Sweden	5

(Source: Bureau van Dijk, :2003 Amadeus Database No. 105)

## Appendix 2.2. NACE Revision 1.1 Industry classification

All the national industry codes used on the database are cross linked together using the international NACE- revision 1.1 codifications as a reference. Any individual national code selected will search the whole database and will not be limited to those companies which have been assigned that code. The comprehensive list of the NACE Rev.1.1 codifications used in this research is as tabled in

*Table 53: NACE Revision 1.1 Codes*

<b>NACE Rev 1.1 Code</b>	<b>Definition</b>
01	Agriculture, hunting and related service activities
011	Growing of crops; market gardening; horticulture
0111	Growing of cereals and other crops not elsewhere specified
0112	Growing of vegetables, horticultural specialties and nursery products
0113	Growing of fruits, nuts, beverage and spice crops
012	Farming of livestock
0121	Farming of cattle, sheep, goats, horses, asses, mules and hinnies; dairy farming
0122	Other livestock farming; production of animal products not elsewhere specified
013	Growing of crops combined with farming of livestock (mixed farming)
014	Agricultural and animal husbandry service activities, except veterinary activities
015	Hunting, trapping and game propagation including related service activities
02	Forestry, logging and related service activities
05	Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing
10	Mining of coal and lignite; extraction of peat
101	Mining and agglomeration of hard coal
102	Mining and agglomeration of lignite
103	Extraction and agglomeration of peat
11	Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction excluding surveying
111	Extraction of crude petroleum and natural gas
112	Service activities incidental to oil and gas extraction excluding surveying
12	Mining of uranium and thorium ores
13	Mining of metal ores
131	Mining of iron ores
132	Mining of non-ferrous metal ores, except uranium and thorium ores
14	Other mining and quarrying
141	Quarrying of stone, sand and clay
142	Mining and quarrying not elsewhere specified
1421	Mining of chemical and fertilizer minerals
1422	Extraction of salt
1429	Other mining and quarrying not elsewhere specified
15	Manufacture of food products and beverages
151	Production, processing and preservation of meat fish, fruit, vegetables, oils and fats
1511	Production of meat and meat products
1512	Processing and preserving of fish and fish products

<b>NACE Rev 1.1 Code</b>	<b>Definition</b>
1513	Processing of fruit and vegetables
1514	Manufacture of vegetable and animal oils and fats
152	Manufacture of dairy products
153	Manufacture of grain mill products, starches and starch products, and prepared animal feeds
1531	Manufacture of grain mill products
1532	Manufacture of starches and starch products
1533	Manufacture of prepared animal feeds
154	Manufacture of other food products
1541	Manufacture of bakery products
1542	Manufacture of sugar
1543	Manufacture of cocoa, chocolate and sugar confectionery
1544	Manufacture of macaroni, noodles, couscous and similar farinaceous products
1549	Manufacture of other food products not elsewhere specified
155	Manufacture of beverages
1551	Distilling, rectifying and blending of spirits; ethyl alcohol production from fermented materials
1552	Manufacture of wines
1553	Manufacture of malt liquors and malt
1554	Manufacture of soft drinks; bottling of mineral waters
16	Manufacture of tobacco products
17	Manufacture of textiles
171	Spinning, weaving and finishing of textiles
1711	Preparation and spinning of textiles fibres; weaving of textiles
1712	Finishing of textiles
172	Manufacture of other textiles
1721	Manufacture of made-up textile articles, except apparel
1722	Manufacture of carpets and rugs
1723	Manufacture of cordage, rope; twine and netting
1729	Manufacture of other textiles not elsewhere specified
173	Manufacture of knitted and crocheted fabrics and articles
18	Manufacture of wearing apparel; dressing and dyeing of fur
181	Manufacture of wearing apparel, except fur apparel
182	Dressing and dyeing of fur; manufacture of articles of fur
19	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear
191	Tanning and dressing of leather; manufacture of luggage, handbags and harness
1911	Tanning and dressing of leather
1912	Manufacture of luggage, handbags and the like, saddlery and harness
192	Manufacture of footwear
20	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
201	Sawmilling and planing of wood
202	Manufacture of products of woods, cork straw and plaiting materials
2021	Manufacture of veneer sheets; manufacture of plywood, laminated board, particle board and other panels and boards

<b>NACE Rev 1.1 Code</b>	<b>Definition</b>
2022	Manufacture of builders' carpentry and joinery
2023	Manufacture of wooden containers
2029	Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials
21	Manufacture of paper and paper products
2101	Manufacture of pulp, paper and paperboard
2102	Manufacture of corrugated paper and paperboard and of containers of paper and paperboard
2109	Manufacture of other articles of paper and paperboard
22	Publishing, printing and reproduction of recorded media
221	Publishing
2211	Publishing of books, brochures, musical books and other publications
2212	Publishing of newspapers, journals and periodicals
2213	Publishing of recorded media
2219	Other publishing
222	Printing and service activities related to printing
2221	Printing
2222	Service activities related to printing
223	Reproduction of recorded media
23	Manufacture of coke, refined petroleum products and nuclear fuel
231	Manufacture of coke oven products
232	Manufacture of refined petroleum products
233	Processing of nuclear fuel
24	Manufacture of chemicals and chemical products
241	Manufacture of basic chemicals
2411	Manufacture of basic chemicals, except fertilizers and nitrogen compounds
2412	Manufacture of fertilizers and nitrogen compounds
2413	Manufacture of plastics in primary forms and of synthetic rubber
242	Manufacture of other chemical products
2421	Manufacture of pesticides and other agro-chemical products
2422	Manufacture of paints, varnishes and similar coatings, printing ink and mastics
2423	Manufacture of pharmaceuticals, medicinal chemicals and botanical products
2424	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations
2429	Manufacture of other chemical products not elsewhere specified
243	Manufacture of man-made fibers
25	Manufacture of rubber and plastic products
251	Manufacture of rubber products
2511	Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres
2519	Manufacture of other rubber products
252	Manufacture of plastic products
26	Manufacture of other non-metallic mineral products
261	Manufacture of glass and glass products
269	Manufacture of non-metallic mineral products not elsewhere specified
2691	Manufacture of non-structural non-refractory ceramic ware
2692	Manufacture of refractory ceramic products

<b>NACE Rev 1.1 Code</b>	<b>Definition</b>
2693	Manufacture of structural non-refractory clay products
2694	Manufacture of cement, lime and plaster
2695	Manufacture of articles of concrete, cement and plaster
2696	Cutting, shaping and finishing of stone
2699	Manufacture of other non-metallic mineral products not elsewhere specified
27	Manufacture of basic metals
271	Manufacture of basic iron and steel
272	Manufacture of basic precious and non-ferrous metals
273	Casting of metals
2731	Casting of iron and steel
2732	Casting of non-ferrous metals
28	Manufacture of fabricated metal products except machinery and equipment
281	Manufacture of structural metal products, tanks reservoirs and steam generators
2811	Manufacture of structural metal products
2812	Manufacture of tanks, reservoirs and containers of metal
2813	Manufacture of steam generators, except central heating hot water boilers
289	Manufacture of other fabricated metal products; service activities to producers of fabricated metal products
2891	Forging, pressing, stamping and roll-forming of metal; powder metallurgy
2892	Treatment and coating of metals; general mechanical engineering on fee or contract basis
2893	Manufacture of cutlery, hand tools and general hardware
2899	Manufacture of other fabricated metal products not elsewhere specified
29	Manufacture of machinery and equipment not elsewhere specified
291	Manufacture of general purpose machinery
2911	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines
2912	Manufacture of pumps, compressors, taps and valves
2913	Manufacture of bearings, gears, gearing and driving elements
2914	Manufacture of ovens, furnaces and furnace burners
2915	Manufacture of lifting and handling equipment
2919	Manufacture of other general purpose machinery
292	Manufacture of special purpose machinery
2921	Manufacture of agricultural and forestry machinery
2922	Manufacture of machine-tools
2923	Manufacture of machinery for metallurgy
2924	Manufacture of machinery for mining, quarrying and construction
2925	Manufacture of machinery for food, beverage and tobacco processing
2926	Manufacture of machinery for textile, apparel and leather production
2927	Manufacture of weapons and ammunition
2929	Manufacture of other special purpose machinery
293	Manufacture of domestic appliances not elsewhere specified
30	Manufacture of office, accounting and computing machinery
31	Manufacture of electrical machinery and apparatus not elsewhere specified
311	Manufacture of electric motors, generators and transformers
312	Manufacture of electricity distribution and control apparatus
313	Manufacture of insulated wire and cable
314	Manufacture of accumulators, primary cells and primary batteries

<b>NACE Rev 1.1 Code</b>	<b>Definition</b>
315	Manufacture of electric lamps
319	Manufacture of other electrical equipment not elsewhere specified
32	Manufacture of radio, television and communication equipment and apparatus
321	Manufacture of electronic valves and tubes and other electronic components
322	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy
323	Manufacture of television and radio receivers and associated consumer goods
33	Manufacture of medical, precision and optical instruments, watches and clocks
331	Manufacture of medical appliances and instruments and appliances for measuring, checking, testing, navigation and other purposes, except optical instruments
3311	Manufacture of medical and surgical equipment and othopaedic appliances
3312	Manufacture of instruments and appliances for measuring, checking, testing, navigation and other purposes, except industrial process control equipment
3313	Manufacture of industrial process control equipment
332	Manufacture of optical instruments and photographic equipment
333	Manufacture of watches and clocks
34	Manufacture of motor vehicles, trailers and semi-trailers
341	Manufacture of motor vehicles
342	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers
343	Manufacture of parts and accessories for motor vehicles and their engines
35	Manufacture of other transport equipment
351	Building and repairing of ships and boats
3511	Building and repairing of ships
3512	building and repairing of pleasure and sporting boats
352	Manufacture of railways and tramway locomotives and rolling stock
353	Manufacture of aircraft and spacecraft
359	Manufacture of transport equipment not elsewhere specified
3591	Manufacture of motorcycles
3592	Manufacture of bicycles and invalid carriages
3599	Manufacture of other transport equipment not elsewhere specified
36	Manufacture of furniture; manufacturing not elsewhere specified
361	Manufacturing of furniture
369	Manufacturing not elsewhere specified
3691	Manufacture of jewellery and related articles
3692	Manufacture of musical instruments
3693	Manufacture of sport goods
3694	Manufacture of games and toys
3699	Other manufacturing not elsewhere specified
37	Recycling
371	Recycling of metal waste and scrap
372	Recycling of non-metal waste and scrap
40	Electricity, gas, steam and hot water supply
401	Production, collection and distribution of electricity
402	Manufacture of gas; distribution of gaseous fuels through mains
403	Steam and hot water supply

<b>NACE Rev 1.1 Code</b>	<b>Definition</b>
41	Collection, purification and distribution of water
45	Construction
451	Site preparation
452	Building of complete constructions or parts thereof; civil engineering
453	Building installation
454	Building completion
455	Renting of construction or demolition equipment with operator
50	Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel
501	Sale of motor vehicles
502	Maintenance and repair of motor vehicles
503	Sale of motor vehicle parts and accessories
504	Sale, maintenance and repair of motorcycles and related parts and accessories
505	Retail sale of automotive fuel
51	Wholesale trade and commission trade, except of motor vehicles and motorcycles
511	Wholesale on a fee or contract basis
512	Wholesale of agricultural raw materials, live animals, food, beverages and tobacco
5121	Wholesale of agricultural raw materials and live animals
5122	Wholesale of food, beverages and tobacco
513	Wholesale of household goods
5131	Wholesale of textiles, clothing and footwear
5139	Wholesale of other household goods
514	Wholesale of non-agricultural intermediate products, waste and scrap
5141	Wholesale of solid, liquid and gaseous fuels and related products
5142	Wholesale of metals and metal ores
5143	Wholesales of construction materials, hardware, plumbing and heating equipment and supplies
5149	Wholesale of other intermediate products, waste and scrap
515	Wholesale of machinery, equipment and supplies
519	Other wholesale
52	Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods
521	Non-specialized retail trade
5211	Retail sale in non-specialized stores with food beverages or tobacco predominating
5219	Other retail sale in non-specialized stores
522	Retail sale of food, beverages and tobacco in specialized stores
523	Other retail trade of new goods in specialized stores
5231	Retail sale of pharmaceutical and medical goods cosmetic and toilet articles
5232	Retail sale of textiles, clothing, footwear and leather goods
5233	Retail sale of household appliances, articles and equipment
5234	Retail sale of hardware, paints and glass
5239	Other retail sale in specialized stores
524	Retail sale of second-hand goods in stores
525	Retail trade not in stores
5251	retail sale via mail order house
5252	Retail sale via stalls and markets

<b>NACE Rev 1.1 Code</b>	<b>Definition</b>
5259	Other non-store retail sales
526	Repair of personal and household goods
55	Hotels and restaurants
551	Hotels; camping sites and other provision of short-stay accommodation
552	Restaurants, bars and canteens
60	Land transport; transport via pipelines
601	Transport via railways
602	Other land transport
6021	Other scheduled passenger land transport
6022	Other non-scheduled passenger land transport
6023	Freight transport by road
603	Transport via pipelines
61	Water transport
611	Sea and coastal water transport
612	Inland water transport
62	Air transport
621	Scheduled air transport
622	Non-scheduled air transport
63	Supporting and auxiliary transport activities; activities of travel agencies
6301	Cargo handling
6302	Storage and warehousing
6303	Other supporting transport activities
6304	Activities of travel agencies, tour operators and tourist guides
6309	Activities of other transport agencies
64	Post and telecommunication
641	Post and courier activities
6411	National post activities
6412	Courier activities other than national post activities
642	Telecommunication
65	Financial intermediation, except insurance and pension funding
651	Monetary intermediation
6511	Central banking
6519	Other monetary intermediation
659	Other financial intermediation
6591	Financial leasing
6592	Other credit granting
6599	Other financial intermediation not elsewhere specified
66	Insurance and pension funding, except compulsory social security
6601	Life insurance
6602	Pension
6603	Non-life insurance
67	Activities auxiliary to financial intermediation
671	Activities auxiliary to financial intermediation except insurance and pension funding
6711	Administration of financial markets
6712	Security dealing activities
6719	Activities auxiliary to financial intermediation not elsewhere specified

<b>NACE Rev 1.1 Code</b>	<b>Definition</b>
672	Activities auxiliary to insurance and pension funding
70	Real estate activities
701	Real estate activities with own or leased property
702	Real estate activities on a fee or contract basis
71	Renting of machinery and equipment without operator and of personal and household goods
711	Renting of transport equipment
7111	Renting of land transport equipment
7112	Renting of water transport equipment
7113	Renting of air transport equipment
712	Renting of other machinery and equipment
7121	Renting of agricultural machinery and equipment
7122	Renting of construction and civil engineering machinery and equipment
7123	Renting of office machinery and equipment (including computer)
7129	Renting of other machinery and equipment not elsewhere specified
713	Renting of personal and household goods not elsewhere specified
72	Computer and related activities
721	Hardware consultancy
722	Software consultancy and supply
723	Data processing
724	Data base activities
725	Maintenance and repair of office, accounting and computing machinery
729	Other computer related activities
73	Research and development
731	Research and development on natural sciences
732	Research and development on social sciences and humanities
74	Other business activities
741	Legal, accounting, book-keeping and auditing activities; tax consultancy; market research and public opinion polling; business and management consultancy
7411	Legal activities
7412	Accounting, book-keeping and auditing activities; tax consultancy
7413	Market research and public opinion polling
7414	Business and management consultancy activities
742	Architectural, engineering and other technical activities
7421	Architectural and engineering activities and related technical consultancy
7422	Technical testing and analysis
743	Advertising
749	Business activities not elsewhere specified
7491	Labour recruitment and provision of personnel
7492	Investigation and security activities
7493	Building-cleaning activities
7494	Photographic activities
7495	Packaging activities
7499	Other business activities not elsewhere specified
75	Public administration and defense; compulsory social security
751	Administration of the state and the economic and social policy of the community

<b>NACE Rev 1.1 Code</b>	<b>Definition</b>
7511	General (Over-all) public service activities
7512	Regulation of the activities of agencies that provide health care, education, cultural services and other social services excluding social security
7513	Regulation of and contribution to more efficient operation of business
7514	Ancillary service activities for the government as a whole
752	Provision of services to the community as a whole
7521	Foreign affairs
7522	Defense activities
7523	Public order and safety activities
753	Compulsory social security activities
80	Education
801	Primary education
802	Secondary education
8021	General secondary education
8022	Technical and vocational secondary education
803	Higher education
809	Adult and other education
85	Health and social work
851	Human health activities
8511	Hospital activities
8512	Medical and dental practice activities
8519	Other human health activities
852	Veterinary activities
853	Social work activities
8531	Social work with accommodation
8532	Social work without accommodation
90	Sewage and refuse disposal, sanitation and similar activities
91	Activities of membership organizations not elsewhere specified
911	Activities of business, employers and professional organizations
9111	Activities of business and employers organizations
9112	Activities of professional organizations
912	Activities of trade unions
919	Activities of other membership organizations
9191	Activities of religious organizations
9192	Activities of political organizations
9199	Activities of other membership organizations not elsewhere specified
92	Recreational, cultural and sporting activities
921	Motion picture, radio and television and other entertainment activities
9211	Motion picture and video production and distribution
9212	Motion picture projection
9213	Radio and television activities
9214	Dramatic arts, music and other arts activities
9219	Other entertainment activities not elsewhere specified
922	News agency activities
923	Libraries, archives, museums and other cultural activities
9231	Libraries and archives activities

<b>NACE Rev 1.1 Code</b>	<b>Definition</b>
9232	Museums activities and preservation of historical sites and buildings
9233	Botanical and zoological gardens and nature reserves activities
924	Sporting and other recreational activities
9241	Sporting activities
9249	Other recreational activities
93	Other service activities
9301	Washing, cleaning and dyeing of textile and fur products
9302	Hairdressing and other beauty treatment
9303	Funeral and related activities
9309	Other service activities not elsewhere specified
95	Private households with employed persons
99	Extra-territorial organization and bodies

(Source: Bureau van Dijk, :2003 Amadeus Database No. 105)

## **Appendix 3. Comparability Adjustment Transfer Pricing Model**

### **Appendix 3.1. CATPM origin**

Any hypothesis based on experience in transfer pricing, expertise in management or knowledge of economics can be tested using data from financial statements for companies that are comparables to a given tested party. The CAPM as documented in Brigham *et al* (1999: 155 – 234), transfer pricing principles as documented in the OECD Guidelines (1995: I-1 – III-24) and PN 7 (South Africa 1999: 9 - 32) and the CATPM model's fundamentals are summarised in Table 54.

The CAPM distinguishes amongst market or idiosyncratic risk and systematic or diversifiable risk with beta coefficient being the systematic risk measurement (refer to section 4.3.5.2 where the beta coefficient concept has been discussed). Market risk is measured by variables such as bond yields and no consideration to what influences such market risk is provided (Brigham *et al* 1999: 185, 187). Measurement errors could influence the results, with the errors originating from errors in return measurement, beta coefficient calculations and market indices which can be used to determine the market risk and its commensurate return.

It could be argued that the CAPM's ability to predict the returns of a company by virtue of the diversifiable or systematic risk it is exposed to by the beta coefficient measure, is sufficient to identify and quantify risk for transfer pricing purposes. Transfer pricing, and the arm's length principle, which is founded on comparability requires that the conditions of the affected transaction and the conditions it is being compared to must be comparable, in essence the same. In order to achieve this objective, total risk must be measured rather than the sole reliance on systematic or diversifiable risk, as measured by beta coefficient. In undertaking a comparability analysis, data on which such an analysis is based can vary across geographical markets hence, market or idiosyncratic risk becomes material in the determination of the arm's length principle. This need of measuring total risk, decomposed in its identifiable, separate components is what the CATPM aims to achieve.

The fundamentals of the various approaches are summarised according to the basis of the methodology, data use, model equation in mathematic notation, model description and classification of risk. The portfolio concept of the CAPM (Brigham *et al* 1999: 183) is included

in the summary due to fact the CAPM is measuring profitability in terms of risk. Risk according to the CAPM consists of market and diversifiable risk with market risk being treated as a constant and diversifiable risk as a variable indicative of profitability (Brigham *et al* 1999: 186). In contrast to the CAPM, transfer pricing is concerned with risk based on functionality and the CATPM with total risk that influences profitability.

