

UNIVERSITY OF KWAZULU-NATAL

**THE CORPORATE FINANCE AND STRATEGY IMPLICATIONS OF COUNTRY
RISK AND INVESTOR SENTIMENT IN THE SOUTH AFRICAN MINING
INDUSTRY: A CASE STUDY OF IMPALA PLATINUM HOLDINGS LIMITED.**

By

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Declaration

I, Mellenefi Van Wyk Louw, declare that this research report is my own, unaided work, except as indicated in the acknowledgement section and references. It has not been submitted before, in whole, or in part for any degree or examination in any other university.



Mellenefi Van Wyk Louw

Signed on the 30 day of December 2006

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Abstract

Earnings in the South African and Zimbabwean mining industries have been severely impacted by these countries' socio-economic and political changes in the last decade. News reports and international research publications consistently rates Zimbabwe as a country with the highest political risks in the world. In South Africa (SA), the initial mining charter requiring 51% Black Economic Empowerment, was leaked to the press in 2002 before promulgation making international investors weary. The currency, the Rand (R) has strengthened from the US\$ from R13.85 in 2002 to R 7.17 in 2007, significantly impacting on returns as investors to shift their portfolio to other sectors. The purpose of this research was to explore the implications of country risk and investor sentiment for Impala Platinum's valuation and provide strategy recommendations to improve its market rating whilst sustaining its competitive advantage as a platform for achieving its 2010 vision.

In this study, a brief environmental scan of the mining industry was undertaken focusing on the platinum sector as well as a background review of the industry and a five year performance comparison between Impala and Anglo Platinum. It also reviewed corporate strategy literature as it relates to the research problem as well as theoretical models of investor sentiment and decision making processes.

The specific research design was primarily exploratory in nature. The Implats valuation conundrum appears to be a phenomenon and the best way to achieve the main research objective was to identify any new ideas, preliminary explore some possible hypothesis and provide strategy recommendations to the board. The research adopted both quantitative and qualitative designs to focus on understanding the values, attitudes and perceptions of investors, which is interpretive and inductive in nature. A holistic case study was the specific vehicle used to conduct the research. The research population was made up of all investors in different regions of the world. Given that the study specifically related to the Implats valuation relative to Amplats, the sampling was tailored

to their common investors. Data was collected using a questionnaire; the likert five scale was used to design the questionnaire.

The following recommendations were made as a result of the research. Implats should implement measures to build its value chain and attempt to move to a cost quartile not easy to replicate without significant investment and time. In the short term Implats needs to continue improving on its fundamental values whilst crafting a take over defence strategy. It also needs to improve on its investor relations program to robustly communicate its political risk management strategy.

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Abbreviations

AA	Affirmative Action
AMPLATS	Anglo American Platinum Corporation Limited
Anglo	Anglo American Corporation PLC
BEE	Black Economic Empowerment
BSC	Balanced score card
CAPM	Capital Asset Pricing Model
CAGR	Compound Annual Growth Rate
CIMA	Chartered Institute of Management Accountants (UK)
CashFl: AttPrft	Cash flow to Attributable profit
COSO	Committee of Sponsoring Organisations of the Treadway Commission
D : E	Debt-to-Equity ratio
DME	Department of Minerals and Energy
EEA	Employment Equity Act
EMH	Efficient Market Hypothesis
EPS	Earnings Per Share
EVA	Economic Value Added
ERM	Enterprise Risk Management
FTSE	London Securities Exchange
GARP	Growth At Reasonable Price
GDP	Gross Domestic Product
GIDH	Gradual Information Diffusion Hypothesis

HEPS	Headline Earnings Per Share
ICRG	International Country Risk Guide
IFAC	International Federation of Accountants
IFE	Institute for Fiduciary Education
IMPLATS	Impala Platinum Holdings Limited
IOD	Institute of Directors –South Africa
IntDebt : TotAss	Interest Bearing Debt : Total Assets
IR	Investor Relations
ISO	International Standards Organisation
JSE	Johannesburg Securities Exchange
LIRH	Local Investor Relations Hypothesis
NAV per share	Net Asset Value per share
M&As	Mergers and Acquisitions
MDC	Movement for Democratic Change
MNEs	Multi-National Enterprises
MPRB	Mineral and Petroleum Royalty Bill
Mt	Million Tonnage
SEC	The US Securities Exchange Commission
OMAM	Old Mutual Asset Managers
Op Pft Mgn	Operating profit margin
Pt. Oz	Platinum Ounces
P/E	Price-to-Earnings ratio
PEG	Price-to Earnings Growth