Table 54: Transfer pricing model comparison

	Capital Asset Pricing Model	Transfer Pricing International Standard	Comparability Adjustment Transfer Pricing Model
Basis of the methodology	Determine the expected return on assets. Not restricted to connected parties	Determine the arm's length consideration for transactions amongst connected parties, based on functions performed, assets used and risk assumed.	Determine the arm's length consideration for transactions amongst connected parties, incorporating functionality, asset use and risk assumed albeit that the premise is that price is the difference amongst cost and market prices.
Data	Quantitative	Quantitative and qualitative	Quantitative and qualitative
Model Equation	$k_e^a = k_{rf}^a + (k_m^a - k_{rf}^a)\beta_i + \varepsilon_i$	$ALC_i^a = pli_i^a$ which is a function of $((F_i \times \Delta_i^F)(A \times \Delta_i^A)(R \times \Delta_i^R))$	$\alpha_i^a = P_i q_i - C_i$
Model description	Determine the expected return $k_{ie}^a$ as the sum of the risk free return $k_{rf}^a$ in the $i$ industry and the market risk premium $(k_m^i - k_{rf}^i)\beta_i$ , where $k_m^a$ is the market return in industry $i$ and $\beta_i$ is the beta coefficient value of the industry in which the company $a$ operates (market volatility) with $\varepsilon_i$ being an adjustment factor.	The arm's length consideration $ALC_i^a$ is the profit level indicator $pli_i^a$ which can be based on an inter quartile range or an uncontrolled comparable price which is determined by the functions performed $F_i$ and comparability adjustment $\Delta_i^F$ , assets used $A_i$ and comparability adjustment $\Delta_i^A$ and risk assumed $R_i$ and comparability adjustment $\Delta_i^R$ .	The transfer pricing model determines the arm's length consideration $\alpha_i^a$ as the difference amongst the cost $C_i$ and the product amongst the price $P_i$ and quantity $q_i$ of products sold.
Classification of risk	Risk is measured by variance, which is in turn classified according to market or systematic risk and unsystematic risk. Systematic or market risk is associated with the variation in the market whilst on the other hand unsystematic risk is independent of the market, often referred to idiosyncratic risk	Risk could be measured in terms of variance. In general, adjustments are made only to affect comparability. No adjustment examples are made; reference is made that adjustments could be based on adjusting for characteristics in terms of the transactions, functions, contractual terms, economic conditions and business strategies.	Risk is measured in terms of its variance. Risk is generally referred to in terms of total transactional risk, the risk involved in engaging in a specific transaction. Variance in price and quantity and cost provides a measure of market and idiosyncratic risk, similar to the CAPM model. Market risk is associated with variations in prices whilst idiosyncratic risk is independent of the market as a whole.

	<b>Capital Asset Pricing Model</b>	<b>Transfer Pricing International Standard</b>	<b>Comparability Adjustment Transfer Pricing Model</b>
Impact on market risk	Diversification can lead to an averaging of systematic or market risk	Market risk is adjusted for insofar as it can be identified and accurate adjustment is made to comparables to reflect it.	Hence it could reduce it but not eliminate or be regarded as an average "risk". The efficient market hypothesis is not appropriate for all transactions.
Impact on idiosyncratic risk	Diversification can reduce unsystematic risk or idiosyncratic risk to near zero.	Can be adjusted insofar as being identified and accurate adjustments can be made to comparables to reflect it.	Diversification can reduce unsystematic risk or idiosyncratic risk to near zero
Value of application	Focus is on systematic risk rather than total risk.	Risk to be adjusted for is only appropriate insofar as to enhance comparability and accurate adjustments can be made	Concern to systematic (market) as well as unsystematic (idiosyncratic) risk

*Source: Brigham et al (1999:155 – 234), OECD (1995: I-1 – III-24), South Africa (1999: 9 – 32) and own compilation*

## Appendix 4. CATPM Results

### Appendix 4.1. CATPM comparable PLI data NACE 341 and 342

Year	Company Name	Net-cost-plus	EBIT Margin	Return on total assets
2002	ALSACE CONSTRUCTIONS CARROSSERIE	1.13%	-1.74%	-0.91%
2002	ANDREOLI RIMORCHI	18.81%	24.90%	18.74%
2002	ATRANS AB	3.47%	8.22%	3.00%
2002	BALEIKE S.L.	8.71%	17.26%	8.81%
2002	BASCULANTES PEPIN SA	0.97%	3.48%	1.51%
2002	BOBO CAB SWEDEN AB	1.33%	2.17%	0.61%
2002	CARROCERIAS DASAN SA	1.13%	1.19%	0.38%
2002	CARROCERIAS FRANCISCO CASTELLO BROSETA SA	2.58%	5.16%	2.63%
2002	CARROCERIAS SEIN HNOS. S.L.	6.17%	17.33%	6.70%
2002	CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	10.09%	29.42%	9.84%
2002	CARROZZERIA OFFICINE S.MARCO	2.05%	3.63%	2.05%
2002	CCC CONSTRUCTEUR	0.98%	3.01%	2.65%
2002	CORBIN	-14.23%	-19.84%	-15.98%
2002	DALA LAMINAT AB	6.97%	10.27%	5.27%
2002	ETABLISSEMENT KOLLE	1.42%	3.14%	1.58%
2002	ETS LEROUGE	-1.90%	-5.59%	-1.97%
2002	EUROLIFT SARL	2.32%	3.61%	2.39%
2002	GROTHKAROSS AB	-7.40%	-38.04%	-7.52%
2002	HARSH LIMITED	-1.30%	-2.41%	-1.93%
2002	HERMANN'S IBERICA SA	0.96%	2.57%	0.94%
2002	M.D.M. INDUSTRIE	4.99%	8.84%	4.11%
2002	MEKAUTO AB	-0.27%	-2.42%	-0.56%
2002	MOBIL BAGES SAL	9.65%	20.36%	9.17%
2002	NOGE BUS FRANCE	4.26%	3.66%	3.32%
2002	NORRLANDSVAGNAR AB	7.21%	18.32%	6.94%
2002	OY INNSOL AB	10.19%	29.72%	9.60%
2002	PETIT LOCATION	27.40%	30.83%	28.49%
2002	REKO TRAILER AB	9.78%	18.52%	8.53%
2002	REMOLQUES HERMANOS GARCIA S.L.	4.38%	3.90%	3.74%
2002	ROUERGUE CARROSSERIE INDUSTRIELLE	2.80%	3.18%	1.32%
2002	SARL D'EXPLOITATION DU GARAGE BERTA	3.36%	5.55%	3.36%
2002	SARL HUWER HYDROVIDE	11.09%	14.85%	10.82%
2002	SARL IFOR WILLIAMS FRANCE	0.16%	0.22%	0.10%
2002	SOC COMMERCIALE PROMOTION DISTRIBUTION	9.04%	16.16%	6.80%
2002	STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	-2.76%	-5.89%	-3.67%

Year	Company Name	Net-cost-plus	EBIT Margin	Return on total assets
2002	STE ORNAISE DE CHAUDRONNERIE CARROSSERIE	4.78%	6.56%	4.46%
2002	STE TECHNIQUE INDUSTRIELLE MERIDIONALE	4.63%	10.64%	4.92%
2002	THERMOCON OY ELEMENT	20.32%	17.90%	19.41%
2002	THIERRY	-3.11%	-10.07%	-3.61%
2002	UNICAR FURGONATURE S.P.A.	2.13%	2.41%	1.79%
2002	UTILITAIRES PRO SERVICES UPS	5.07%	13.11%	4.98%
2002	VEHICULES INDUSTRIELS TRACTES	4.63%	1.02%	1.36%
2001	ALSACE CONSTRUCTIONS CARROSSERIE	6.87%	9.04%	4.85%
2001	AMENAGEMENT CARROSSERIE EQUIPEMENT DE VEHICULES	-2.37%	-8.22%	-5.05%
2001	ANDREOLI RIMORCHI	14.40%	22.07%	14.44%
2001	ATRANS AB	4.40%	7.88%	3.64%
2001	BALEIKE S.L.	9.10%	20.23%	9.15%
2001	BASCULANTES PEPIN SA	0.33%	3.24%	1.28%
2001	BOBO CAB SWEDEN AB	1.39%	2.66%	0.65%
2001	CARROCERIAS DASAN SA	0.94%	1.11%	0.39%
2001	CARROCERIAS FRANCISCO CASTELLO BROSETA SA	2.37%	3.26%	2.64%
2001	CARROCERIAS LA JUNQUERA S.L.	3.54%	7.68%	2.39%
2001	CARROCERIAS SEIN HNOS. S.L.	9.62%	32.21%	9.79%
2001	CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	10.95%	28.66%	10.57%
2001	CARROZZERIA OFFICINE S.MARCO	2.81%	6.79%	2.32%
2001	CCC CONSTRUCTEUR	2.08%	4.30%	3.02%
2001	CONSTRUCTIE VERGAUWE	12.23%	15.50%	12.23%
2001	CORBIN	8.96%	5.50%	6.51%
2001	DALA LAMINAT AB	4.82%	9.37%	3.46%
2001	ETABLISSEMENT KOLLE	7.09%	17.31%	7.25%
2001	ETS LEROUGE	2.92%	6.71%	3.06%
2001	EUROLIFT SARL	1.52%	3.52%	1.52%
2001	FOKOR OY	1.08%	0.32%	0.18%
2001	HARSH LIMITED	8.67%	12.56%	8.29%
2001	M.D.M. INDUSTRIE	-1.24%	-4.35%	-2.55%
2001	MOBIL BAGES SAL	9.36%	38.38%	9.16%
2001	NOGE BUS FRANCE	3.10%	0.53%	3.10%
2001	NORRLANDSVAGNAR AB	6.46%	19.72%	6.12%
2001	OY INNSOL AB	6.47%	17.37%	5.77%
2001	PETIT LOCATION	26.65%	34.46%	27.00%
2001	RAPID CONTAINER SERVICES	0.16%	1.20%	0.49%
2001	REKO TRAILER AB	10.39%	19.72%	9.42%
2001	REMOLQUES HERMANOS GARCIA S.L.	4.50%	4.83%	4.37%
2001	ROUERGUE CARROSSERIE INDUSTRIELLE	4.87%	8.15%	3.13%

Year	Company Name	Net-cost-plus	EBIT Margin	Return on total assets
2001	SARL D'EXPLOITATION DU GARAGE BERTA	2.54%	10.22%	2.54%
2001	SARL HUWER HYDROVIDE	7.93%	9.32%	7.89%
2001	SARL IFOR WILLIAMS FRANCE	-4.14%	-9.17%	-4.34%
2001	SOC COMMERCIALE PROMOTION DISTRIBUTION	5.60%	9.30%	3.30%
2001	STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	4.39%	5.23%	3.31%
2001	STE ORNAISE DE CHAUDRONNERIE CARROSSERIE	14.44%	36.80%	13.52%
2001	STE TECHNIQUE INDUSTRIELLE MERIDIONALE	3.02%	8.35%	3.06%
2001	THERMOCON OY ELEMENT	18.59%	15.45%	18.01%
2001	UNICAR FURGONATURE S.P.A.	-4.61%	-6.97%	-7.05%
2001	UTILITAIRES PRO SERVICES UPS	5.07%	11.48%	4.96%
2001	VEHICULES INDUSTRIELS TRACTES	2.99%	0.86%	1.05%
2001	VOLQUETES FELICES SL	11.35%	21.79%	10.85%
2000	ALSACE CONSTRUCTIONS CARROSSERIE	5.73%	6.69%	4.43%
2000	AMENAGEMENT CARROSSERIE EQUIPEMENT DE VEHICULES	3.95%	3.19%	1.56%
2000	ANDREOLI RIMORCHI	7.17%	12.74%	7.03%
2000	ATRANS AB	1.55%	1.36%	0.65%
2000	AUSSA CONTAINERS - SOCIETA' A RESP	35.10%	3.84%	34.84%
2000	BALEIKE S.L.	8.40%	16.68%	8.43%
2000	BASCULANTES PEPIN SA	3.56%	10.94%	4.64%
2000	BOBO CAB SWEDEN AB	0.73%	1.05%	0.27%
2000	CARROCERIAS DASAN SA	2.69%	5.54%	2.09%
2000	CARROCERIAS FRANCISCO CASTELLO BROSETA SA	2.75%	5.72%	2.89%
2000	CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	7.09%	19.31%	6.60%
2000	CARROZZERIA OFFICINE S.MARCO	2.00%	5.50%	1.79%
2000	CCC CONSTRUCTEUR	2.52%	4.60%	3.21%
2000	CONSTRUCTIE VERGAUWE	3.17%	3.57%	3.17%
2000	DALA LAMINAT AB	4.47%	7.37%	2.81%
2000	ETABLISSEMENT KOLLE	4.76%	11.90%	4.86%
2000	ETS LEROUGE	5.69%	12.38%	5.44%
2000	EUROLIFT SARL	1.84%	2.75%	1.69%
2000	FOKOR OY	-0.94%	-4.19%	-1.98%
2000	GROTHKAROSS AB	4.15%	17.12%	3.90%
2000	HERMANN'S IBERICA SA	2.98%	10.30%	3.14%
2000	M.D.M. INDUSTRIE	2.66%	4.52%	1.96%
2000	MOBIL BAGES SAL	6.24%	29.40%	5.77%
2000	NORRLANDSVAGNAR AB	8.57%	24.36%	8.05%

Year	Company Name	Net-cost-plus	EBIT Margin	Return on total assets
2000	OY INNSOL AB	4.72%	7.82%	3.67%
2000	PETIT LOCATION	26.02%	35.78%	26.37%
2000	RAPID CONTAINER SERVICES	0.94%	2.50%	1.21%
2000	REKO TRAILER AB	9.00%	20.82%	7.96%
2000	ROURGUE CARROSSERIE INDUSTRIELLE	2.88%	3.18%	1.51%
2000	SARL D'EXPLOITATION DU GARAGE BERTA	0.62%	1.69%	0.62%
2000	SARL HUWER HYDROVIDE	9.71%	10.95%	10.12%
2000	SARL IFOR WILLIAMS FRANCE	-3.32%	-6.62%	-3.69%
2000	SOC COMMERCIALE PROMOTION DISTRIBUTION	4.65%	7.42%	2.62%
2000	STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	1.85%	1.32%	0.78%
2000	STE TECHNIQUE INDUSTRIELLE MERIDIONALE	3.49%	8.23%	3.59%
2000	UNICAR FURGONATURE S.P.A.	2.40%	-0.04%	-0.04%
2000	UTILITAIRES PRO SERVICES UPS	3.62%	9.13%	3.52%
2000	VEHICULES INDUSTRIELS TRACTES	4.85%	2.31%	2.68%
2000	VOLQUETES FELICES SL	6.06%	14.13%	5.52%
1999	ALSACE CONSTRUCTIONS CARROSSERIE	7.02%	7.16%	5.25%
1999	AMENAGEMENT CARROSSERIE EQUIPEMENT DE VEHICULES	3.53%	4.31%	1.56%
1999	ANDREOLI RIMORCHI	3.01%	5.11%	2.80%
1999	ATRANS AB	4.86%	8.19%	4.01%
1999	AUSSA CONTAINERS - SOCIETA' A RESP	68.38%	4.89%	69.92%
1999	BALEIKE S.L.	8.01%	21.02%	7.79%
1999	BOBO CAB SWEDEN AB	2.60%	9.90%	2.04%
1999	CARROCERIAS DASAN SA	2.82%	5.01%	1.88%
1999	CARROCERIAS FRANCISCO CASTELLO BROSETA SA	2.38%	4.38%	2.25%
1999	CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	4.59%	11.34%	3.84%
1999	CARROZZERIA OFFICINE S.MARCO	1.96%	6.10%	1.40%
1999	CCC CONSTRUCTEUR	4.62%	8.13%	5.18%
1999	CONSTRUCTIE VERGAUWE	5.42%	7.12%	5.42%
1999	CORBIN	7.93%	8.70%	6.96%
1999	DALA LAMINAT AB	4.45%	4.57%	2.23%
1999	ETABLISSEMENT KOLLE	2.09%	5.45%	2.40%
1999	ETS LEROUGE	7.06%	15.94%	6.80%
1999	EUROLIFT SARL	2.37%	4.05%	2.37%
1999	FOKOR OY	10.63%	22.30%	10.12%
1999	GROTHKAROSS AB	0.70%	1.79%	0.56%
1999	HERMANN'S IBERICA SA	4.11%	9.61%	4.09%

Year	Company Name	Net-cost-plus	EBIT Margin	Return on total assets
1999	M.D.M. INDUSTRIE	0.94%	-0.50%	-0.26%
1999	MOBIL BAGES SAL	6.04%	16.86%	5.23%
1999	PETIT LOCATION	22.19%	25.33%	22.43%
1999	RAPID CONTAINER SERVICES	0.55%	1.80%	0.69%
1999	REKO TRAILER AB	11.69%	24.10%	10.97%
1999	ROUERGUE CARROSSERIE INDUSTRIELLE	3.46%	4.27%	2.33%
1999	SARL D'EXPLOITATION DU GARAGE BERTA	3.50%	6.89%	3.79%
1999	SARL HUWER HYDROVIDE	11.71%	19.38%	11.90%
1999	SARL IFOR WILLIAMS FRANCE	0.43%	0.55%	0.29%
1999	SOC COMMERCIALE PROMOTION DISTRIBUTION	5.24%	7.32%	2.86%
1999	STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	3.71%	5.20%	2.94%
1999	STE TECHNIQUE INDUSTRIELLE MERIDIONALE	2.66%	6.19%	2.73%
1999	UNICAR FURGONATURE S.P.A.	2.32%	-0.75%	-0.68%
1999	UTILITAIRES PRO SERVICES UPS	4.58%	10.42%	4.47%
1999	VEHICULES INDUSTRIELS TRACTES	4.76%	0.73%	1.15%
1998	ALSACE CONSTRUCTIONS CARROSSERIE	5.34%	7.71%	3.93%
1998	AMENAGEMENT CARROSSERIE EQUIPEMENT DE VEHICULES	3.82%	2.53%	1.44%
1998	ANDREOLI RIMORCHI	1.90%	2.42%	1.20%
1998	ATRANS AB	1.79%	0.14%	0.06%
1998	AUSSA CONTAINERS - SOCIETA' A RESP	81.60%	8.44%	88.89%
1998	BASCULANTES PEPIN SA	1.99%	5.40%	2.29%
1998	CARROCERIAS DASAN SA	2.92%	5.87%	2.13%
1998	CARROCERIAS FRANCISCO CASTELLO BROSETA SA	1.54%	2.54%	1.33%
1998	CARROCERIES ES-MI S.L.	12.38%	18.72%	12.62%
1998	CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	2.26%	4.15%	1.33%
1998	CASADEI	2.27%	0.23%	0.17%
1998	CCC CONSTRUCTEUR	2.71%	5.02%	3.35%
1998	CONSTRUCTIE VERGAUWE	1.34%	1.59%	1.34%
1998	DALA LAMINAT AB	8.07%	16.09%	5.70%
1998	ETABLISSEMENT KOLLE	2.68%	7.43%	2.89%
1998	ETS LEROUGE	3.17%	7.01%	2.84%
1998	EUROLIFT SARL	-2.20%	-5.19%	-2.20%
1998	FOKOR OY	6.64%	13.96%	6.14%
1998	GROTHKAROSS AB	2.35%	10.09%	2.27%
1998	HERMANN'S IBERICA SA	2.96%	4.38%	1.99%
1998	M.D.M. INDUSTRIE	1.73%	0.59%	0.39%

Year	Company Name	Net-cost-plus	EBIT Margin	Return on total assets
1998	MOBIL BAGES SAL	2.91%	9.16%	2.43%
1998	PETIT LOCATION	25.03%	30.58%	25.03%
1998	RAPID CONTAINER SERVICES	-0.62%	-3.13%	-1.19%
1998	REKO TRAILER AB	8.54%	19.69%	7.38%
1998	ROUBERGUE CARROSSERIE INDUSTRIELLE	7.35%	11.90%	5.98%
1998	SARL D'EXPLOITATION DU GARAGE BERTA	5.09%	9.75%	5.09%
1998	SARL HUWER HYDROVIDE	8.55%	13.31%	8.52%
1998	SARL IFOR WILLIAMS FRANCE	0.70%	1.06%	0.47%
1998	SOC COMMERCIALE PROMOTION DISTRIBUTION	5.53%	5.15%	2.47%
1998	STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	1.33%	1.32%	0.78%
1998	STE TECHNIQUE INDUSTRIELLE MERIDIONALE	2.96%	6.43%	2.88%
1998	SUPERCAR ALLESTIMENTI	2.81%	5.83%	2.81%
1998	UNICAR FURGONATURE S.P.A.	-3.70%	-9.00%	-8.73%
1998	UTILITAIRES PRO SERVICES UPS	4.19%	8.86%	4.25%
1998	VEHICULES INDUSTRIELS TRACTES	-34.32%	-27.97%	-48.59%

#### Appendix 4.2. CATPM comparable ratios data NACE 341 and 342

Year	Company Name	CATPM Inv Risk	CATPM Rec Risk	CATPM Liq Risk	CATPM Activity Risk	CATPM Sol Risk	CATPM Fin Lev	CATPM Tax Lev
2002	ALSACE CONSTRUCTIONS CARROSSERIE	14.93	110.07	95.81	190.78	854	-80.95	111.76
2002	ANDREOLI RIMORCHI	6.21	725.25	161.97	132.86	39470	99.63	82.48
2002	ATRANS AB	14.56	67.1	155.31	273.7	329.6	86.62	92.28
2002	BALEIKE S.L.	2.29	1286.96	173.08	195.99	73.83	101.13	71.68
2002	BASCULANTES PEPIN SA	12.41	69.27	224.31	230.24	5.9	155.87	68.96
2002	BOBO CAB SWEDEN AB	9.38	166.93	129.64	353.67	1065.25	46.03	78.16
2002	CARROCERIAS DASAN SA	14.14	61.91	127.37	313.34	51.6	33.65	36.69
2002	CARROCERIAS FRANCISCO CASTELLO BROSETA SA	10.62	259.99	169.33	196.34	7.38	102.05	69.5
2002	CARROCERIAS SEIN HNOS. S.L.	6.99	104.4	220.41	258.6	666.67	108.54	81
2002	CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	1.06	1418.42	136.51	299	370.18	97.51	67.42
2002	CARROZZERIA OFFICINE S.MARCO	10.04	145.5	374.24	177.68	2600	100	11.63

Year	Company Name	CATPM Inv Risk	CATPM Rec Risk	CATPM Liq Risk	CATPM Activity Risk	CATPM Sol Risk	CATPM Fin Lev	CATPM Tax Lev
2002	CCC CONSTRUCTEUR	10.51	352.52	172.67	113.87	108.64	269.23	85.71
2002	CORBIN	4.06	653.45	58.3	124.19	254.67	112.32	100
2002	DALA LAMINAT AB	16.13	89.38	165.5	194.87	3871	75.57	92.4
2002	ETABLISSEMENT KOLLE	7.31	278.95	277.48	199	227.36	110.81	48.78
2002	ETS LEROUGE	7.46	285.85	117.51	283.43	2887.5	103.7	100
2002	EUROLIFT SARL	9.29	382.64	111.12	151.22	595	102.78	83.78
2002	GROTHKAROSS AB	5.33	196.92	124.81	505.66	1102	101.6	100
2002	HARSH LIMITED	28.3	72.15	135.69	124.94	863482	148.38	93.17
2002	HERMANN'S IBERICA SA	12.07	125.98	115.73	272.51	269.45	98.43	65.27
2002	M.D.M. INDUSTRIE	20.96	93.07	135.86	214.76	414.29	82.52	85.88
2002	MEKAUTO AB	7.08	163.75	191.78	430.09	999	210.71	100
2002	MOBIL BAGES SAL	6.63	105.03	67.24	222.03	0.59	95.02	68.91
2002	NOGE BUS FRANCE	68.19	20.27	173.9	110.27	4928.33	77.91	100
2002	NORRLANDSVAGNAR AB	8.5	142.73	131.33	264.01	420	96.23	80.31
2002	OY INNSOL AB	2.94	300.78	161.37	309.73	1948.36	94.13	70.55
2002	PETIT LOCATION	0.06	33100	281.21	108.2	105.65	103.98	59.68
2002	REKO TRAILER AB	16.41	108.56	241.41	217.19	1943.6	87.19	73.96
2002	REMOLQUES HERMANOS GARCIA S.L.	22.47	63.96	107.74	104.31	1758.57	85.43	69.76
2002	ROUERGUE CARROSSERIE INDUSTRIELLE	14.79	27.35	108.67	241.61	900	47.02	67.61
2002	SARL D'EXPLOITATION DU GARAGE BERTA	5.09	656.06	118.68	165.41	2468.09	100	68.97
2002	SARL HUWER HYDROVIDE	9.57	293.2	202.53	137.22	299.11	97.56	66.17
2002	SARL IFOR WILLIAMS FRANCE	7.63	404.55	102.45	209.56	1842.5	66.67	100
2002	SOC COMMERCIALE PROMOTION DISTRIBUTION	22.33	73.1	181.39	237.81	113	75.17	71.43
2002	STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	17.58	146.73	100.21	160.29	469.03	133.33	104.17
2002	STE ORNAISE DE CHAUDRONNERIE CAROSSERIE	5.04	626.58	109.67	146.95	1408.7	93.33	98.57
2002	STE TECHNIQUE INDUSTRIELLE MERIDIONALE	2.73	661.54	143.22	216.18	1022.95	106.36	71.79
2002	THERMOCON OY ELEMENT	10.35	216.13	277.92	92.2	3000.01	95.51	71

Year	Company Name	CATPM Inv Risk	CATPM Rec Risk	CATPM Liq Risk	CATPM Activity Risk	CATPM Sol Risk	CATPM Fin Lev	CATPM Tax Lev
2002	THIERRY	6.47	298.08	87	279.17	596.67	116	100
2002	UNICAR FURGONATURE S.P.A.	16.63	99.4	102.46	134.8	803.96	83.83	40.35
2002	UTILITAIRES PRO SERVICES UPS	26.27	15.52	345.41	263.17	280.39	98.21	70.91
2002	VEHICULES INDUSTRIELS TRACTES	61.34	35.5	88.01	75.07	212.36	29.41	20
2001	ALSACE CONSTRUCTIONS CARROSSERIE	19.06	72.91	111.28	186.49	878	70.54	61.54
2001	AMENAGEMENT CARROSSERIE EQUIPEMENT DE VEHICULES	32.58	19.2	100.88	162.75	549.67	213.04	100
2001	ANDREOLI RIMORCHI	5.09	742.74	149.25	152.85	39680	100.29	54.58
2001	ATRANS AB	16.03	114.89	133.27	216.3	321.82	82.7	100
2001	BALEIKE S.L.	1.37	1614.57	174.44	221.13	126.99	100.52	69.18
2001	BASCULANTES PEPIN SA	12.66	54.09	232.27	252.6	10.62	385.34	50.96
2001	BOBO CAB SWEDEN AB	12.37	73.61	138.31	407.89	603.75	47.08	77.37
2001	CARROCERIAS DASAN SA	13.43	87	123.24	284.48	63.08	41.6	35.02
2001	CARROCERIAS FRANCISCO CASTELLO BROSETA SA	3.35	243.83	134.63	123.47	96.2	111.34	62.95
2001	CARROCERIAS LA JUNQUERA S.L.	7.41	127.2	66.59	320.98	48.94	67.56	68.81
2001	CARROCERIAS SEIN HNOS. S.L.	5.39	158.55	221.62	328.88	666.67	101.76	77.69
2001	CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	1.68	947.54	103.94	271.19	622.81	96.48	64.58
2001	CARROZZERIA OFFICINE S.MARCO	7.73	137.86	104.53	292.73	4830	82.35	19.05
2001	CCC CONSTRUCTEUR	2.27	1319.44	174.44	142.08	161	145.45	70.83
2001	CONSTRUCTIE VERGAUWE	24	120.62	242.21	126.75	577.42	100	100
2001	CORBIN	29.34	122.83	87.97	84.53	417.33	72.63	91.3
2001	DALA LAMINAT AB	15.94	57.12	148.57	270.93	2358	71.78	76.88
2001	ETABLISSEMENT KOLLE	5.41	246.47	275.5	238.72	221.7	102.24	60.96
2001	ETS LEROUGE	7.92	365.79	141.07	219.36	2212.5	104.76	100
2001	EUROLIFT SARL	5.75	198.04	105.92	230.86	2433.33	100	70.37
2001	FOKOR OY	21.56	71.57	134.55	181.95	2577.69	16.35	79.07
2001	HARSH LIMITED	24.05	79.71	186.63	151.57	631516	95.57	75.13
2001	M.D.M. INDUSTRIE	26.18	91.11	132.27	170.81	365.55	205.88	142.86

Year	Company Name	CATPM Inv Risk	CATPM Rec Risk	CATPM Liq Risk	CATPM Activity Risk	CATPM Sol Risk	CATPM Fin Lev	CATPM Tax Lev
2001	MOBIL BAGES SAL	12.33	54.49	154.01	418.78	7.44	97.93	70.63
2001	NOGE BUS FRANCE	491.8	16.3	102.02	17.18	5151.67	100	100
2001	NORRLANDSVAGNAR AB	8.22	137.12	179.63	322.3	751.79	94.65	78.88
2001	OY INNSOL AB	0.09	10811.9	141.11	301.05	1086.56	89.19	71.21
2001	PETIT LOCATION	0.07	22400	309.86	127.62	38.26	101.31	66.24
2001	RAPID CONTAINER SERVICES	3.94	573.1	216.1	244.41	46.67	300	100
2001	REKO TRAILER AB	17.32	97.53	250.31	209.44	1662.4	90.66	74.92
2001	REMOLQUES HERMANOS GARCIA S.L.	17.96	111.06	173.1	110.57	1758.57	97.08	69.77
2001	ROUERGUE CARROSSERIE INDUSTRIELLE	14.33	37.72	106.01	260.8	1344.44	64.26	66.23
2001	SARL D'EXPLOITATION DU GARAGE BERTA	6.42	105.19	145.13	401.51	772.34	100	63.93
2001	SARL HUWER HYDROVIDE	13.52	224.88	184.76	118.07	613.74	99.59	65.57
2001	SARL IFOR WILLIAMS FRANCE	7.88	357.14	101.03	211.44	1705	104.82	101.67
2001	SOC COMMERCIALE PROMOTION DISTRIBUTION	19.68	72.78	199.64	281.75	86	58.89	60.38
2001	STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	14.51	142.81	95.82	158.04	569.03	75.41	100
2001	STE ORNAISE DE CHAUDRONNERIE CAROSSERIE	2.29	766.67	177.53	272.14	1000	93.65	100
2001	STE TECHNIQUE INDUSTRIELLE MERICIONALE	2.1	1064	143.37	272.54	780.33	101.39	71.23
2001	THERMOCON OY ELEMENT	8.72	229.91	303.54	85.76	2788.02	96.89	71.03
2001	UNICAR FURGONATURE S.P.A.	17.81	63.6	106.39	98.84	454.33	153.07	126.45
2001	UTILITAIRES PRO SERVICES UPS	29.1	11.69	349.75	231.48	266.67	97.8	67.42
2001	VEHICULES INDUSTRIELS TRACTES	51.58	45.83	82.91	81.69	185.92	35.29	25
2001	VOLQUETES FELICES SL	5.95	348.17	276.02	200.83	1.45	95.66	68.09
2000	ALSACE CONSTRUCTIONS CARROSSERIE	18.1	159.31	105.51	151.05	1780	77.31	60.87

Year	Company Name	CATPM Inv Risk	CATPM Rec Risk	CATPM Liq Risk	CATPM Activity Risk	CATPM Sol Risk	CATPM Fin Lev	CATPM Tax Lev
2000	AMENAGEMENT CARROSSERIE EQUIPEMENT DE VEHICULES	18.13	89.61	99.3	203.99	848.51	39.64	77.27
2000	ANDREOLI RIMORCHI	2.87	1098.31	107.58	181.22	31150	98.13	49.48
2000	ATRANS AB	15.13	141.17	130.11	209.25	468.38	42.14	100
2000	AUSSA CONTAINERS - SOCIETA' A RESP	689.91	0.12	161.47	11.03	297.87	99.26	95.17
2000	BALEIKE S.L.	1	3586.2	122.7	197.96	178.33	100.36	76.82
2000	BASCULANTES PEPIN SA	12.5	74.97	204.79	235.63	15.35	130.47	65
2000	BOBO CAB SWEDEN AB	9.24	126.91	117.42	388.1	700.5	37.08	68.18
2000	CARROCERIAS DASAN SA	14.72	73.73	133.06	264.67	73.71	77.84	59.23
2000	CARROCERIAS FRANCISCO CASTELLO BROSETA SA	0.74	2862.07	166.48	197.95	231.62	104.99	65
2000	CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	1.43	1250	96.11	292.67	673.74	93.12	62.07
2000	CARROZZERIA OFFICINE S.MARCO	2.58	665.31	115.23	307.61	4580	89.47	8.82
2000	CCC CONSTRUCTEUR	5.24	568	180.41	143.1	116	127.78	63.04
2000	CONSTRUCTIE VERGAUWE	21.16	110.63	236.84	112.5	1006.25	100	100
2000	DALA LAMINAT AB	17.69	38.78	135.07	262.07	2456	62.95	75.31
2000	ETABLISSEMENT KOLLE	6.72	269.86	224.58	245.07	272.12	102.03	45.03
2000	ETS LEROUGE	11.19	235.75	148.39	227.6	3037.5	95.6	100
2000	EUROLIFT SARL	12.27	135.63	102.28	162.8	2786.67	91.67	63.64
2000	FOKOR OY	15.49	79.35	145.35	211.89	2179.98	210.98	100.56
2000	GROTHKAROSS AB	8.97	129.48	162.96	438.74	1158	94.05	73.21
2000	HERMANN'S IBERICA SA	7.73	221.53	127.09	327.76	15.81	105.31	63.95
2000	M.D.M. INDUSTRIE	18.17	87.29	114.29	230.82	426.89	73.58	64.1
2000	MOBIL BAGES SAL	12.07	20.02	123.88	509.54	19.4	92.54	70.51
2000	NORRLANDSVAGNAR AB	6.51	184.96	155.84	302.42	862.56	94.02	78.56
2000	OY INNSOL AB	0.79	932.48	147.46	212.86	293.3	77.77	71.41
2000	PETIT LOCATION	0.07	23900	161.82	135.68	456.67	101.35	65.69
2000	RAPID CONTAINER SERVICES	4.29	486.79	178.81	206.06	80.69	128.57	100
2000	REKO TRAILER AB	15.2	108.57	204.75	261.42	1881.2	88.48	71.52
2000	ROUEGUE CARROSSERIE INDUSTRIELLE	17.31	95.72	108.42	210.57	1282.72	52.48	64.15

Year	Company Name	CATPM Inv Risk	CATPM Rec Risk	CATPM Liq Risk	CATPM Activity Risk	CATPM Sol Risk	CATPM Fin Lev	CATPM Tax Lev
2000	SARL D'EXPLOITATION DU GARAGE BERTA	16.55	24.69	139.89	271.94	1608.7	100	22.22
2000	SARL HUWER HYDROVIDE	12.77	271.88	246.18	108.21	430.53	104.2	64.52
2000	SARL IFOR WILLIAMS FRANCE	9.2	383.21	109.15	179.6	2112.28	111.11	100
2000	SOC COMMERCIALE PROMOTION DISTRIBUTION	22.29	49.2	184.39	282.97	141.45	56.41	54.55
2000	STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	7.43	246.8	68.68	170.21	485.81	41.89	-116.13
2000	STE TECHNIQUE INDUSTRIELLE MERICIONALE	3.7	647.95	131.83	228.85	878.69	102.9	69.01
2000	UNICAR FURGONATURE S.P.A.	18.22	141.79	109.48	103.71	583.17	-1.53	3433.33
2000	UTILITAIRES PRO SERVICES UPS	24.01	13.63	345.77	259.06	282.61	97.22	55.71
2000	VEHICULES INDUSTRIELS TRACTES	43.65	55.56	84.92	86.17	197.13	55.17	100
2000	VOLQUETES FELICES SL	4.99	288.02	235.79	255.97	0.64	91.1	67.28
1999	ALSACE CONSTRUCTIONS CARROSSERIE	30.96	67.49	105.9	136.49	1108	74.7	62.9
1999	AMENAGEMENT CARROSSERIE EQUIPEMENT DE VEHICULES	18.18	48.57	114.29	276.41	785.45	44.21	66.67
1999	ANDREOLI RIMORCHI	1.74	2261.11	105.48	182.16	30380	93.12	33.5
1999	ATRANS AB	13.83	164.11	145.91	203.97	538.28	82.6	100
1999	AUSSA CONTAINERS - SOCIETA' A RESP	1049.72	21.69	451.64	7	1206.4	102.25	95.26
1999	BALEIKE S.L.	1.11	1588.35	106.8	269.8	227.9	97.23	70.25
1999	BOBO CAB SWEDEN AB	7.12	146.96	120.51	486.02	508.25	78.46	70.91
1999	CARROCERIAS DASAN SA	13.99	72.92	132.97	266.29	92.38	66.63	52.24
1999	CARROCERIAS FRANCISCO CASTELLO BROSETA SA	1.28	1368.96	132.32	194.63	401.9	94.65	67.59
1999	CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	1.53	1120.51	93.07	295.02	660.71	83.76	58.16
1999	CARROZZERIA OFFICINE S.MARCO	3.92	200	127.68	435.67	1680	71.43	-65
1999	CCC CONSTRUCTEUR	4.69	541.18	182.72	156.99	133.55	111.94	66.67

Year	Company Name	CATPM Inv Risk	CATPM Rec Risk	CATPM Liq Risk	CATPM Activity Risk	CATPM Sol Risk	CATPM Fin Lev	CATPM Tax Lev
1999	CONSTRUCTIE VERGAUWE	17.61	127.97	190.66	131.39	875	100	100
1999	CORBIN	23.79	23.58	94.64	124.88	633.33	87.8	100
1999	DALA LAMINAT AB	15.94	104.18	126.27	204.69	2458	50.17	86.81
1999	ETABLISSEMENT KOLLE	6.48	356.08	168.8	227.08	330.77	114.75	45.71
1999	ETS LEROUGE	9.89	235.71	143.49	234.58	1687.5	96.25	100
1999	EUROLIFT SARL	4.84	342.55	102.04	171.13	2420	100	86.96
1999	FOKOR OY	11.74	126.24	139.98	220.34	2614.47	95.22	84.88
1999	GROTHKAROSS AB	7.02	305.2	138.47	316.64	2237	80.65	61.33
1999	HERMANN'S IBERICA SA	13.69	176.19	115.87	234.63	38.19	99.7	64.88
1999	M.D.M. INDUSTRIE	16	138.76	106.54	190.57	513.45	-27.78	100
1999	MOBIL BAGES SAL	8.94	203.17	166.38	322.67	28.13	86.49	73.25
1999	PETIT LOCATION	0.17	15200	140.62	112.9	1153.33	101.12	63.84
1999	RAPID CONTAINER SERVICES	4.07	578.95	185.79	260.59	77.5	126.09	100
1999	REKO TRAILER AB	19.15	97.31	165.59	219.65	2399.6	93.84	77.99
1999	ROUERGUE CARROSSERIE INDUSTRIELLE	11.5	236.33	120.12	182.99	888.89	67.53	65.38
1999	SARL D'EXPLOITATION DU GARAGE BERTA	27.77	24.13	130.6	181.98	1865.22	108.33	66.67
1999	SARL HUWER HYDROVIDE	8.48	353.49	250	162.79	339.69	101.69	63.54
1999	SARL IFOR WILLIAMS FRANCE	5.49	642.11	113.85	190.42	2428.07	67.74	61.9
1999	SOC COMMERCIALE PROMOTION DISTRIBUTION	23.81	48.85	162.73	255.76	195.39	54.65	61.7
1999	STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	5.71	221.5	52.82	177.06	7955.56	79.23	67.96
1999	STE TECHNIQUE INDUSTRIELLE MERIDIONALE	4.67	588.89	129.48	227.29	580.33	102.44	64.29
1999	UNICAR FURGONATURE S.P.A.	16.07	177.01	99.14	110.11	624.5	-29.25	338.71
1999	UTILITAIRES PRO SERVICES UPS	23.94	20.5	316.52	233.04	323.91	97.62	60.98
1999	VEHICULES INDUSTRIELS TRACTES	44.24	58.31	60.19	62.98	116.09	24.24	100
1998	ALSACE CONSTRUCTIONS CARROSSERIE	15.17	127.78	92.79	195.96	2360	73.68	42.86