PESTEL	Political, Economic, Socio-cultural, Technological, Environmental and Legal
PGMs	Platinum Group Metals
PwC	PricewaterhouseCoopers
Reg FD	Regulation Fair Disclosure
Ret on SH Fnd	Return on shareholders' funds.
Ret on Tot Ass	Return on Total Assets
R & D	Research and Development
SDA	Skills Development Act
SEC	The US Securities Exchange Commission
SMART	Specific, Measurable, Aligned, Realistic and Time-bound Objectives
SA	South Africa (n).
SBU	Strategic Business Unit(s)
UK	United Kingdom
USA	United States of America
VBM	Value Based Management
ZANU (PF)	Zimbabwe African National Union (Patriotic Front)
ZAR	The South African currency unit (Rand)
ZIMPLATS	Zimbabwe Platinum Mining Company limited

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CHAPTER 1

SCOPE OF THE RESEARCH

1.1 Introduction

In this chapter, the research proposal is presented, revealing the basic research principles that motivated this research. It opens with a brief preliminary review (the detail is undertaken in chapter 2 – the literature review) of the background regarding the South African and Zimbabwean mining industries aimed at providing context to the research problem. Based on this background, the researcher develops the main research objective from which the specific objectives are formulated and then proceeds to define and state the main research problem. The researcher then proceeds to formulate specific research questions as components of the main research problem, ensuring that these align with the relevant research objectives (the research methodology is presented fully in chapter 3 for convenience). Thereafter the importance of the research is clarified before the chapter is concluded.

1.1.1 Background

IMPLATS is a SA PGMs mining company, listed primarily on the JSE and secondarily on London's FTSE, employing approximately 28,000 employees and ranked as the world's second largest producer of PGMs after its main competitor –AMPLATS. In 2004/05, it reported a turnover of approximately ZAR12 billion (US\$2billion) and profit before taxes of ZAR6billion (US\$1billion). Whilst its main operations are in SA with over 80% of its production, it remains the biggest mining investor in Zimbabwe with over 55% of its ore reserves and mineral resources in that country.

The SA and Zimbabwean mining industries have arguably been the most affected by these countries' socio-economic and political forces in recent times. News reports and international research publications continue to rate Zimbabwe with the highest political and economic risks, scaring off foreign investors, whereas in SA, the initial mining charter, requiring 51% BEE ownership of mining companies was leaked to the press in

2002 before promulgation, stunning international investors and industry experts. World commodity prices have been generally bullish over the last decade to the enchantment of the industry, but the ZAR has appreciated in value against the US\$ from ZAR13.85 in 2002 to ZAR7.5 in 2006 (November) far outweighing the commodity price gains, thus significantly impacting on earnings.

The above factors have seen shares in the resources (mining) sector on the JSE tumble over the last five years and over ZAR60billion (US\$12billion) in market capitalization lost as of 2004. IMPLATS, despite its relatively superior improvements in financial and operating performance in the PGMs sector during this period, has continued to deliver much lower P/E valuation multiples relative to AMPLATS. With declining investor allocations to the sector, and its relatively poor returns, the undervaluation of IMPLATS significantly impacts on its ability to effectively compete on the capital markets to raise equity finance, raising its cost of capital and now seriously constraining its growth strategy.

1.1.2 Research objectives

1.1.2.1 Main objective

The main objective of this case study is to explore the implications of country risk and investor sentiment for IMPLATS' valuation and provide strategy recommendations to improve on its market rating whilst sustaining its competitive advantage, as a platform for achieving its 2010 vision.

1.1.2.2 Specific objectives

The specific objectives are to:

- (1) Determine the extent to which AMPLATS' superiority over IMPLATS on the quantity of ore reserves and mineral resources explains IMPLATS' current valuation problem;
- (2) Assess the implications of investor sentiments relating to the country risks associated with IMPLATS' Zimbabwe operations on its valuation; and

- (3) Examine the strategy initiatives available to IMPLATS to improve on its valuation and achieve its 2010 vision.