Year	Company Name	CATPM Inv Risk	CATPM Rec Risk	CATPM Liq Risk	CATPM Activity Risk	CATPM Sol Risk	CATPM Fin Lev	CATPM Tax Lev
1998	AMENAGEMENT CARROSSERIE EQUIPEMENT DE VEHICULES	21.14	143.57	106.32	175.56	2665.63	37.78	76.47
1998	ANDREOLI RIMORCHI	3.77	355.72	102.43	202.65	27710	62.77	9.3
1998	ATRANS AB	17.87	65.08	137	221.8	518.38	3.56	100
1998	AUSSA CONTAINERS - SOCIETA' A RESP	766.81	21.86	1518.2	9.5	29.29	108.94	95.9
1998	BASCULANTES PEPIN SA	12.24	94.85	209.66	235.79	32.04	114.89	60.85
1998	CARROCERIAS DASAN SA	11.63	100.4	130.38	276.34	101.67	72.79	67.59
1998	CARROCERIAS FRANCISCO CASTELLO BROSETA SA	7.03	232.53	140.88	190.76	209.68	86.79	85.5
1998	CARROCERIES ES-MI S.L.	10.69	118.57	219.59	148.28	3.1	102	70
1998	CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	2.09	802.13	94.72	311.62	561.9	58.82	86.67
1998	CASADEI	12.38	322.56	91.24	134.44	21640	7.59	100
1998	CCC CONSTRUCTEUR	5.56	638.46	161.5	149.73	118.42	123.68	68.09
1998	CONSTRUCTIE VERGAUWE	19.92	120.81	153.39	119.3	1031.25	100	100
1998	DALA LAMINAT AB	17.33	60.08	152.95	282.1	1549	70.69	97.87
1998	ETABLISSEMENT KOLLE	8.82	174.09	201.31	256.97	239.42	108	67.9
1998	ETS LEROUGE	12.25	154.46	125.1	246.36	2200	89.66	100
1998	EUROLIFT SARL	2.2	1321.43	98.48	235.93	1113.33	100	100
1998	FOKOR OY	10.62	152.53	158.99	227.49	2702.47	92.44	71.37
1998	GROTHKAROSS AB	7.1	183.8	147.69	445.18	1318	96.32	83.33
1998	HERMANN'S IBERICA SA	4.9	722.76	114.05	220.05	96.54	67.32	72.61
1998	M.D.M. INDUSTRIE	22.43	148.51	112.29	150.71	656.3	22.58	57.14
1998	MOBIL BAGES SAL	9.3	137.49	192.84	376.67	8.79	83.47	76.36
1998	PETIT LOCATION	0.89	1900	209.23	122.19	633.33	100	64.16
1998	RAPID CONTAINER SERVICES	5.14	443.48	176.37	262.56	51.46	192	100
1998	REKO TRAILER AB	13.52	118.65	158.96	266.73	1913.6	86.4	79.97
1998	ROUERGUE CARROSSERIE INDUSTRIELLE	8.66	311.11	99.09	199.04	1943.48	81.31	67.82
1998	SARL D'EXPLOITATION DU GARAGE BERTA	14.56	72.73	114.86	191.42	1373.91	100	64
1998	SARL HUWER HYDROVIDE	11.9	208.44	222.8	156.25	1026.09	99.57	62.45

Year	Company Name	CATPM Inv Risk	CATPM Rec Risk	CATPM Liq Risk	CATPM Activity Risk	CATPM Sol Risk	CATPM Fin Lev	CATPM Tax Lev
1998	SARL IFOR WILLIAMS FRANCE	7.33	317.29	118.66	225.36	1447.37	67.44	62.07
1998	SOC COMMERCIALE PROMOTION DISTRIBUTION	31.8	30.61	143.33	208.91	276.97	44.58	62.16
1998	STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	7.02	187.12	57.45	168.91	8055.56	59.09	15.38
1998	STE TECHNIQUE INDUSTRIELLE MERIDIONALE	4.55	673.33	127.27	223.18	719.57	97.44	65.79
1998	SUPERCAR ALLESTIMENTI	5.61	221.3	119.05	207.78	1196.08	100	-9.26
1998	UNICAR FURGONATURE S.P.A.	17.54	156.09	85.51	103.15	734.51	235.59	112.23
1998	UTILITAIRES PRO SERVICES UPS	27.47	16.17	348.97	208.47	276.09	101.52	61.19
1998	VEHICULES INDUSTRIELS TRACTES	44.43	40.13	52.75	57.57	195.4	141.56	100

### Appendix 4.3. CATPM net-cost-plus stepwise regression

<i>Results of stepwise regression for Net-cost-plus</i>						
<i>Step 1 - Entering variable: CATPM Liq Risk</i>						
<i>Summary measures</i>						
Multiple R	0.8513					
R-Square	0.7247					
Adj R-Square	0.7233					
StErr of Est	0.1865					
<i>ANOVA Table</i>						
Source	df	SS	MS	F	p-value	
Explained	1	17.8460	17.8460	5.13E+02	1.63E-56	
Unexplained	195	6.7804	0.0348			
<i>Regression coefficients</i>						
	Coefficient	Std Err	t-value	p-value	Lower limit	Upper limit
Constant	-0.3267	0.0226	-14.4565	1.13E-32	-3.71E-01	-0.2821
CATPM Liq Risk	0.2587	0.0114	22.6548	0.00E+00	2.36E-01	0.2812
<i>Step 2 - Entering variable: CATPM Inv Risk</i>						
<i>Summary measures</i>						
		Change	Change	%		
Multiple R	0.9252	0.0740	8.7%			
R-Square	0.8560	0.1314	18.1%			
Adj R-Square	0.8546	0.1313	18.2%			
StErr of Est	0.1352	-0.0513	-27.5%			
<i>ANOVA Table</i>						
Source	df	SS	MS	F	p-value	
Explained	2	21.0813	10.5407	5.77E+02	2.23E-82	
Unexplained	194	3.5452	0.0183			
<i>Regression coefficients</i>						
	Coefficient	Std Err	t-value	p-value	Lower limit	Upper limit
Constant	-0.2570	0.0172	-14.9410	4.28E-34	-2.91E-01	-0.2230
CATPM Liq Risk	0.1913	0.0097	19.7134	0.00E+00	1.72E-01	0.2104
CATPM Inv Risk	0.1387	0.0104	13.3057	3.97E-29	1.18E-01	0.1593

**Step 3 - Entering variable: CATPM Fin Lev**

		Change	Change %
<b>Summary measures</b>			
Multiple R	0.9300	0.0048	0.5%
R-Square	0.8649	0.0089	1.0%
Adj R-Square	0.8628	0.0083	1.0%
StErr of Est	0.1313	-0.0039	-2.9%

**ANOVA Table**

Source	df	SS	MS	F	p-value
Explained	3	21.3005	7.1002	4.12E+02	1.29E-83
Unexplained	193	3.3260	0.0172		

**Regression coefficients**

	Coefficient	Std Err	t-value	p-value	Lower limit	Upper limit
Constant	-0.1994	0.0232	-8.5873	2.96E-15	-2.45E-01	-0.1536
CATPM Liq Risk	0.1973	0.0096	20.6110	0.00E+00	1.78E-01	0.2162
CATPM Inv Risk	0.1358	0.0102	13.3725	2.72E-29	1.16E-01	0.1559
CATPM Fin Lev	-0.0717	0.0201	-3.5665	4.56E-04	-1.11E-01	-0.0320

**Step 4 - Entering variable: CATPM Rec Risk**

		Change	Change %
<b>Summary measures</b>			
Multiple R	0.9331	0.0031	0.3%
R-Square	0.8707	0.0057	0.7%
Adj R-Square	0.8680	0.0051	0.6%
StErr of Est	0.1288	-0.0025	-1.9%

**ANOVA Table**

Source	df	SS	MS	F	p-value
Explained	4	21.4413	5.3603	3.23E+02	4.50E-84
Unexplained	192	3.1851	0.0166		

**Regression coefficients**

	Coefficient	Std Err	t-value	p-value	Lower limit	Upper limit
Constant	-0.2007	0.0228	-8.8086	7.48E-16	-2.46E-01	-0.1558
CATPM Liq Risk	0.1941	0.0095	20.5334	0.00E+00	1.75E-01	0.2128
CATPM Inv Risk	0.1390	0.0100	13.8658	9.57E-31	1.19E-01	0.1588
CATPM Fin Lev	-0.0728	0.0197	-3.6907	2.91E-04	-1.12E-01	-0.0339
CATPM Rec Risk	0.0008	0.0003	2.9137	4.00E-03	2.48E-04	0.0013

#### Appendix 4.4. CATPM comparable ratios data with fitted and residual values

Company Name	CATP M Inv Risk	CATP M Rec Risk	CATPM Liq Risk	CATP M Fin Lev	Net-cost- plus (NCP)	NCP Fitted Values	NCP Residuals	Inv Fitted Values	Inv Residuals	Rec Fitted Values	Rec Residuals	Liq Fitted Values	Liq Residuals	Fin Lev Fitted Values	Fin Lev Residuals
ALSACE CONSTRUCTIONS CARROSSERIE	0.1517	1.2778	0.9279	0.7368	0.0564	2.061	0.101	-0.0867	0.1431	0.0571	-0.0007	0.0571	-0.0007	57.381	10.999
AMENAGEMENT CARROSSERIE EQUIPEMENT DE VEHICULES	0.2114	1.4357	1.0632	0.3778	0.0397	3.733	0.702	-0.0517	0.0914	0.0718	-0.0321	0.0718	-0.0321	84.828	-3.228
ANDREOLI RIMORCHI	0.0377	3.5572	1.0243	0.6277	0.0194	1.000	-0.459	-0.0617	0.0811	0.0290	-0.0096	0.0290	-0.0096	31.914	3.186
ATRANS AB	0.1787	0.6508	1.37	0.0356	0.0182	0.608	-0.576	0.0277	-0.0095	0.0637	-0.0455	0.0637	-0.0455	21.544	-18.444
AUSSA CONTAINERS - SOCIETA' A RESP	7.6681	0.2186	15.182	1.0894	4.4352	0.175	-0.131	3.6004	0.8348	1.9061	2.5291	1.9061	2.5291	7.338	-3.078
BASCULANTES PEPIN SA	0.1224	0.9485	2.0966	1.1489	0.0203	0.034	0.014	0.2157	-0.1954	0.0499	-0.0296	0.0499	-0.0296	5.251	-0.621
CARROCERIAS DASAN SA	0.1163	1.004	1.3038	0.7279	0.0301	0.007	0.024	0.0106	0.0195	0.0484	-0.0183	0.0484	-0.0183	4.506	-1.516
CARROCERIAS FRANCISCO CASTELLO BROSETA SA	0.0703	2.3253	1.4088	0.8679	0.0156	-0.139	-0.116	0.0377	-0.0221	0.0371	-0.0215	0.0371	-0.0215	0.141	-34.461
CARROCERIES ES-MI S.L.	0.1069	1.1857	2.1959	1.02	0.1412	-0.040	0.090	0.2413	-0.1001	0.0461	0.0951	0.0461	0.0951	3.683	1.077
CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	0.0209	8.0213	0.9472	0.5882	0.0232	-0.015	0.066	-0.0817	0.1049	0.0249	-0.0017	0.0249	-0.0017	3.708	1.142
CASADEI	0.1238	3.2256	0.9124	0.0759	0.0233	-0.115	0.091	-0.0907	0.1140	0.0502	-0.0269	0.0502	-0.0269	-0.578	-1.792
CCC CONSTRUCTEUR	0.0556	6.3846	1.615	1.2368	0.0278	0.089	-0.031	0.0911	-0.0633	0.0334	-0.0056	0.0334	-0.0056	5.646	-0.116
CONSTRUCTIE VERGAUWE	0.1992	1.2081	1.5339	1	0.0136	-0.006	0.082	0.0701	-0.0565	0.0688	-0.0552	0.0688	-0.0552	3.424	3.596
DALA LAMINAT AB	0.1733	0.6008	1.5295	0.7069	0.0877	-0.041	0.140	0.0690	0.0187	0.0624	0.0253	0.0624	0.0253	2.798	6.162
ETABLISSEMENT KOLLE	0.0882	1.7409	2.0131	1.08	0.0275	0.448	-0.394	0.1941	-0.1666	0.0415	-0.0140	0.0415	-0.0140	11.646	-6.576
ETS LEROUGE	0.1225	1.5446	1.251	0.8966	0.0328	-0.005	-0.007	-0.0031	0.0359	0.0499	-0.0171	0.0499	-0.0171	2.368	-3.668
EUROLIFT SARL	0.022	13.2143	0.9848	1	-0.0215	0.013	0.024	-0.0719	0.0504	0.0252	-0.0467	0.0252	-0.0467	3.233	0.267
FOKOR OY	0.1062	1.5253	1.5899	0.9244	0.0711	0.441	-0.397	0.0846	-0.0135	0.0459	0.0252	0.0459	0.0252	11.450	-7.260
GROTHKAROSS AB	0.071	1.838	1.4769	0.9632	0.0241	0.435	-0.381	0.0554	-0.0313	0.0372	-0.0131	0.0372	-0.0131	11.361	-6.291
HERMANN'S IBERICA SA	0.049	7.2276	1.1405	0.6732	0.0305	-0.057	0.045	-0.0317	0.0622	0.0318	-0.0013	0.0318	-0.0013	0.571	-1.811
M.D.M. INDUSTRIE	0.2243	1.4851	1.1229	0.2258	0.0176	0.126	-0.031	-0.0362	0.0538	0.0749	-0.0573	0.0749	-0.0573	5.544	3.126
MOBIL BAGES SAL	0.093	1.3749	1.9284	0.8347	0.03	0.433	-0.396	0.1721	-0.1421	0.0426	-0.0126	0.0426	-0.0126	11.307	-7.687
PETIT LOCATION	0.0089	19	2.0923	1	0.3338	0.231	-0.092	0.2145	0.1193	0.0219	0.3119	0.0219	0.3119	7.499	4.731
RAPID CONTAINER SERVICES	0.0514	4.4348	1.7637	1.92	-0.0062	0.376	-0.328	0.1295	-0.1357	0.0324	-0.0386	0.0324	-0.0386	10.221	-5.641
REKO TRAILER AB	0.1352	1.1865	1.5896	0.864	0.0934	0.109	-0.054	0.0845	0.0089	0.0530	0.0404	0.0530	0.0404	5.766	-0.526
ROUERGUE CARROSSERIE INDUSTRIELLE	0.0866	3.1111	0.9909	0.8131	0.0794	-0.048	0.134	-0.0704	0.1498	0.0411	0.0383	0.0411	0.0383	2.314	5.616

Company Name	CATP M Inv Risk	CATP M Rec Risk	CATPM Liq Risk	CATP M Fin Lev	Net-cost- plus (NCP)	NCP Fitted Values	NCP Residuals	Inv Fitted Values	Inv Residuals	Rec Fitted Values	Rec Residuals	Liq Fitted Values	Liq Residuals	Fin Lev Fitted Values	Fin Lev Residuals
SARL D'EXPLOITATION DU GARAGE BERTA	0.1456	0.7273	1.1486	1	0.0536	-0.022	0.068	-0.0296	0.0832	0.0556	-0.0020	0.0556	-0.0020	2.841	1.539
SARL HUWER HYDROVIDE	0.119	2.0844	2.228	0.9957	0.0935	0.033	-0.016	0.2496	-0.1561	0.0490	0.0445	0.0490	0.0445	4.821	-3.091
SARL IFOR WILLIAMS FRANCE	0.0733	3.1729	1.1866	0.6744	0.007	0.128	-0.029	-0.0197	0.0267	0.0378	-0.0308	0.0378	-0.0308	5.841	3.199
SOC COMMERCIALE PROMOTION DISTRIBUTION	0.318	0.3061	1.4333	0.4458	0.0586	0.147	-0.099	0.0441	0.0145	0.0980	-0.0394	0.0980	-0.0394	6.453	-1.803
STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	0.0702	1.8712	0.5745	0.5909	0.0134	0.079	-0.068	-0.1781	0.1915	0.0370	-0.0236	0.0370	-0.0236	5.717	-4.637
STE TECHNIQUE INDUSTRIELLE MERIDIONALE	0.0455	6.7333	1.2727	0.9744	0.0305	0.216	-0.184	0.0025	0.0280	0.0310	-0.0005	0.0310	-0.0005	7.176	-4.006
SUPERCAR ALLESTIMENTI	0.0561	2.213	1.1905	1	0.0289	0.009	0.031	-0.0187	0.0476	0.0336	-0.0047	0.0336	-0.0047	4.122	-0.302
UNICAR FURGONATURE S.P.A.	0.1754	1.5609	0.8551	2.3559	-0.0357	0.033	0.020	-0.1055	0.0698	0.0629	-0.0986	0.0629	-0.0986	3.919	1.071
UTILITAIRES PRO SERVICES UPS	0.2747	0.1617	3.4897	1.0152	0.0437	0.053	-0.039	0.5760	-0.5323	0.0873	-0.0436	0.0873	-0.0436	4.058	-2.718
VEHICULES INDUSTRIELS TRACTES	0.4443	0.4013	0.5275	1.4156	-0.2555	0.172	-0.112	-0.1902	-0.0653	0.1291	-0.3846	0.1291	-0.3846	6.857	-1.257
ALSACE CONSTRUCTIONS CARROSSERIE	0.3096	0.6749	1.059	0.747	0.0755	0.080	0.053	-0.0527	0.1282	0.0959	-0.0204	0.0959	-0.0204	4.628	7.062
AMENAGEMENT CARROSSERIE EQUIPEMENT DE VEHICULES	0.1818	0.4857	1.1429	0.4421	0.0365	-0.009	0.083	-0.0310	0.0675	0.0645	-0.0280	0.0645	-0.0280	3.251	3.619
ANDREOLI RIMORCHI	0.0174	22.6111	1.0548	0.9312	0.031	0.039	-0.015	-0.0538	0.0848	0.0240	0.0070	0.0240	0.0070	5.209	-2.809
ATRANS AB	0.1383	1.6411	1.4591	0.826	0.0511	0.015	0.022	0.0508	0.0003	0.0538	-0.0027	0.0538	-0.0027	4.039	-0.509
AUSSA CONTAINERS - SOCIETA' A RESP	10.4972	0.2169	4.5164	1.0225	2.1622	-0.007	0.034	0.8416	1.3206	2.6021	-0.4399	2.6021	-0.4399	3.253	-0.593
BALEIKE S.L.	0.0111	15.8835	1.068	0.9723	0.0871	-0.011	0.052	-0.0504	0.1375	0.0225	0.0646	0.0225	0.0646	3.644	0.306
BOBO CAB SWEDEN AB	0.0712	1.4696	1.2051	0.7846	0.0267	-0.026	0.087	-0.0150	0.0417	0.0373	-0.0106	0.0373	-0.0106	2.880	2.850
CARROCERIAS DASAN SA	0.1399	0.7292	1.3297	0.6663	0.0291	0.090	-0.043	0.0173	0.0118	0.0542	-0.0251	0.0542	-0.0251	4.777	-0.277
CARROCERIAS FRANCISCO CASTELLO BROSETA SA	0.0128	13.6896	1.3232	0.9465	0.0243	0.088	-0.070	0.0156	0.0087	0.0229	0.0014	0.0229	0.0014	6.006	-4.216
CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	0.0153	11.2051	0.9307	0.8376	0.0481	-0.080	0.036	-0.0859	0.1340	0.0235	0.0246	0.0235	0.0246	0.718	-5.328

Company Name	CATP M Inv Risk	CATP M Rec Risk	CATPM Liq Risk	CATP M Fin Lev	Net-cost- plus (NCP)	NCP Fitted Values	NCP Residuals	Inv Fitted Values	Inv Residuals	Rec Fitted Values	Rec Residuals	Liq Fitted Values	Liq Residuals	Fin Lev Fitted Values	Fin Lev Residuals
CARROZZERIA OFFICINE S.MARCO	0.0392	2	1.2768	0.7143	0.02	0.041	0.006	0.0036	0.0164	0.0294	-0.0094	0.0294	-0.0094	4.255	0.215
CCC CONSTRUCTEUR	0.0469	5.4118	1.8272	1.1194	0.0485	0.122	-0.065	0.1460	-0.0975	0.0313	0.0172	0.0313	0.0172	5.342	0.078
CONSTRUCTIE VERGAUWE	0.1761	1.2797	1.9066	1	0.0573	-0.078	0.051	0.1665	-0.1092	0.0631	-0.0058	0.0631	-0.0058	1.096	-3.856
CORBIN	0.2379	0.2358	0.9464	0.878	0.0861	-0.181	0.145	-0.0819	0.1680	0.0783	0.0078	0.0783	0.0078	-2.282	-1.418
DALA LAMINAT AB	0.1594	1.0418	1.2627	0.5017	0.0465	0.069	0.018	-0.0001	0.0466	0.0590	-0.0125	0.0590	-0.0125	4.701	3.369
ETABLISSEMENT KOLLE	0.0648	3.5608	1.688	1.1475	0.0214	0.244	-0.128	0.1100	-0.0886	0.0357	-0.0143	0.0357	-0.0143	7.763	2.627
ETS LEROUGE	0.0989	2.3571	1.4349	0.9625	0.076	-0.004	0.033	0.0445	0.0315	0.0441	0.0319	0.0441	0.0319	3.594	-0.714
EUROLIFT SARL	0.0484	3.4255	1.0204	1	0.0242	-0.039	0.061	-0.0627	0.0869	0.0317	-0.0075	0.0317	-0.0075	2.478	-0.348
FOKOR OY	0.1174	1.2624	1.3998	0.9522	0.1189	0.021	-0.015	0.0354	0.0835	0.0486	0.0703	0.0486	0.0703	3.345	-2.725
GROTHKAROSS AB	0.0702	3.052	1.3847	0.8065	0.0071	0.228	-0.120	0.0315	-0.0244	0.0370	-0.0299	0.0370	-0.0299	7.503	2.277
HERMANN'S IBERICA SA	0.1369	1.7619	1.1587	0.997	0.0428	0.089	-0.014	-0.0270	0.0698	0.0534	-0.0106	0.0534	-0.0106	5.002	1.968
M.D.M. INDUSTRIE	0.16	1.3876	1.0654	-0.2778	0.0095	0.037	-0.013	-0.0511	0.0606	0.0591	-0.0496	0.0591	-0.0496	5.538	-3.218
MOBIL BAGES SAL	0.0894	2.0317	1.6638	0.8649	0.0643	0.021	0.025	0.1037	-0.0394	0.0418	0.0225	0.0418	0.0225	3.632	0.768
PETIT LOCATION	0.0017	152	1.4062	1.0112	0.2851	0.050	-0.040	0.0371	0.2480	0.0202	0.2649	0.0202	0.2649	5.736	-4.796
RAPID CONTAINER SERVICES	0.0407	5.7895	1.8579	1.2609	0.0055	0.058	-0.007	0.1539	-0.1484	0.0298	-0.0243	0.0298	-0.0243	4.450	0.370
REKO TRAILER AB	0.1915	0.9731	1.6559	0.9384	0.1324	0.031	0.016	0.1017	0.0307	0.0669	0.0655	0.0669	0.0655	4.266	0.184
ROUERGUE CARROSSERIE INDUSTRIELLE	0.115	2.3633	1.2012	0.6753	0.0358	-0.050	0.041	-0.0160	0.0518	0.0480	-0.0122	0.0480	-0.0122	0.461	-1.401
SARL D'EXPLOITATION DU GARAGE BERTA	0.2777	0.2413	1.306	1.0833	0.0362	0.154	-0.055	0.0111	0.0251	0.0881	-0.0519	0.0881	-0.0519	6.066	2.934
SARL HUWER HYDROVIDE	0.0848	3.5349	2.5	1.0169	0.1326	-0.052	0.109	0.3200	-0.1874	0.0406	0.0920	0.0406	0.0920	2.366	2.974
SARL IFOR WILLIAMS FRANCE	0.0549	6.4211	1.1385	0.6774	0.0043	0.043	-0.028	-0.0322	0.0365	0.0333	-0.0290	0.0333	-0.0290	4.627	-3.077
SOC COMMERCIALE PROMOTION DISTRIBUTION	0.2381	0.4885	1.6273	0.5465	0.0553	0.066	-0.054	0.0943	-0.0390	0.0783	-0.0230	0.0783	-0.0230	6.752	-5.622
STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	0.0571	2.215	0.5282	0.7923	0.0385	-0.003	0.032	-0.1900	0.2285	0.0338	0.0047	0.0338	0.0047	3.597	-0.797
STE TECHNIQUE INDUSTRIELLE MERIDIONALE	0.0467	5.8889	1.2948	1.0244	0.0273	0.022	0.006	0.0083	0.0190	0.0312	-0.0039	0.0312	-0.0039	3.673	-0.983
UNICAR FURGONATURE S.P.A.	0.1607	1.7701	0.9914	-0.2925	0.0237	0.058	-0.023	-0.0702	0.0939	0.0593	-0.0356	0.0593	-0.0356	4.237	-0.767
UTILITAIRES PRO SERVICES UPS	0.2394	0.205	3.1652	0.9762	0.048	-0.030	0.083	0.4921	-0.4441	0.0787	-0.0307	0.0787	-0.0307	2.379	2.711

Company Name	CATP M Inv Risk	CATP M Rec Risk	CATPM Liq Risk	CATP M Fin Lev	Net-cost- plus (NCP)	NCP Fitted Values	NCP Residuals	Inv Fitted Values	Inv Residuals	Rec Fitted Values	Rec Residuals	Liq Fitted Values	Liq Residuals	Fin Lev Fitted Values	Fin Lev Residuals
VEHICULES INDUSTRIELS TRACTES	0.4424	0.5831	0.6019	0.2424	0.0499	-0.048	0.094	-0.1710	0.2209	0.1286	-0.0787	0.1286	-0.0787	2.415	1.975
ALSACE CONSTRUCTIONS CARROSSERIE	0.181	1.5931	1.0551	0.7731	0.0608	-0.022	0.073	-0.0538	0.1146	0.0643	-0.0035	0.0643	-0.0035	3.009	1.861
AMENAGEMENT CARROSSERIE EQUIPEMENT DE VEHICULES	0.1813	0.8961	0.993	0.3964	0.0411	0.042	-0.031	-0.0698	0.1109	0.0644	-0.0233	0.0644	-0.0233	4.658	-3.528
ANDREOLI RIMORCHI	0.0287	10.9831	1.0758	0.9813	0.0772	0.029	0.000	-0.0484	0.1256	0.0268	0.0504	0.0268	0.0504	3.950	-1.130
ATRANS AB	0.1513	1.4117	1.3011	0.4214	0.0157	0.043	0.008	0.0099	0.0058	0.0570	-0.0413	0.0570	-0.0413	4.049	0.811
AUSSA CONTAINERS - SOCIETA' A RESP	6.8991	0.0012	1.6147	0.9926	0.5409	-0.028	0.071	0.0910	0.4499	1.7170	-1.1761	1.7170	-1.1761	2.471	1.639
BALEIKE S.L.	0.01	35.862	1.227	1.0036	0.0917	0.065	0.029	-0.0093	0.1010	0.0222	0.0695	0.0222	0.0695	5.045	2.885
BASCULANTES PEPIN SA	0.125	0.7497	2.0479	1.3047	0.0369	0.106	-0.020	0.2031	-0.1662	0.0505	-0.0136	0.0505	-0.0136	4.376	4.164
BOBO CAB SWEDEN AB	0.0924	1.2691	1.1742	0.3708	0.0073	0.028	-0.018	-0.0229	0.0302	0.0425	-0.0352	0.0425	-0.0352	4.276	-3.336
CARROCERIAS DASAN SA	0.1472	0.7373	1.3306	0.7784	0.0276	0.221	-0.114	0.0175	0.0101	0.0560	-0.0284	0.0560	-0.0284	7.186	2.524
CARROCERIAS FRANCISCO CASTELLO BROSETA SA	0.0074	28.6207	1.6648	1.0499	0.0283	-0.012	0.016	0.1040	-0.0757	0.0216	0.0067	0.0216	0.0067	-1.319	1.649
CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	0.0143	12.5	0.9611	0.9312	0.0763	0.120	-0.083	-0.0781	0.1544	0.0233	0.0530	0.0233	0.0530	4.762	-1.202
CARROZZERIA OFFICINE S.MARCO	0.0258	6.6531	1.1523	0.8947	0.0204	0.139	-0.129	-0.0286	0.0490	0.0261	-0.0057	0.0261	-0.0057	4.767	-3.797
CCC CONSTRUCTEUR	0.0524	5.68	1.8041	1.2778	0.0258	-0.009	0.033	0.1400	-0.1142	0.0327	-0.0069	0.0327	-0.0069	4.187	-1.917
CONSTRUCTIE VERGAUWE	0.2116	1.1063	2.3684	1	0.0328	0.051	-0.037	0.2860	-0.2532	0.0718	-0.0390	0.0718	-0.0390	4.624	-3.234
DALA LAMINAT AB	0.1769	0.3878	1.3507	0.6295	0.0467	0.044	0.059	0.0227	0.0240	0.0633	-0.0166	0.0633	-0.0166	3.772	5.588
ETABLISSEMENT KOLLE	0.0672	2.6986	2.2458	1.0203	0.05	-0.051	0.070	0.2542	-0.2042	0.0363	0.0137	0.0363	0.0137	2.103	-0.263
ETS LEROUGE	0.1119	2.3575	1.4839	0.956	0.0603	-0.005	0.038	0.0572	0.0031	0.0473	0.0130	0.0473	0.0130	3.014	0.156
EUROLIFT SARL	0.1227	1.3563	1.0228	0.9167	0.0188	0.140	-0.120	-0.0621	0.0809	0.0499	-0.0311	0.0499	-0.0311	5.380	-3.390
FOKOR OY	0.1549	0.7935	1.4535	2.1098	-0.0093	-0.030	0.040	0.0493	-0.0586	0.0579	-0.0672	0.0579	-0.0672	2.394	-1.434
GROTHKAROSS AB	0.0897	1.2948	1.6296	0.9405	0.0433	-0.011	0.077	0.0949	-0.0516	0.0418	0.0015	0.0418	0.0015	2.774	3.466
HERMANN'S IBERICA SA	0.0773	2.2153	1.2709	1.0531	0.0308	0.177	-0.084	0.0021	0.0287	0.0388	-0.0080	0.0388	-0.0080	6.367	2.183
M.D.M. INDUSTRIE	0.1817	0.8729	1.1429	0.7358	0.0273	0.019	0.100	-0.0310	0.0583	0.0645	-0.0372	0.0645	-0.0372	3.364	7.266
MOBIL BAGES SAL	0.1207	0.2002	1.2388	0.9254	0.0665	0.016	0.014	-0.0062	0.0727	0.0495	0.0170	0.0495	0.0170	3.608	-0.688
NORRLANDSVAGNAR AB	0.0651	1.8496	1.5584	0.9402	0.0937	0.001	0.035	0.0764	0.0173	0.0358	0.0579	0.0358	0.0579	3.480	-0.020
OY INNSOL AB	0.0079	9.3248	1.4746	0.7777	0.0496	0.035	0.025	0.0548	-0.0052	0.0217	0.0279	0.0217	0.0279	3.728	1.962
PETIT LOCATION RAPID CONTAINER SERVICES	0.0007	239	1.6182	1.0135	0.3517	0.167	-0.026	0.0919	0.2598	0.0199	0.3318	0.0199	0.3318	6.059	6.321
	0.0429	4.8679	1.7881	1.2857	0.0095	0.070	-0.044	0.1359	-0.1264	0.0303	-0.0208	0.0303	-0.0208	4.316	-1.736

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REKO TRAILER AB	0.152	1.0857	2.0475	0.8848	0.0989	0.057	0.015	0.2030	-0.1041	0.0572	0.0417	0.0572	0.0417	4.116	2.524
ROUERGUE CARROSSERIE INDUSTRIELLE	0.1731	0.9572	1.0842	0.5248	0.0297	-0.044	0.054	-0.0462	0.0759	0.0623	-0.0326	0.0623	-0.0326	-0.138	1.118
SARL D'EXPLOITATION DU GARAGE BERTA	0.1655	0.2469	1.3989	1	0.0063	0.285	-0.030	0.0352	-0.0289	0.0605	-0.0542	0.0605	-0.0542	8.453	11.867
SARL HUWER HYDROVIDE	0.1277	2.7188	2.4618	1.042	0.1075	0.468	-0.447	0.3101	-0.2026	0.0512	0.0563	0.0512	0.0563	11.808	-9.758
SARL IFOR WILLIAMS FRANCE	0.092	3.8321	1.0915	1.1111	-0.0321	0.023	0.053	-0.0443	0.0122	0.0424	-0.0745	0.0424	-0.0745	3.476	3.584
SOC COMMERCIALE PROMOTION DISTRIBUTION	0.2229	0.492	1.8439	0.5641	0.0488	0.137	-0.012	0.1503	-0.1015	0.0746	-0.0258	0.0746	-0.0258	5.647	5.443
STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	0.0743	2.468	0.6868	0.4189	0.0188	0.032	-0.018	-0.1490	0.1678	0.0380	-0.0192	0.0380	-0.0192	4.285	-2.955
STE TECHNIQUE INDUSTRIELLE MERIDIONALE	0.037	6.4795	1.3183	1.029	0.0362	0.127	-0.097	0.0143	0.0219	0.0289	0.0073	0.0289	0.0073	5.547	-2.637
UNICAR FURGONATURE S.P.A.	0.1822	1.4179	1.0948	-0.0153	0.0246	-0.044	0.068	-0.0435	0.0681	0.0646	-0.0400	0.0646	-0.0400	2.194	0.126
UTILITAIRES PRO SERVICES UPS	0.2401	0.1363	3.4577	0.9722	0.0376	0.014	-0.007	0.5677	-0.5301	0.0788	-0.0412	0.0788	-0.0412	4.046	-3.316
VEHICULES INDUSTRIELS TRACTES	0.4365	0.5556	0.8492	0.5517	0.051	-0.054	0.022	-0.1070	0.1580	0.1271	-0.0761	0.1271	-0.0761	1.887	-5.207
VOLQUETES FELICES SL	0.0499	2.8802	2.3579	0.911	0.0645	0.061	-0.017	0.2832	-0.2187	0.0320	0.0325	0.0320	0.0325	4.131	0.019
ALSACE CONSTRUCTIONS CARROSSERIE	0.1906	0.7291	1.1128	0.7054	0.0738	0.073	-0.009	-0.0388	0.1126	0.0666	0.0072	0.0666	0.0072	4.525	1.515
AMENAGEMENT CARROSSERIE EQUIPEMENT DE VEHICULES	0.3258	0.192	1.0088	2.1304	-0.0232	0.125	-0.097	-0.0657	0.0425	0.0999	-0.1231	0.0999	-0.1231	5.186	-2.506
ANDREOLI RIMORCHI	0.0509	7.4274	1.4925	1.0029	0.1682	0.332	-0.103	0.0594	0.1088	0.0323	0.1359	0.0323	0.1359	9.303	9.287
ATRANS AB	0.1603	1.1489	1.3327	0.827	0.0461	-0.053	0.133	0.0181	0.0280	0.0592	-0.0131	0.0592	-0.0131	2.264	5.086
BALEIKE S.L.	0.0137	16.1457	1.7444	1.0052	0.1001	-0.003	0.081	0.1245	-0.0244	0.0231	0.0770	0.0231	0.0770	2.896	4.314
BASCULANTES PEPIN SA	0.1266	0.5409	2.3227	3.8534	0.0033	0.225	-0.092	0.2741	-0.2708	0.0509	-0.0476	0.0509	-0.0476	7.285	4.425
BOBO CAB SWEDEN AB	0.1237	0.7361	1.3831	0.4708	0.0141	0.092	-0.022	0.0311	-0.0170	0.0502	-0.0361	0.0502	-0.0361	4.704	1.756
CARROCERIAS DASAN SA	0.1343	0.87	1.2324	0.416	0.0095	0.011	0.019	-0.0079	0.0174	0.0528	-0.0433	0.0528	-0.0433	3.173	-0.253
CARROCERIAS FRANCISCO CASTELLO BROSETA SA	0.0335	2.4383	1.3463	1.1134	0.0243	-0.067	0.028	0.0216	0.0027	0.0280	-0.0037	0.0280	-0.0037	1.687	-5.827

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CARROCERIAS LA JUNQUERA S.L.	0.0741	1.272	0.6659	0.6756	0.0367	-0.046	0.075	-0.1544	0.1911	0.0380	-0.0013	0.0380	-0.0013	2.259	0.551
CARROCERIAS SEIN HNOS. S.L.	0.0539	1.5855	2.2162	1.0176	0.1065	-0.018	0.049	0.2466	-0.1401	0.0330	0.0735	0.0330	0.0735	2.519	0.461
CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	0.0168	9.4754	1.0394	0.9648	0.123	-0.037	0.038	-0.0578	0.1808	0.0239	0.0991	0.0239	0.0991	2.827	-2.667
CARROZZERIA OFFICINE S.MARCO	0.0773	1.3786	1.0453	0.8235	0.029	-0.036	0.017	-0.0563	0.0853	0.0388	-0.0098	0.0388	-0.0098	2.251	-4.151
CCC CONSTRUCTEUR	0.0227	13.1944	1.7444	1.4545	0.0212	-0.086	0.105	0.1245	-0.1033	0.0253	-0.0041	0.0253	-0.0041	2.137	-0.287
CONSTRUCTIE VERGAUWE	0.24	1.2062	2.4221	1	0.1394	-0.109	0.146	0.2998	-0.1604	0.0788	0.0606	0.0788	0.0606	1.250	2.290
CORBIN	0.2934	1.2283	0.8797	0.7263	0.0984	-0.007	0.014	-0.0991	0.1975	0.0919	0.0065	0.0919	0.0065	3.321	-2.621
DALA LAMINAT AB	0.1594	0.5712	1.4857	0.7178	0.0506	0.270	-0.255	0.0576	-0.0070	0.0590	-0.0084	0.0590	-0.0084	7.936	-6.516
ETABLISSEMENT KOLLE	0.0541	2.4647	2.755	1.0224	0.0763	-0.013	0.040	0.3860	-0.3097	0.0331	0.0432	0.0331	0.0432	2.938	-0.338
ETS LEROUGE	0.0792	3.6579	1.4107	1.0476	0.0301	0.027	-0.003	0.0382	-0.0081	0.0392	-0.0091	0.0392	-0.0091	3.472	-1.122
EUROLIFT SARL	0.0575	1.9804	1.0592	1	0.0155	0.029	-0.032	-0.0527	0.0682	0.0339	-0.0184	0.0339	-0.0184	1.900	-2.170
FOKOR OY	0.2156	0.7157	1.3455	0.1635	0.0109	0.021	-0.005	0.0214	-0.0105	0.0728	-0.0619	0.0728	-0.0619	3.522	-1.982
HARSH LIMITED	0.2405	0.7971	1.8663	0.9557	0.0949	0.021	-0.014	0.1561	-0.0612	0.0789	0.0160	0.0789	0.0160	3.661	-2.961
M.D.M. INDUSTRIE	0.2618	0.9111	1.3227	2.0588	-0.0122	-0.121	0.134	0.0155	-0.0277	0.0842	-0.0964	0.0842	-0.0964	1.181	0.149
MOBIL BAGES SAL	0.1233	0.5449	1.5401	0.9793	0.1032	0.159	-0.093	0.0717	0.0315	0.0501	0.0531	0.0501	0.0531	5.744	0.426
NOGE BUS FRANCE	4.918	0.163	1.0202	1	0.032	0.172	-0.122	-0.0628	0.0948	1.2296	-1.1976	1.2296	-1.1976	6.200	-1.440
NORRLANDSVAGNAR AB	0.0822	1.3712	1.7963	0.9465	0.0691	-0.129	0.236	0.1380	-0.0689	0.0400	0.0291	0.0400	0.0291	0.461	9.189
OY INNSOL AB	0.0009	108.119	1.4111	0.8919	0.0692	0.044	0.050	0.0383	0.0309	0.0200	0.0492	0.0200	0.0492	3.813	4.757
PETIT LOCATION	0.0007	224	3.0986	1.0131	0.3634	0.055	-0.034	0.4748	-0.1114	0.0199	0.3435	0.0199	0.3435	3.850	-1.760
RAPID CONTAINER SERVICES	0.0394	5.731	2.161	3	0.0016	-0.105	0.075	0.2323	-0.2307	0.0295	-0.0279	0.0295	-0.0279	0.754	-3.864
REKO TRAILER AB	0.1732	0.9753	2.5031	0.9066	0.1159	0.018	0.008	0.3208	-0.2049	0.0624	0.0535	0.0624	0.0535	3.184	-0.644
REMOLQUES HERMANOS GARCIA S.L.	0.1796	1.1106	1.731	0.9708	0.0471	0.055	0.176	0.1211	-0.0740	0.0639	-0.0168	0.0639	-0.0168	4.302	14.508
ROUERGUE CARROSSERIE INDUSTRIELLE	0.1433	0.3772	1.0601	0.6426	0.0511	0.276	-0.148	-0.0525	0.1036	0.0550	-0.0039	0.0550	-0.0039	8.303	3.047
SARL D'EXPLOITATION DU GARAGE BERTA	0.0642	1.0519	1.4513	1	0.0261	-0.058	0.074	0.0487	-0.0226	0.0356	-0.0095	0.0356	-0.0095	1.786	-0.266
SARL HUWER HYDROVIDE	0.1352	2.2488	1.8476	0.9959	0.0861	-0.146	0.185	0.1512	-0.0651	0.0530	0.0331	0.0530	0.0331	0.424	3.286
SARL IFOR WILLIAMS FRANCE	0.0788	3.5714	1.0103	1.0482	-0.0397	-0.033	0.062	-0.0653	0.0256	0.0391	-0.0788	0.0391	-0.0788	2.283	0.527
SOC COMMERCIALE PROMOTION DISTRIBUTION	0.1968	0.7278	1.9964	0.5889	0.0594	0.035	-0.008	0.1897	-0.1303	0.0682	-0.0088	0.0682	-0.0088	3.520	-0.810