1.2 Statement of the research problem

Corporate finance theory suggests there is a causal relationship between fundamental values and share prices and hence the value of a company as measured through its price-to-earnings (p/e) multiple. However, literature also documents that investor sentiment is an integral part of this equation. Amongst the several financial ratios investors regard in valuing a company, the p/e is the most widely accepted. It is the only financial ratio that connects the effects of fundamental values such as earnings per share and productivity and the impact of investor sentiment about the future earnings potential of the company (Brav, 2003). Over the past six years in the South African mining industry, the platinum sector to be specific, Impala Platinum has outperformed its number one rival – Anglo Platinum on improvements in virtually all the fundamental values mining companies report on. In theory, this should translate into a superior valuation (p/e) multiple for Impala relative to Anglo Platinum or at minimum, to superior improvements. To the contrary, the valuation gap between the two companies has worsened over the last six years from a p/e ratio of 7.45 for Impala and 11.20 for Anglo Platinum in 2000 to its current levels (2006) of 24 and 41 respectively. This is causing significant concerns that Impala is currently undervalued and exposed to the risk of a hostile takeover. Compounding the problem is the impact this is having on the company's ability to compete against Anglo platinum for scarce investor resources on the capital markets, negatively impacting on its long-term growth strategy (Johnson Matthey report, 2004).

In this project, the researcher explores the tentative hypothesis that investor sentiments, specifically regarding the company's business interests in Zimbabwe, could improve understanding of the phenomenon. The objective being to determine the extent to which investor sentiment plays a role in Impala's valuation problem described above and to provide strategy recommendations to help resolve the problem and advance its long-term growth strategy.

In this study, the researcher will undertake a brief environmental scan of the mining industry focusing on the platinum sector as well as a background review of the industry and a 5-year performance comparison between Impala and Anglo Platinum. It will also review corporate strategy literature as it relates to the research problem as well as theoretical models of investor sentiment and decision-making processes. These models will be tested against the key issues identified in the background study and environmental scan through a questionnaire to help find a robust explanation for the problem.

1.2.1 Main research question

The main research question formulated from the main problem statement as defined above reads as follows:

How does investor sentiment explain the poor valuation of IMPLATS compared to AMPLATS on the JSE Securities Exchange?

1.2.1.1 Sub-questions

- ***Sub-question 1***

Investment management literature documents that the quantity of ore reserves and mineral resources is a critical ingredient investor's use to value mining companies. IMPLATS management recognises its competitive disadvantage with respect to AMPLATS on the quantity of reserves but believe, going by the re-ratings received from the markets, the difference in the quantity of reserves should no longer play a significant role in explaining the huge P/E ratio differential. A key question of this study therefore will be: *What is the importance of the quantity of ore reserves in explaining IMPLATS valuation problem?*

- ***Sub-question 2***

Corporate finance theory posits that a company's value is determined by a combination of fundamental values and investor sentiment, but documents that investor sentiments will almost always prevent the true value of a company from being realised. Theory documents that investors take risks with expectations of returns but that some risks are too high to be taken. Another specific question this study poses is: *How does investor*

sentiment relating to the risks associated with IMPLATS' Zimbabwe investments impact on its valuation?

▪ ***Sub-question 3***

Corporate strategy literature clarifies that every organisation requires a broad plan (strategy) on how to achieve its objectives and offers a myriad of strategic techniques (options, positions, directions, methods) of doing so. A key question of this research will be: ***What strategy considerations should IMPLATS adopt to improve on its value and achieve its 2010 growth objective.***

1.3 Importance of the research

The SA resources industry, largely dependent on foreign investment from inception and hitherto recognize that international investors generally set a criteria of US\$1billion in market capitalization and an inter-day trading liquidity of at least US\$1million (Breakstone and Ruth, 2003) to invest in the sector. With only 15% of the industry being PGMs the sector is almost effectively placed away from the radar screen of large institutional investors and fund managers. As industry returns decline due to the afore mentioned factors, investors are moving the balance of their portfolio holdings into other promising industries. Although IMPLATS has the size and trading liquidity to command investor attention (market capitalization of US\$5.8billion), it is undervalued relative to AMPLATS (market capitalization of \$9.8billion) and this is negatively impacting on its ability to attract limited investor allocations to the sector, severely constraining its ability to raise equity finance to support its 2010 growth strategy. It is imperative that this research provides answers to enable IMPLATS stay on its 2010 strategic trajectory.