Company Name	CATP M Inv Risk	CATP M Rec Risk	CATPM Liq Risk	CATP M Fin Lev	Net-cost- plus (NCP)	NCP Fitted Values	NCP Residuals	Inv Fitted Values	Inv Residuals	Rec Fitted Values	Rec Residuals	Liq Fitted Values	Liq Residuals	Fin Lev Fitted Values	Fin Lev Residuals
STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	0.1451	1.4281	0.9582	0.7541	0.0459	-0.017	0.021	-0.0788	0.1247	0.0555	-0.0096	0.0555	-0.0096	3.319	-2.889
STE ORNAISE DE CHAUDRONNERIE CARROSSERIE	0.0229	7.6667	1.7753	0.9365	0.1688	0.269	-0.193	0.1325	0.0363	0.0254	0.1434	0.0254	0.1434	7.997	-0.907
STE TECHNIQUE INDUSTRIELLE MERIDIONALE	0.021	10.64	1.4337	1.0139	0.0312	0.164	-0.058	0.0442	-0.0130	0.0249	0.0063	0.0249	0.0063	5.954	3.666
THERMOCON OY ELEMENT	0.0872	2.2991	3.0354	0.9689	0.2284	-0.024	-0.045	0.4585	-0.2301	0.0412	0.1872	0.0412	0.1872	2.419	-9.819
UNICAR FURGONATURE S.P.A.	0.1781	0.636	1.0639	1.5307	-0.044	0.068	-0.042	-0.0515	0.0075	0.0636	-0.1076	0.0636	-0.1076	4.033	-1.513
UTILITAIRES PRO SERVICES UPS	0.291	0.1169	3.4975	0.978	0.0534	0.012	-0.019	0.5780	-0.5246	0.0913	-0.0379	0.0913	-0.0379	1.996	-2.616
VEHICULES INDUSTRIELS TRACTES	0.5158	0.4583	0.8291	0.3529	0.0308	0.029	0.139	-0.1122	0.1430	0.1466	-0.1158	0.1466	-0.1158	2.595	0.765
VOLQUETES FELICES SL	0.0595	3.4817	2.7602	0.9566	0.128	-0.031	0.066	0.3873	-0.2593	0.0344	0.0936	0.0344	0.0936	3.783	10.617
ALSACE CONSTRUCTIONS CARROSSERIE	0.1493	1.1007	0.9581	-0.8095	0.0114	-0.044	0.094	-0.0788	0.0902	0.0565	-0.0451	0.0565	-0.0451	2.423	2.357
ANDREOLI RIMORCHI	0.0621	7.2525	1.6197	0.9963	0.2317	0.200	-0.135	0.0923	0.1394	0.0350	0.1967	0.0350	0.1967	6.860	-0.800
ATRANS AB	0.1456	0.671	1.5531	0.8662	0.0359	-0.016	0.047	0.0751	-0.0392	0.0556	-0.0197	0.0556	-0.0197	3.378	-0.418
BALEIKE S.L.	0.0229	12.8696	1.7308	1.0113	0.0954	-0.066	0.090	0.1210	-0.0256	0.0254	0.0700	0.0254	0.0700	1.721	0.649
BASCULANTES PEPIN SA	0.1241	0.6927	2.2431	1.5587	0.0098	0.083	-0.035	0.2535	-0.2437	0.0503	-0.0405	0.0503	-0.0405	4.515	0.105
BOBO CAB SWEDEN AB	0.0938	1.6693	1.2964	0.4603	0.0135	-0.013	0.040	0.0087	0.0048	0.0428	-0.0293	0.0428	-0.0293	2.854	-0.194
CARROCERIAS DASAN SA	0.1414	0.6191	1.2737	0.3365	0.0114	-0.013	0.044	0.0028	0.0086	0.0545	-0.0431	0.0545	-0.0431	2.974	-0.014
CARROCERIAS FRANCISCO CASTELLO BROSETA SA	0.1062	2.5999	1.6933	1.0205	0.0264	0.062	-0.053	0.1113	-0.0849	0.0459	-0.0195	0.0459	-0.0195	3.848	-2.908
CARROCERIAS SEIN HNOS. S.L.	0.0699	1.044	2.2041	1.0854	0.0658	0.078	-0.073	0.2435	-0.1777	0.0370	0.0288	0.0370	0.0288	4.239	-3.689
CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	0.0106	14.1842	1.3651	0.9751	0.1122	-0.159	0.034	0.0264	0.0858	0.0224	0.0898	0.0224	0.0898	-0.017	-14.213
CARROZZERIA OFFICINE S.MARCO	0.1004	1.455	3.7424	1	0.0209	0.010	-0.009	0.6414	-0.6205	0.0445	-0.0236	0.0445	-0.0236	0.512	-0.352
CCC CONSTRUCTEUR	0.1051	3.5252	1.7267	2.6923	0.0099	0.002	0.018	0.1200	-0.1101	0.0456	-0.0357	0.0456	-0.0357	3.308	-1.348
CORBIN	0.0406	6.5345	0.583	1.1232	-0.1245	-0.040	0.059	-0.1759	0.0514	0.0297	-0.1542	0.0297	-0.1542	2.737	-0.837
DALA LAMINAT AB	0.1613	0.8938	1.655	0.7557	0.075	-0.010	0.046	0.1014	-0.0264	0.0594	0.0156	0.0594	0.0156	2.935	0.555
ETABLISSEMENT KOLLE	0.0731	2.7895	2.7748	1.1081	0.0144	-0.014	0.038	0.3911	-0.3767	0.0377	-0.0233	0.0377	-0.0233	2.466	-0.096
ETS LEROUGE	0.0746	2.8585	1.1751	1.037	-0.0187	0.050	0.063	-0.0227	0.0040	0.0381	-0.0568	0.0381	-0.0568	3.959	6.231

Company Name	CATP M Inv Risk	CATP M Rec Risk	CATPM Liq Risk	CATP M Fin Lev	Net-cost- plus (NCP)	NCP Fitted Values	NCP Residuals	Inv Fitted Values	Inv Residuals	Rec Fitted Values	Rec Residuals	Liq Fitted Values	Liq Residuals	Fin Lev Fitted Values	Fin Lev Residuals
EUROLIFT SARL	0.0929	3.8264	1.1112	1.0278	0.0238	-0.051	0.128	-0.0392	0.0630	0.0426	-0.0188	0.0426	-0.0188	2.500	4.670
GROTHKAROSS AB	0.0533	1.9692	1.2481	1.016	-0.0689	0.009	0.040	-0.0038	-0.0651	0.0329	-0.1018	0.0329	-0.1018	3.230	1.400
HARSH LIMITED	0.283	0.7215	1.3569	1.4838	-0.0129	-0.034	0.054	0.0243	-0.0372	0.0894	-0.1023	0.0894	-0.1023	2.664	-0.664
HERMANN'S IBERICA SA	0.1207	1.2598	1.1573	0.9843	0.0097	0.075	0.021	-0.0273	0.0370	0.0495	-0.0398	0.0495	-0.0398	4.957	3.753
M.D.M. INDUSTRIE	0.2096	0.9307	1.3586	0.8252	0.0525	0.085	0.084	0.0248	0.0277	0.0713	-0.0188	0.0713	-0.0188	4.913	9.527
MEKAUTO AB	0.0708	1.6375	1.9178	2.1071	-0.0027	0.045	-0.024	0.1694	-0.1721	0.0372	-0.0399	0.0372	-0.0399	3.800	-1.720
MOBIL BAGES SAL	0.0663	1.0503	0.6724	0.9502	0.1068	-0.069	0.048	-0.1527	0.2595	0.0361	0.0707	0.0361	0.0707	2.263	-4.463
NOGE BUS FRANCE	0.6819	0.2027	1.739	0.7791	0.0445	0.015	0.016	0.1232	-0.0787	0.1875	-0.1430	0.1875	-0.1430	3.669	-0.649
NORRLANDSVAGNAR AB	0.085	1.4273	1.3133	0.9623	0.0777	-0.051	0.074	0.0130	0.0647	0.0407	0.0370	0.0407	0.0370	2.850	-0.590
OY INNSOL AB	0.0294	3.0078	1.6137	0.9413	0.1135	-0.044	0.075	0.0907	0.0228	0.0270	0.0865	0.0270	0.0865	3.444	-0.434
PETIT LOCATION	0.0006	331	2.8121	1.0398	0.3774	-0.060	0.183	0.4007	-0.0233	0.0199	0.3575	0.0199	0.3575	2.242	8.708
REKO TRAILER AB	0.1641	1.0856	2.4141	0.8719	0.1084	-0.070	0.118	0.2978	-0.1894	0.0601	0.0483	0.0601	0.0483	2.327	2.263
REMOLQUES HERMANOS GARCIA S.L.	0.2247	0.6396	1.0774	0.8543	0.0458	-0.070	0.147	-0.0480	0.0938	0.0750	-0.0292	0.0750	-0.0292	2.278	4.812
ROUERGUE CARROSSERIE INDUSTRIELLE	0.1479	0.2735	1.0867	0.4702	0.0288	0.079	0.021	-0.0456	0.0744	0.0561	-0.0273	0.0561	-0.0273	5.248	3.852
SARL D'EXPLOITATION DU GARAGE BERTA	0.0509	6.5606	1.1868	1	0.0347	-0.001	0.025	-0.0197	0.0544	0.0323	0.0024	0.0323	0.0024	3.659	-1.279
SARL HUWER HYDROVIDE	0.0957	2.932	2.0253	0.9756	0.1248	-0.050	0.138	0.1972	-0.0724	0.0433	0.0815	0.0433	0.0815	2.815	5.195
SARL IFOR WILLIAMS FRANCE	0.0763	4.0455	1.0245	0.6667	0.0016	0.006	0.107	-0.0617	0.0633	0.0385	-0.0369	0.0385	-0.0369	3.764	6.326
SOC COMMERCIALE PROMOTION DISTRIBUTION	0.2233	0.731	1.8139	0.7517	0.0994	-0.007	0.098	0.1425	-0.0431	0.0747	0.0247	0.0747	0.0247	4.906	3.494
STE INDUSTRIELLES DE VENTES ECHANGES LOCATIONS	0.1758	1.4673	1.0021	1.3333	-0.0268	0.148	0.185	-0.0675	0.0407	0.0630	-0.0898	0.0630	-0.0898	6.753	18.277
STE ORNAISE DE CHAUDRONNERIE CARROSSERIE	0.0504	6.2658	1.0967	0.9333	0.0502	0.037	0.012	-0.0430	0.0932	0.0322	0.0180	0.0322	0.0180	4.317	0.403
STE TECHNIQUE INDUSTRIELLE MERIDIONALE	0.0273	6.6154	1.4322	1.0636	0.0485	0.069	-0.041	0.0438	0.0047	0.0265	0.0220	0.0265	0.0220	5.801	-3.051
THERMOCON OY ELEMENT	0.1035	2.1613	2.7792	0.9551	0.2551	0.115	0.170	0.3922	-0.1371	0.0452	0.2099	0.0452	0.2099	14.791	7.399
THIERRY	0.0647	2.9808	0.87	1.16	-0.0302	0.091	-0.022	-0.1016	0.0714	0.0357	-0.0659	0.0357	-0.0659	11.631	-5.161
UNICAR FURGONATURE S.P.A.	0.1663	0.994	1.0246	0.8383	0.0218	0.499	-0.135	-0.0616	0.0834	0.0607	-0.0389	0.0607	-0.0389	26.772	-0.122
UTILITAIRES PRO SERVICES UPS	0.2627	0.1552	3.4541	0.9821	0.0534	0.223	0.129	0.5668	-0.5134	0.0844	-0.0310	0.0844	-0.0310	22.514	3.506

Company Name	CATP M Inv Risk	CATP M Rec Risk	CATPM Liq Risk	CATP M Fin Lev	Net-cost- plus (NCP)	NCP Fitted Values	NCP Residuals	Inv Fitted Values	Inv Residuals	Rec Fitted Values	Rec Residuals	Liq Fitted Values	Liq Residuals	Fin Lev Fitted Values	Fin Lev Residuals
VEHICULES INDUSTRIELS TRACTES	0.6134	0.355	0.8801	0.2941	0.0485	0.523	-0.146	-0.0990	0.1475	0.1707	-0.1222	0.1707	-0.1222	34.192	-6.792

**Appendix 4.5. Net-Cost-Plus (NCP) Scatter plot**

*Figure 34: Net-Cost-Plus CATPM Inventory Scatter plot*

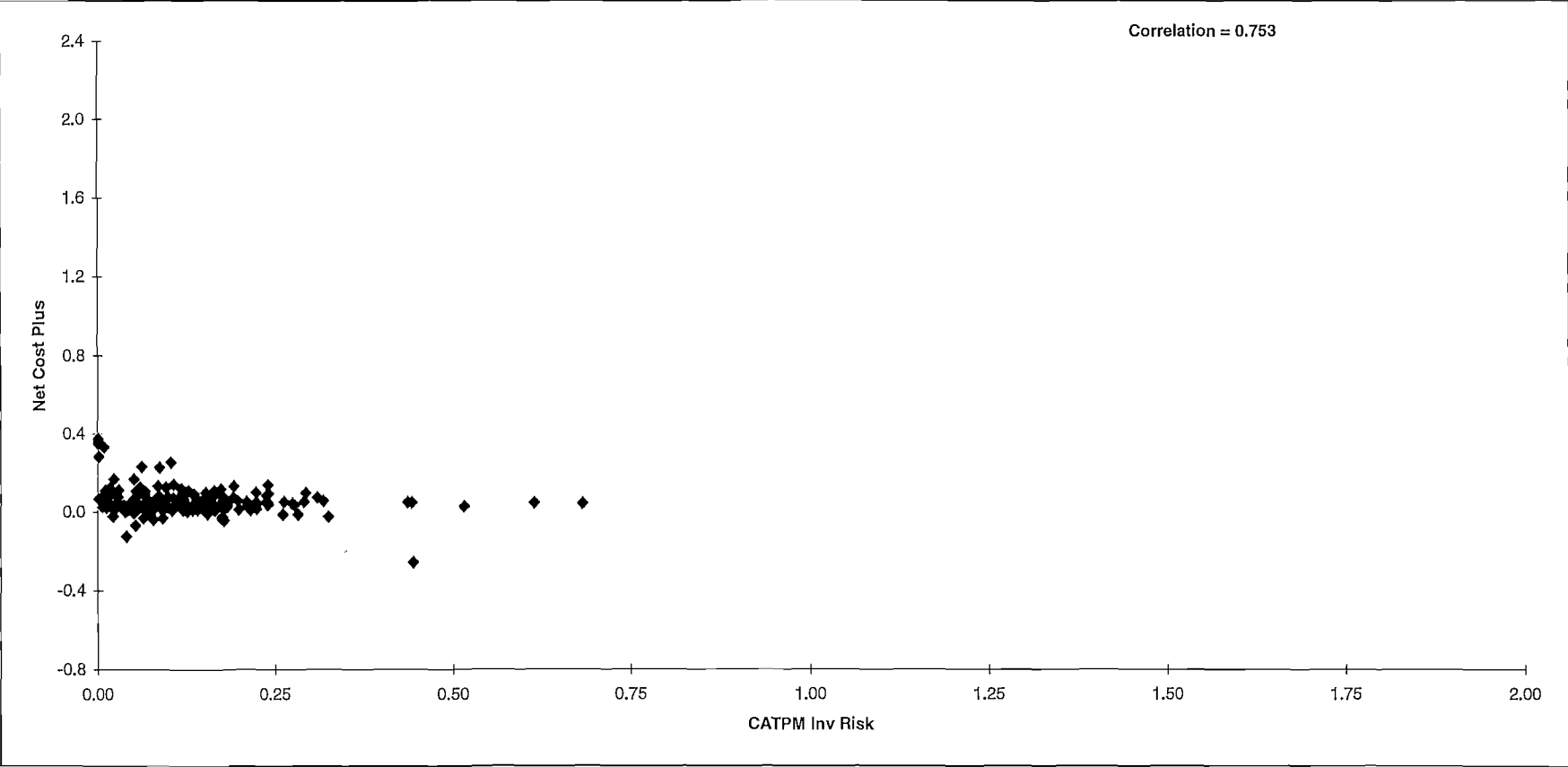


Figure 35: Net-Cost-Plus CATPM Receivable Scatter plot

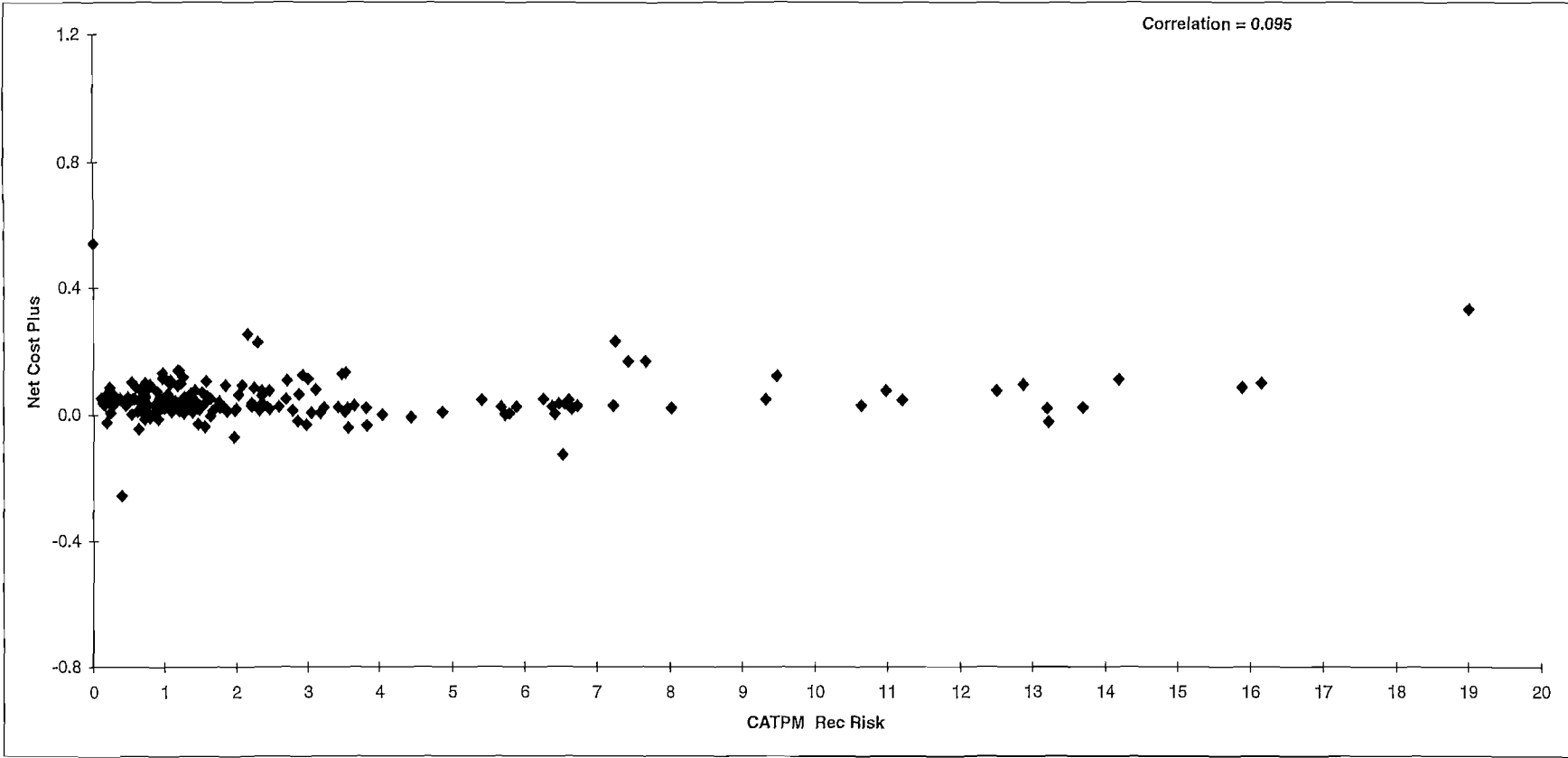


Figure 36 Net-Cost-Plus CATPM Liquidity Scatter plot

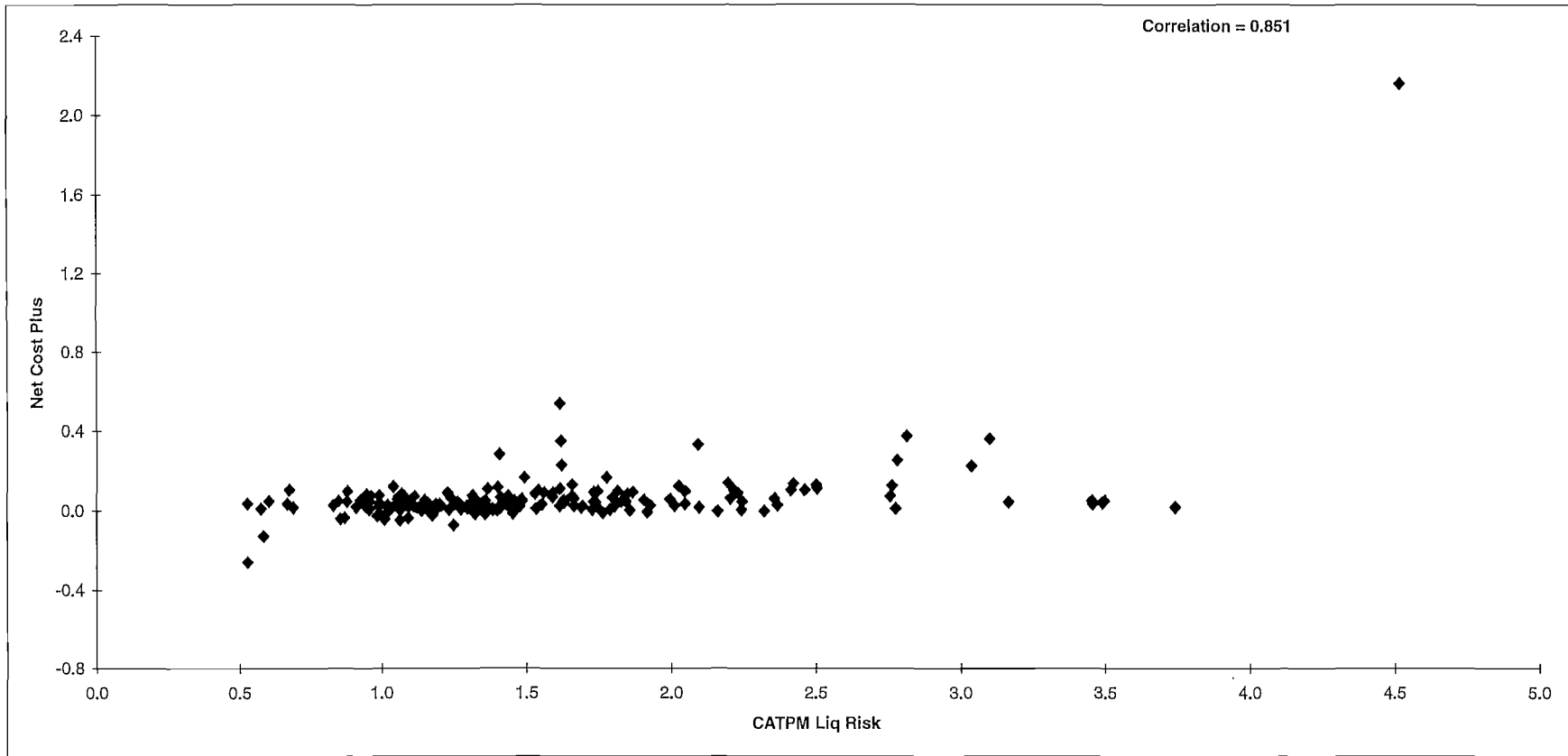


Figure 37: Net-Cost-Plus CATPM Activity Scatter plot

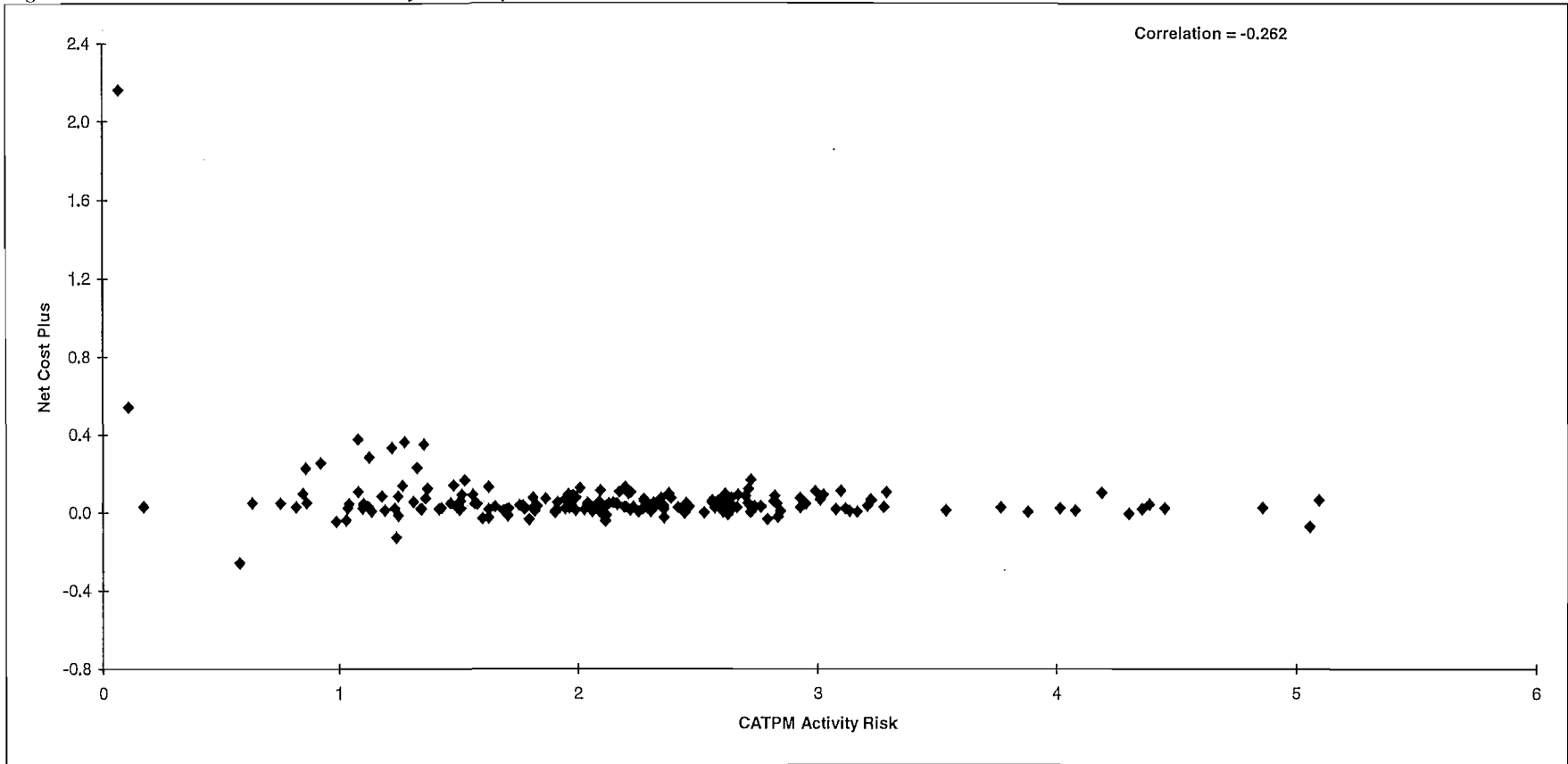


Figure 38: Net-Cost-Plus CATPM Solvency Scatter plot

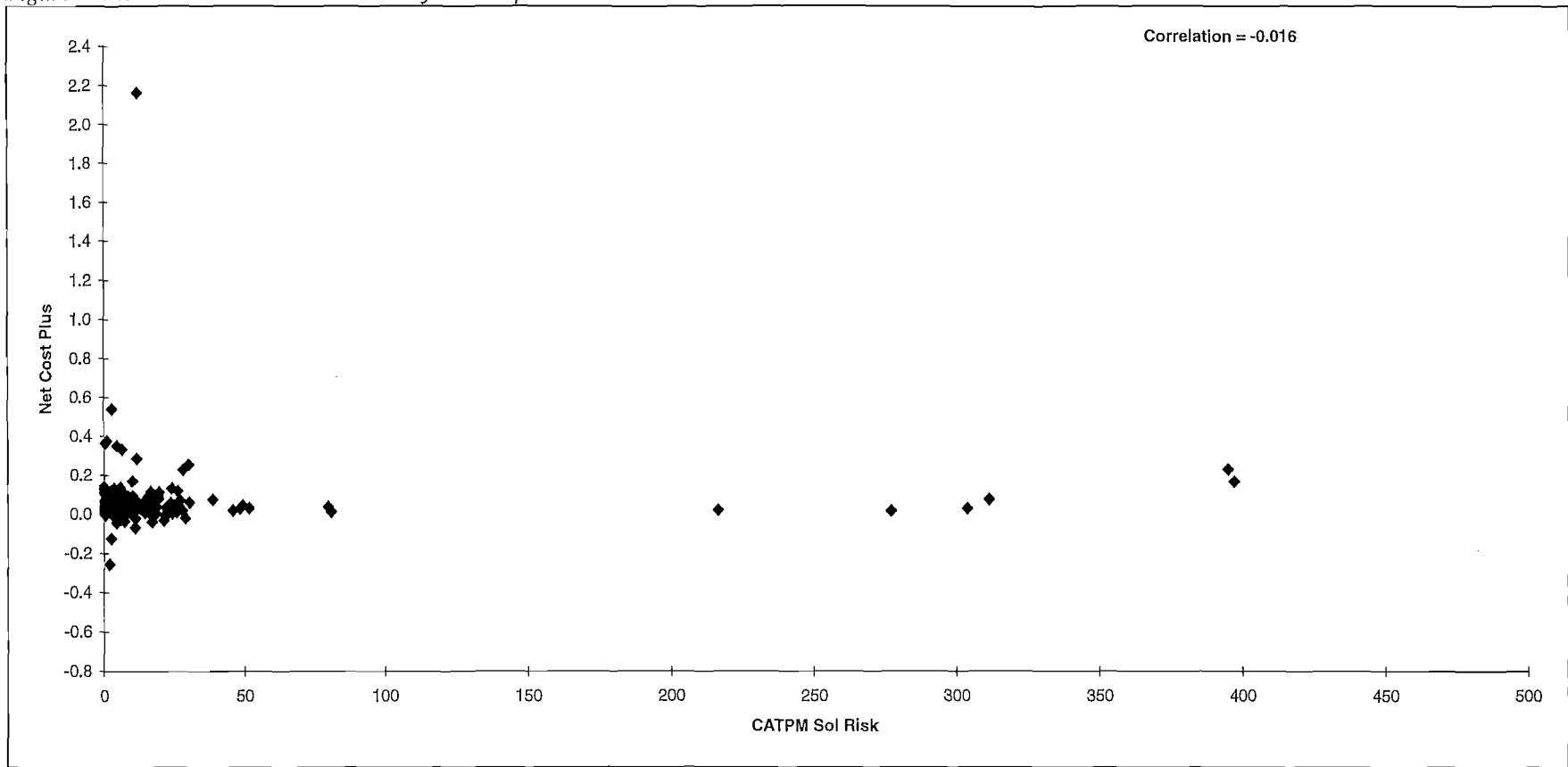


Figure 39: Net-Cost-Plus CATPM Financial leverage Scatter plot

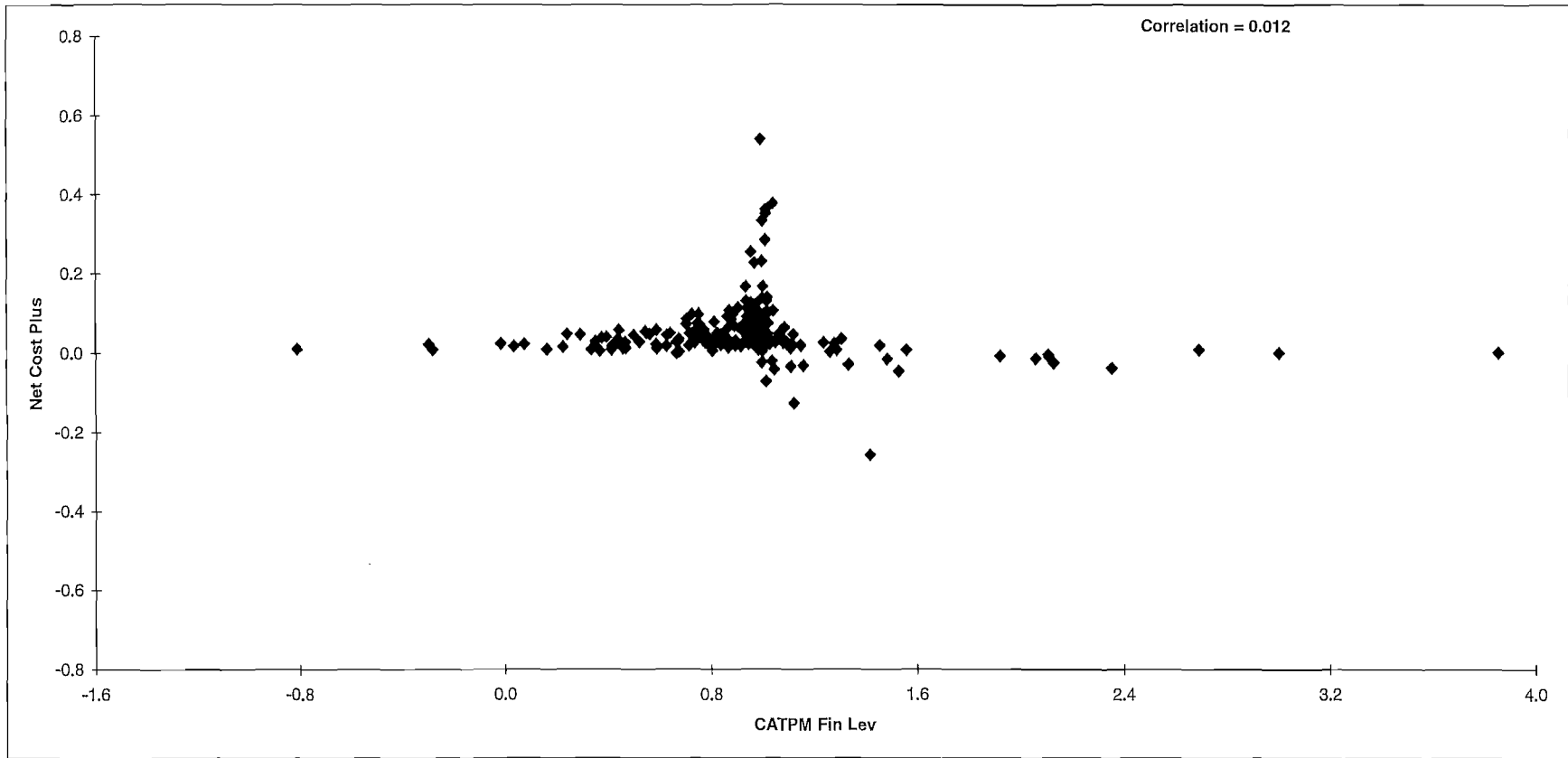
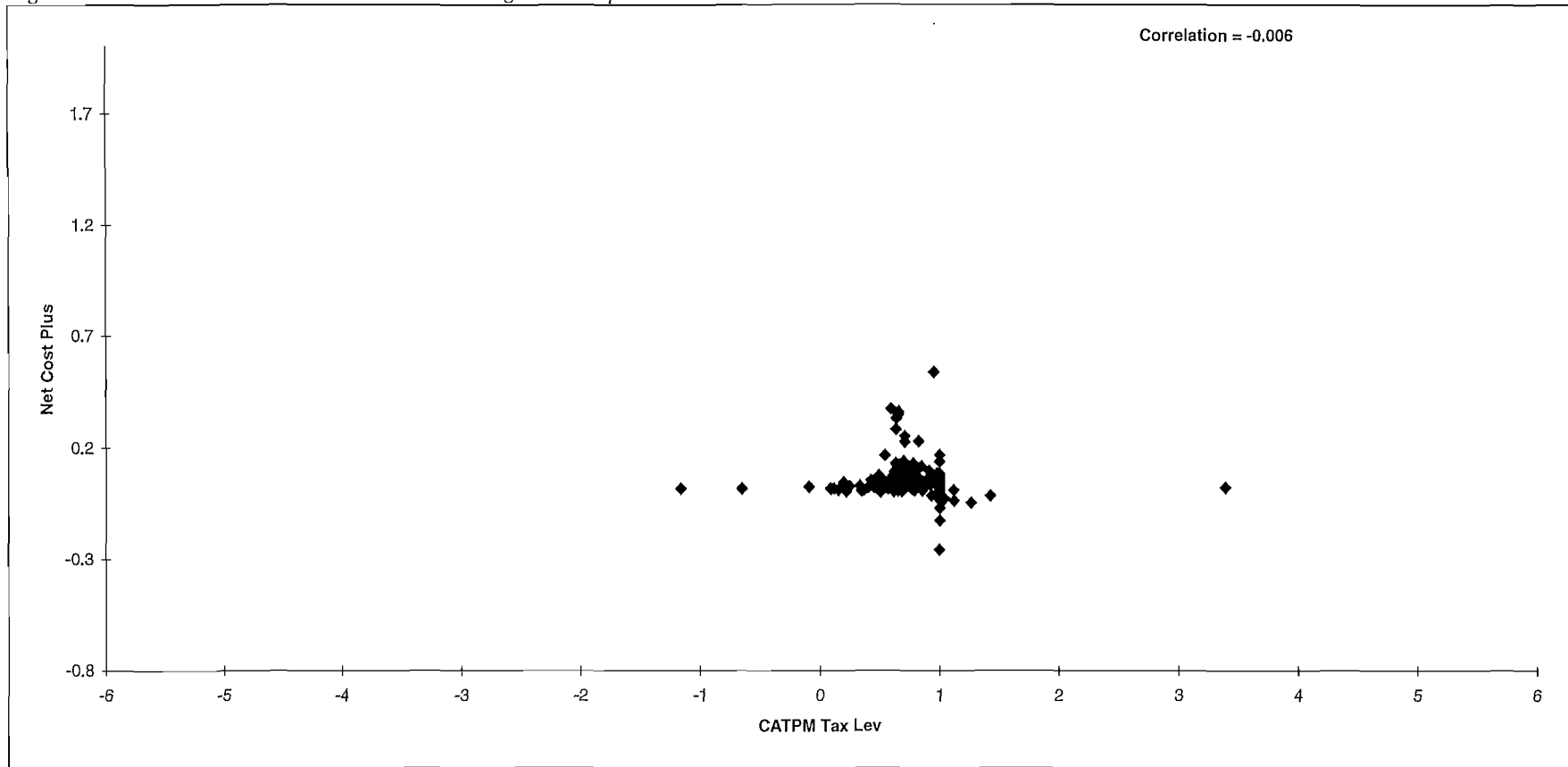


Figure 40: Net-Cost-Plus CATPM Taxation leverage Scatter plot



## Appendix 4.6. CATPM arm's length NCP consideration

### Regression NCP for the period 1998 to 2002

Estimation of the Arm's length consideration	Tested Party			Hypothetical first quartile Company			Hypothetical Median Company			Hypothetical third quartile Company		
	Tested Party Ratio's (Median)	Regression Output Coefficients or weights	Weights x Tested Ratio's	first quartile Ratio's	Regression Output Coefficients or weights	Weights x Median Ratio's	Median Ratio's	Regression Output Coefficients or weights	Weights x Median Ratio's	third quartile Ratio's	Regression Output Coefficients or weights	Weights x Median Ratio's
<b>Intercept</b>	1.000	-0.1968	-0.1968	1.0000	-0.1968	-0.1968	1.0000	-0.1968	-0.1968	1.0000	-0.1968	-0.1968
Inventory Risk	0.384	0.1386	0.0532	0.0549	0.1386	0.0076	0.1062	0.1386	0.0147	0.1754	0.1386	0.0243
Receivable Risk	0.596	0.0008	0.0005	0.7971	0.0008	0.0006	1.5253	0.0008	0.0012	3.5572	0.0008	0.0027
Liquidity Risk	1.115	0.1941	0.2165	1.0867	0.1941	0.2110	1.3651	0.1941	0.2650	1.7753	0.1941	0.3447
Financial Leverage	-0.114	-0.0731	0.0083	0.7470	-0.0731	-0.0546	0.9560	-0.0731	-0.0699	1.0169	-0.0731	-0.0743
<b>Sum</b>			<b>8.17%</b>			<b>-3.22%</b>			<b>1.43%</b>			<b>10.06%</b>
<b>Difference amongst Tested Party and Comparable Data</b>						<b>11.39%</b>			<b>6.74%</b>			<b>-1.89%</b>
<b>Interquartile PLI</b>	<b>Operating Margin</b>					<b>1.99%</b>			<b>3.56%</b>			<b>7.02%</b>
<b>Tested Party Profit Level Indicator</b>						<b>2.40%</b>			<b>2.40%</b>			<b>2.40%</b>
<b>Variance Premium (Discount)</b>						<b>5.62%</b>			<b>0.97%</b>			<b>-7.66%</b>

## **Appendix 5. ZA CASE 01**

### **Appendix 5.1. Transfer pricing evaluation process planning**

#### **Appendix 5.1.1. Cross-border dealings amongst the connected parties**

The following structure was used in the evaluation of the cross border transactions of ZA Case 01, it is numbered for ease of reference, and the numbering is indicative of the chronological order of the process.