1.4 Conclusion

In this chapter, the researcher summarized that the SA and Zimbabwean mining industries have been severely impacted by socio-economic and political changes in recent times, stating that world commodity prices have significantly increased over the last half decade, but that these gains have been largely off-set by a 100% depreciation of the US\$ against the ZAR, severely impacting on earnings in the sector. It went further to reveal

that as investors shun the sector, share prices have tumbled on the JSE with other US\$12billion in market capitalization lost. IMPLATS, world's number two PGMs producer has out-performed the sector and its main competitor – AMPLATS, on improvements in almost all the key operational and financial metrics the two companies report on, but its enterprise value has continued to be underrated relative to AMPLATS', severely weakening its ability to attract its 'fair share' of limited investor allocations to the sector, constraining its future growth strategy. It went further to define the key research objectives and stated the research problem in the context of this background. Key issues that emerged include: Could investor sentiment, provide explanations to IMPLATS' predicament? Could corporate strategy provide the way forward? These are some of the issues that will be discussed in chapter 2 – the Literature Review.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter opens with a brief background review of the SA mining industry focusing on the PGMs sector. It then proceeds to clarify the nature of the research problem, by comparing the performance trends of IMPLATS and AMPLATS from 2000-2005 (5 years). The P/E ratio is then reviewed and presented as the key shareholder valuation metric at the centre of the problem. The chapter then straddles across various management disciplines, strategic management, enterprise risk management, human resources and earnings management, insightfully revealing how these are integrated to generate shareholder value, whilst revealing the salient aspects that may be having a bearing on investor sentiment in the context of IMPLATS. Whilst straddling across these disciplines, the chapter clarifies the concept of country (political) risk and investor sentiment, practically show-casing Zimbabwe, and concomitantly suggesting how it affects the company's involvement in that country. The correlation between investor sentiment (behaviour) and capital asset price dynamics is then explored. The researcher then posits that investment time horizons are far shorter than generally thought, claiming that this has implications for how investors value mining companies concluding with salient aspects that unambiguously inform the line of inquiry in chapter 3 - Research Methodology.

2.2 The South African mining industry

SA is one of the worlds and Africa's most important mining country and boasts the world's largest mineral reserves in the following categories: chrome, gold, vanadium, manganese and PGMs accounting for approximately 8% of the country's GDP and 35% of export earnings (DME, 1998).

Foreign investment into the industry has been slow since the country's first democratic elections in 1994, impacting on the industry, due to a variety of reasons, but principally, investors' perceptions of political risks arising from a bureaucratic regulatory regime (Mboweni, 2001).

In 2000 new era of mineral and mining law in SA, was introduced to inter alia (DME, 2000):

- *Recognise* that mineral resources are the common heritage of all South Africans;
- *Ensure* that a proactive social plan is implemented by all mining companies;
- *Attract* foreign direct investment;
- *Ensure* a vigorous beneficiation drive within the industry;
- *Contribute* to rural development and the support of affected communities;
- *Redress* the results of past racial discrimination and ensure that historically disadvantaged persons participate meaningfully in the industry; and
- *Guarantee* security of tenure to existing prospecting and mining operations.

The PGMs sector, specifically the focus of this study, comprises of platinum, palladium, gold, rhodium, osmium, rhenium, iridium and ruthenium. SA accounts for 50% of the world's platinum and palladium production and holds 55% of global reserves with the sector accounting for 33% of dollar export mining revenue in 2003. The Key sector players include:

2.2.1 Anglo American Platinum

AMPLATS is the world's number 1 producer of PGMs, largely domiciled in SA and listed on the JSE, London's FTSE and NYSE. It is 51% owned by Anglo American, and controls proved and probable ore reserves and mineral resources totalling 6,596.8 (see AMPLATS' annual report, 2005) providing the company with a minimum of 100 years ore reserves.

2.2.2 Impala Platinum

IMPLATS -world's number 2 producer, is largely domiciled in SA and listed primarily on the JSE with a secondary listing on London's FTSE. The company controls proved

and probable ore reserves and mineral resources totalling 3,986.8 (see IMPLATS' annual report, 2005) providing the company with a minimum of 30 years ore reserves (IMPLATS business plan 2005/06), with over 55% of these in Zimbabwe.