##### Planning

- Process planning, setting up meetings

##### Business Operations

- Site visits and presentation

- De-brief session

##### Follow-up and process mapping

##### Administration

- Set up interviews with concerned parties

- Compile and finalise questions

- Forward questions for forthcoming meetings and interviews

##### Interviews and documentation of interview information

- Overview of organisation

- Commercial and industry conditions

- Consideration of transactions under review

  - Nature and terms

  - Form of consideration charged or paid

  - Sales or purchase volume

  - Scope and terms of warranties

  - Rights to updates, revisions or modifications

  - Duration of licences, contracts or agreements

  - Termination or renegotiation rights

  - Collateral transactions or ongoing business relations

  - Arrangement for ancillary or subsidiary services

  - Credit and payment terms

## Economic Conditions

- Geographic location
- Size of market
- Extent of competition
- Availability of substitute goods & services
- Transportation cost
- Level of market (Wholesale - Retail)
- Property involved

## Business Strategies

### Treatment of risk

- Risk of change in cost, price or stock (supply, demand, market)
- Risk relating to the success or failure of research and development (R&D)
- Financial risk, foreign exchange and interest rates
- Risk of lending and payment terms
- Risk of manufacturing liability
- Business risk related to ownership of facilities or assets
- Consistency of risk allocation with economic substance
  - Purported allocation of risk is consistent with economic substance of transaction
  - Analyse risk (business cycle), market risk over which neither party has control
  - Verify risk in terms of strategy, i.e. hedge/put and call options, forward contracts

### Internal review

Verify and change/incorporate reviews

### External review

Verify and change/incorporate external review(s)

## **Appendix 5.1.2. Selecting the appropriate transfer pricing method**

### Selection and application of method documenting

- Degree of comparability amongst uncontrolled and controlled transactions
- Completeness and accuracy of data relied on
- Reliability of assumptions
- Sensitivity of results and possible deficiencies in data and assumptions

Assessment of quality of data and information including which pricing method(s) is the most appropriate under the circumstances.

- Consider the quality of data

- Consider level of consistency

- Consider which pricing methods will be the most appropriate

- Verify

Integrate information obtained in Section 1 to determine

- Determination of comparability (transactional) under the traditional transaction methods

- Determination of comparability (enterprise) under the profit level indicators methods

- Allocation of consideration amongst enterprises when the profit split method is applicable

### **Appendix 5.1.3. Application of the pricing method or methods**

Once selection has been made, functional analysis as pertained in section 1 can be extended to reflect method selection

Pricing based on external benchmarks to establish the degree of comparability.

- Clarify comparability in terms of

  - Characteristics of goods and services

  - Relative importance of functions performed

  - Terms and conditions of relevant agreements

  - Relative risk assumed by MNE, connected enterprises and any independent party where such party is considered as a possible comparable

  - Economic and market conditions

  - Business Strategies

Make and document adjustments to enhance comparability taking cognisance of the following whilst using foreign comparables

  - Country specific risk

  - Risk free rate of return

  - Inflation

  - Characteristics of goods and services

Relative importance of functions performed  
Terms and conditions of relevant agreements  
Economic and market conditions  
Business Strategies

#### **Appendix 5.1.4. Determination of the arm's length consideration**

*Documentation and demonstration of determination of arm's length outcome*

Verify and careful consideration of all facts pertaining to the specific case and the arm's length consideration as calculated

#### **Appendix 5.2. Functional Analysis Questionnaire**

##### **Appendix 5.2.1. Intangible property**

Manufacturing

Research and development

Has the company developed their own products? Are they unique?

Has the company developed manufacturing processes?

Determine how important these processes are to the business and are they unique?

Manufacturing processing/technological know-how

Does the company possess technological know how?

If so, describe the nature of this know-how

How important is this know-how to the business of the company?

Is this know how unique?

Trade marks/patents etc

Does the company own any trade marks/patents?

What is the significance of these trade marks/patents to the existence of the companies business?

Product quality

Does the company have a reputation for high quality?

Is there any other manufacturing intangibles?

Marketing

Trade marks/trade names

Does the company own any trade names/trade marks?

Does the company pay royalties for the use of any trade names/trade marks?

Does the company charge royalties for others to use trade marks/names, which they own?

How are these calculated?

How significant are these to the business of the company?

#### Corporate reputation

Does the company have a corporate reputation?

What is the nature of this reputation?

Is this corporate reputation significant to the business of the company?

### **Appendix 5.2.2. Operations**

#### Manufacturing

Raw materials purchasing

What materials or partly finished goods are purchased?

From whom are these purchases made?

Where are raw materials purchased?

How are raw materials purchased?

Who performs the purchasing function?

Who negotiates the purchasing arrangements?

Do purchasing decisions require head office approval?

What are the approvals required?

Are any purchases made on consignment?

What are the major risks?

#### Inventory

Where is the stock held?

Who is in control of the level of inventory?

How is the inventory levels controlled?

Are any purchases made on consignment?

How many days of inventory are on hand?

Who bears the cost of obsolete inventory?

What are the major risks associated with holding inventory?

Production equipment

Who determines the purchasing budget?  
Who negotiates purchasing?  
Who maintains the plant?  
Who has the authority to incur expenditure for capital equipment?  
Who writes specifications for the plant?  
From who is production equipment purchased?  
Does the company have discretion over the equipment used?  
What decisions require head office approval?  
What are the approvals required?

#### Production scheduling

Who is responsible for production scheduling decisions?  
Is a computer system used?  
What decisions require head office approval?  
What are the approvals required?  
What are the major risks?

#### Production Quality Control

What form does quality control take?  
Who sets finished product quality standards and procedures?  
Who performs the quality control and who bears the costs?  
Who provides the equipment and techniques for quality control?  
How many products are lost because it fails quality control checks?  
What are your major risks?  
What decisions require head office approval?  
What are the approvals required?

#### Shipping of products

Who pays freight charges for product in and out?  
Who arranges shipping of products?  
Who ships the products?  
Who selects the shippers?  
Who is responsible for shipping deadlines?  
What are the major risks?

## Sales and Distribution

### Sales

How are sales made and who is involved?

Who issues the invoice to the customer?

Who formulates projections and sales targets?

Where are sales orders received?

Who negotiates sales contracts?

How much is sold to related companies?

Are only finished goods shipped from South Africa?

Who are the competitors?

What are the risks related to the demand for the companies products?

Who assumes these risks?

Are products exported and who is responsible for this function?

What are the major risks in selling products in foreign countries and who assumes these?

### Final Product Quality Control

What form does quality control take?

Who sets finished product quality standards and processes?

Who performs quality control and who bears all costs?

Who provides equipment and techniques for quality control?

Who bears the loss of defective products?

What are the major risks?

### Freight

Who bears freight charges for product in and out?

Who arranges the shipment of goods?

Who ships the products? To where? How?

What are the major risks?

### Inventory

Who holds the stock and where is it held?

Who controls the level of inventory?

How are inventory levels controlled?

Are purchases of stock made on consignment?

How many days of inventory are on hand?

Who bears the cost of obsolete inventory?

What are the major inventory risks?

## Marketing

### Strategic

Does the company carry out its own marketing?

Who are the competitors?

Do related companies carry out marketing on behalf of the company?

Are independent enterprise distributors used?

Who authorize, choose and control independent enterprise distributors?

### Advertising

What forms of marketing are utilized?

What form of advertising is used?

Are trade shows used and if so who pays for them?

Who produces product brochures, specification sheets etc?

What decisions require head office approval?

### Research and development

What research and development is carried out?

Is any research and development carried out on behalf of the company by related companies?

Are third parties commissioned to carry out research and development on behalf of the company?

Where are products designed?

What input do distributors have on manufacturing, product design or product modifications?

How important is the development of patents in the industry?

What patents is owned that create unique products which competitors cannot duplicate?

What un-patented technical know-how has been developed that may differentiate products from competitors, create important cost efficiencies or provide an advantage in increasing market share?

Who formulates the budget?

Are license agreements in existence amongst the company and related companies or third parties?

Is there a cost sharing agreement in force and if so what are the details?

#### Administration and other services

##### General administration

Is there a complete administration function?

Is any administration performed by the MNE for any related party?

What decisions require head office approval and what are the approvals required?

##### Pricing policy

Is there a transfer pricing policy document in place?

Who determines the pricing policy?

What is the pricing policy for various goods and services?

What are the major risks?

Did a reputable professional advisor prepare the transfer pricing policy document?

Does the transfer pricing policy document contain a thorough macro and micro economic analysis of the company?

Does the transfer pricing policy document contain a search for independent comparable companies?

Does the search criteria applied seem reasonable in the circumstances?

Does the method applied seem reasonable in the circumstances?

##### Accounting

What accounting functions are carried out and by whom?

Where are the financial reports prepared?

Is a bank account maintained and where?

Who has cheque signatory authority?

Who bears the credit risk on sales to customers?

Who pays product liability insurance premiums?

Who arranges and pays for other insurance?

#### Legal

Who is responsible for legal matters?

What decisions require head office approval?

What are these approvals?

#### Risk

##### Market risk

What are the market risks?

Who bears these risks?

##### Inventory risk

Does inventory become obsolete?

Who bears the cost of obsolete inventory?

Who bears the cost of returns?

##### Credit and bad debt risk

What credit terms are given and received?

Who bears the cost of bad debts?

##### Foreign exchange risk

Is the company exposed to foreign currency risk?

Does the company take out forward contracts, hedges, put and call options?

If so, who incur the expense of these financial arrangements?

Who bears this risk?

To what extent did this risk materialized?

##### Failure and cost of overrun of R&D projects

Who bears this risk?

To what extent did this risk materialized?

##### Intellectual property risk

Who bears this risk?

To what extent did this risk materialized?

Insurance and product liability risk

Who bears this risk?

To what extent did this risk materialized?

Bad debt risk

Who bears this risk?

To what extent did this risk materialized?

Other risks

Identify all other risks that may impact on the return of the MNE

## Appendix 6. Comparable Data according to current approach

### Appendix 6.1. ZA CASE 01 Comparables

2001, Values in EUR (th)	BENNES GUILLAU ME SA	JAPA MAINTE NANCE	SARL ALQUIER JEUNES	UTILITAIRES PRO SERVICES UPS	DEILA	SUD EST REPARATION	CARROSSERIE VEHICULES INDUSTRIEL MELUNAISE	ALLOY BODIES LIMITED	J. C. PAYNE LIMITED
Operating revenue / turnover	3441	1297	1383	1794	3000	3609	3634	16996	18405
Operating P/L	6	14	35	91	105	261	398	457	1079
Profit (loss) before tax	4	11	34	89	108	254	384	407	1108
P/L after tax	1	8	24	60	52	243	248	304	771
Current assets: stocks	659	76	139	522	630	363	61	982	1120
Current assets: debtors	725	281	74	61	590	590	578	2745	3682
Current assets	1698	378	363	696	1372	1073	1162	4450	5955
Current liabilities	1360	262	217	199	621	920	1118	2909	5055
Total assets	1831	435	373	775	1997	1191	1340	5044	6251
Non current liabilities: long term debt	37	0	0	0	0	0	0	21	5
Current Liabilities: loans	34	58	0	27	0	286	151	74	68
Current Liabilities: creditors	942	66	169	109	500	488	559	2392	3886
Shareholders funds	153	136	156	557	1193	271	214	2104	1169
Shareholder funds: capital	91	45	44	51	601	40	114	180	10

## Appendix 7. Comparable Data according to CATPM

### Appendix 7.1. ZA CASE 01 CATPM response variables

Tested Party - ZA Case 01												
Year		NCP	OM	ROA	Profit Margin	Inventory Risk	Receivable Risk	Liquidity Risk	Activity Risk	Solvency Risk	Financial Leverage	Tax Leverage
2002	ZA Case 01	0.48%	0.48%	0.82%	-0.26%	0.2651	0.6086	1.0405	1.7114	2.4480	-0.5377	-0.7109
2001	ZA Case 01	2.40%	2.34%	3.11%	0.07%	0.2768	0.5957	1.0172	1.3289	3.4574	0.0295	0.0206
2000	ZA Case 01	3.84%	3.70%	3.86%	-0.42%	0.4682	0.5308	4.9516	1.0437	2.0271	-0.1139	-0.0797
1999	ZA Case 01	9.45%	8.64%	11.63%	2.57%	0.4299	0.4766	1.1151	1.3464	0.9526	0.2979	0.2086
1998	ZA Case 01	2.19%	2.15%	2.76%	-3.52%	0.3840	0.7600	1.2558	1.2873	-2.5722	-1.6381	-1.1467
1997	ZA Case 01	-1.08%	-1.09%	-1.65%	-10.06%	0.4069	0.3930	1.3885	1.5140	-3.0925	9.2154	6.4508
1996	ZA Case 01	8.44%	7.79%	9.55%	1.56%	0.4422	0.5363	1.2407	1.2263	-39.9184	0.1999	0.1399

Inter quartile range of tested party - ZA Case 01												
		NCP	OM	ROA	Profit Margin	Inventory Risk	Receivable Risk	Liquidity Risk	Activity Risk	Solvency Risk	Financial Leverage	Tax Leverage
	first quartile	1.34%	1.31%	1.79%	-0.0197	0.3304	0.5037	1.0778	1.2568	-2.8324	-0.3258	-0.3953
	Median	2.40%	2.34%	3.11%	-0.0026	0.4069	0.5363	1.2407	1.3289	0.9526	0.0295	0.0206
	third quartile	6.14%	5.74%	6.70%	0.0081	0.4360	0.6021	1.3222	1.4302	2.2375	0.2489	0.1742

## Appendix 7.2. ZA CASE 01 CATPM positioning analysis

Regression NCP for the period 1996to 2002

Estimation of the Arm's length consideration	Tested Party			Hypothetical first quartile Company			Hypothetical Median Company			Hypothetical third quartile Company		
	Tested Party Ratio's (Median)	Regression Output Coefficients or weights	Weights x Tested Ratio's	first quartile Ratio's	Regression Output Coefficient s or weights	Weights x Median Ratio's	Median Ratio's	Regression Output Coefficient s or weights	Weights x Median Ratio's	third quartile Ratio's	Regression Output Coefficients or weights	Weights x Median Ratio's
Intercept	1.000	-0.1738	-0.1738	1.0000	-0.1738	-0.1738	1.0000	-0.1738	-0.1738	1.0000	-0.1738	-0.1738
Inventory Risk	0.407	0.1539	0.0626	0.0557	0.1539	0.0086	0.1199	0.1539	0.0184	0.1785	0.1539	0.0275
Receivable Risk	0.557	0.0009	0.0005	0.7977	0.0009	0.0007	1.5052	0.0009	0.0014	3.5325	0.0009	0.0033
Liquidity Risk	1.716	0.1302	0.2234	1.0643	0.1302	0.1386	1.3459	0.1302	0.1753	1.7370	0.1302	0.2262
Sum			11.28%			-2.59%			2.13%			8.32%
Difference amongst Tested Party and Comparable Data Sample						13.86%			9.14%			2.96%
Tested Party Profit Level Indicator			3.68%			3.68%			3.68%			3.68%

### Appendix 7.3. Step wise regression of net-cost-plus

<i>Step 1 - Entering variable: CATPM Liq Risk</i>						
<i>Summary measures</i>						
Multiple R	0.7529					
R-Square	0.5668					
Adj R-Square	0.5652					
StErr of Est	0.2045					
<i>ANOVA Table</i>						
Source	df	SS	MS	F	p-value	
Explained	1	14.2334	14.2334	340.2144	3.826E-49	
Unexplained	260	10.8775	0.0418			
<i>Regression coefficients</i>						
	Coefficient	Std Err	t-value	p-value	Lower limit	Upper limit
Constant	-0.2362	0.0212	-11.1312	8.589E-24	-0.2780	-0.1944
CATPM Liq Risk	0.1995	0.0108	18.4449	0.000E+00	0.1782	0.2208
<i>Step 2 - Entering variable: CATPM Inv Risk</i>						
<i>Summary measures</i>						
Multiple R	0.8497	Change	% Change			
R-Square	0.7221	0.0969	12.9%			
Adj R-Square	0.7199	0.1552	27.4%			
StErr of Est	0.1642	0.1548	27.4%			
		-0.0404	-19.7%			
<i>ANOVA Table</i>						
Source	df	SS	MS	F	p-value	
Explained	2	18.1318	9.0659	336.4362	9.787E-73	
Unexplained	259	6.9792	0.0269			
<i>Regression coefficients</i>						
	Coefficient	Std Err	t-value	p-value	Lower limit	Upper limit
Constant	-0.1699	0.0179	-9.4900	1.589E-18	-0.2051	-0.1346
CATPM Liq Risk	0.1331	0.0103	12.9329	7.499E-30	0.1128	0.1534
CATPM Inv Risk	0.1501	0.0125	12.0278	9.058E-27	0.1256	0.1747
<i>Step 3 - Entering variable: CATPM Rec Risk</i>						
<i>Summary measures</i>						
Multiple R	0.8551	Change	% Change			
R-Square	0.7313	0.0054	0.6%			
Adj R-Square	0.7282	0.0092	1.3%			
StErr of Est	0.1617	0.0082	1.1%			
		-0.0024	-1.5%			
<i>ANOVA Table</i>						
Source	df	SS	MS	F	p-value	
Explained	3	18.3631	6.1210	234.0341	2.640E-73	
Unexplained	258	6.7479	0.0262			
<i>Regression coefficients</i>						
	Coefficient	Std Err	t-value	p-value	Lower limit	Upper limit
Constant	-0.1738	0.0177	-9.8264	1.455E-19	-0.2086	-0.1389
CATPM Liq Risk	0.1302	0.0102	12.7867	2.506E-29	0.1102	0.1503
CATPM Inv Risk	0.1539	0.0124	12.4469	3.608E-28	0.1295	0.1782
CATPM Rec Risk	0.0009	0.0003	2.9742	3.215E-03	0.0003	0.0015

## **Appendix 8. Profit split methodology research**

### **Appendix 8.1. Equal allocation of non-separable returns**

Equal allocation of non-separable returns (“EANSR”) is based on the premise that each party to the transaction(s) aims to realise the return they would if they were independent. Independence is based on the proposition of the arm’s length principle. Separable returns are split amongst the parties to the transactions’ in accordance with the arm’s length principle.

Returns obtained from co-operative activities and functions are equally allocated. The model which give effect to the allocation can be written as  $alr_i = sr_i + \left(\frac{1}{n} \times nsr_i\right)$  where  $alr_i$  is the arm’s length return,  $sr_i$  is the separable return,  $n$  is the number of parties to the transactions and  $nsr_i$  the non-separable returns.

This approach’s focus is on returns based on inclusive coalition of the parties to the transactions under review. Non separable return allocation ignores the value of individual parties to the transaction alluding to what they would realise if they were independent, i.e. individual returns are not based on marginal contribution.

The value of such an approach lies in its recognition of economies of scale and scope which give rise to benefits for the participants to transactions. Recognition and adjustment of benefits derived from economies of scale is problematic and is recognised by the OECD, especially in adherence to the arm’s length principle (OECD 1995: I-4).

### **Appendix 8.2. Proportional return**

Proportional return solution is founded on return allocation on the basis of either contribution or cost. The profit derived from the profit split based on the transaction under review is the product of the total return and the coefficient of cost or contribution to the sum of the cost or contribution.

This profit split approach can be illustrated as  $alr_i = r_t \frac{c_i}{\sum_t c_t}$  where  $alr_i$  is the arm’s length return,  $r_t$  is the total return from the transaction under review,  $c_i$  the cost or contribution of the specific party to the transaction and  $c_t$  the cost or contribution of all the parties to the

transactions. Cost recognition and determination might be a subjective proxy for the basis on which a profit split can be based. Defining and determination of cost according to accounting and tax reporting standards may differ which make the application more subjective. The premise that expenses or costs are incurred in the production of income is not flawed, measurement of these cost might be problematic.