2.3 PGMs sector review - strategic drivers

A complex interplay of PESTEL forces, both globally and locally do affect the sector business environment, presenting opportunities and threats to producers. These inter alia, include:

2.3.1 Key sector fundamentals – the opportunities

- **Platinum Price Performance.** According to Baxter (2006), the Platinum dollar price has risen from an average of \$540/oz in 2002 to \$1066/oz in July 2006 – 56% increase. In rand terms however, the price went from R181 683/Kg in 2002 to R175, 688/Kg at present (2006), a decrease of 14%. In general, the commodity price environment has been benign over the years, and the trend is expected to continue into the future. Though driven by a different set of fundamentals, the consensus view is that the commodity price environment remains bullish (Baxter, 2006)
- **PGMs sector returns.** In the global mining industry, the market share and financial returns from platinum is *superior*, second only to iron ore and diamonds, far higher than gold (IMPLATS Board Strategy Pack, 2006).
- **Industry consolidation.** Partly due to the superior financial returns as highlighted above, palladium and platinum (PGMs) remain the top two metals globally in terms of market concentration (IMPLATS Board Strategy Pack, 2006). However, much as the industry dynamics are attractive, these also make significant growth through M&As difficult for PGM producers as anti trust, in the view of this researcher, is likely to prevent further consolidation of the sector.

- **Sector fundamentals – the threats**
- **Supply/demand trends.** Whilst industry experts have differing opinions and concerns about the future supply of platinum, market outlook confirms demand for the metal is expected to continue rising due to inter alia (Johnson Matthey report, 2004):
 - Strong performance from the European auto-catalyst sector;
 - The fitting of catalyst diesel particulate filters will accelerate, and average diesel oxidation catalyst loading will rise further as a greater number of Euro IV-compliant vehicles are produced;
 - Growing number of countries adopting national emission standards legislation, boosting auto catalyst demand;
 - Return to growth in demand for platinum jewellery; and
 - In substantial parts of China, the market remains largely untapped.
- **Exchange rates.** Commodity prices have an inverse relationship with the exchange value of the US\$ (natural hedge) and hence for the every gain in the ZAR, PGM prices need to rise almost commensurately to support the industry. For instance as Hochereiter (cited in Botha, 2004) put it:

Should the rand strengthen to ZAR2:\$, platinum must go up to \$3600/oz for the PGMs basket to remain at R140, 000/kg. Conversely, if the rand should weaken to ZAR12:\$, platinum must fall to \$300/oz to maintain the R140, 000/kg PGMs price basket.

The ongoing strength of the ZAR against the US\$ remains a major source of concern for the industry as this has already to a large extent, offset some of the gains made from the benign commodity price environment and many economists and industry experts now anticipate the ZAR will be stronger for longer (United Nations, 1994).

- **Shareholder returns.** The above concerns have started to impact on returns over the last year relative to the broader resources industry, even though IMPLATS has performed well relative to its peer group.
- **Sustainability of earnings.** Industry experts and the markets certainly anticipate a substantial fall in earnings across the sector. In terms of these forecasts, and due to the above threats, the markets now expect AMPLATS to experience the biggest drop in EPS of 21%, followed by IMPLATS (12%) and Lonmin (8%), which would cause investors to switch the balance of their portfolio holdings into better performing industries. This is evidenced by the generally declining performance trends of IMPLATS and AMPLATS, though IMPLATS fares better over the last five years (2.5 overleaf). Why these forecasts do not translate into a lower enterprise value for AMPLATS relative to IMPLATS remains intriguing!

2.4 IMPLATS' valuation problem : A comparative review of key performance trends

Table 1 : 5-Year Financial and Operating Review: IMPLATS (IMP) vs. AMPLATS (AMP)

Historical Stats / Ratios	Avg/Growth	2004	2003	2002	2001	2000
Market Cap (Rmb), IMP	21.6%	31 379	29 700	38 056	26 745	16 670
AMP	-9.9%	45 002	62 789	67 908	95 660	76 384
Working Profit (ZARm), IMP	19.3%	4 260	5 284	6 137	6 849	3 103
AMP	-8.4%	4 627	3 910	9 423	9 616	8 861
Ad. Inc (ZARm), IMP	17.2%	2 963	3 415	4 582	4 767	2 255
AMP	-13.8%	2 525	2 092	5 740	8 020	6 918
Ords in issue (000s),	0.2%	66 621	66 592	66 554	66 300	66 100

¹ Though AMPLATS has a bigger market capitalisation, the growth rate of IMPLATS' is increasing whilst AMPLATS' is declining. Investors use size and liquidity as one of several criteria to invest in a company (Breakstone&Ruth,2003).

IMP

AMP	0.0%	217 400	215 400	214 900	214 100	217 000
EPS (ZARc), IMP ²	16.9%	4 450.29	5 130.71	6 902.24	7 205.71	3 422.01
AMP	-15.8%	1 095.50	972.52	2 675.99	3 695.76	3 198.34
HEPS (ZARc), IMP	16.7%	3 966.00	5 140.00	6 877.00	7 635.00	3 394.00
AMP	-14.3%	1 138.20	972.50	2 624.90	3 690.40	3 141.60
Share price at period end, IMP		47 100	44 600	57 180	40 360	25 220
AMP		20 700	73 484	90 877	96 207	51 640
P/E at yr end, IMP	17.4%	11.88	8.68	8.31	5.28	7.45
AMP	29.3%	18.19	29.97	12.04	12.09	11.20
DPS (ZARc), IMP	47.9%	2 100.00	2 650.00	3 700.00	6 800.00	1 760.00
AMP	-17.7%	735.00	640.00	1 800.00	2 700.00	2 410.00
Cash Gen PS, IMP	5.9%	2 720.76	3 740.84	8 439.73	10 008.60	4 502.87
AMP ³	27.7%	2 204.46	746.05	2 921.31	4 656.66	3 661.61
NAV PS (ZARc), IMP	17.8%	16 038.14	14832.7	13 949.52	10 129.11	8 510.74
AMP			1			
AMP	12.6%	8 267.07	5 767.27	6 134.99	5 848.48	5 398.20
Beta (rolling 2yrs), IMP	42.6%	1.93	2.17	1.83	0.75	0.63
AMP ⁴	51.2%	1.76	2.10	1.93	1.40	0.51

² Graham *et al.* (2004) found that majority of firms view earnings, especially EPS as the key metric for investors more than cash flows (See earnings management (2.7.5, p.43) in this report).

³ AMPLATS' superior performance over IMPLATS is only explained by its 2004 accounts. For the first four years, the average **growth** for IMPLATS is 16.9% whilst AMPLATS' has **declined** by 28%. In 2004, only 30% of the superiority is explained by 'real' growth in this ratio, the other 80% is explained by a much lower tax paid by AMPLATS and a higher interest expense paid by IMPLATS.

⁴ Looking at average growth, IMPLATS' share is less volatile than AMPLATS'. However, in the last two years, IMPLATS has been more risky in absolute terms. Investor sentiments and AMPLATS' 50% holding by Anglo America appear to be contributing to this.

Cost of sales per Pl. (oz. IMP)	11.2%	4 132	3 970	3 680	3 156	2 711
AMP	13.76%	5 958	5 313	4 502	3 999	3 561
Capital Expenditure (IMP)	42.9%	1 822	1 787	1 250	2 090	783
AMP	33.75%	4 260.3	7 423.6	5 994.1	3 586.1	1 919.7
Price Received (Per oz.) (IMP)	18%	773	597	485	586	428
AMP	12.3%	842.00	696.00	544.00	526.00	544.00
Output (oz.) (IMP)	18.42%	3 725	3162	2 639	2 464	1 913
AMP	8%	4 426.4	4 161.5	3 947.6	3 773.6	3 255.4
Mineral reserves*, (IMP)		3 986.8				
AMP ⁵		6 596.8				
Ret on SH Invst. (IMP)	-10.5%	27.56	33.39	49.13	82.60	55.80
AMP	-25.4%	14.05	16.84	43.54	64.05	59.06
Ret on Tot. Ass. (IMP)	-13.5%	25.19	38.35	50.14	71.00	53.30
AMP	-12.9%	11.75	12.37	42.46	61.28	39.52
Oper. PB Mgn. (IMP)	-3.3%	36.07	44.75	51.56	57.22	44.30
AMP	-16.7%	24.02	24.28	48.19	53.78	57.03
Profitability% (IMP)	-2.4%	22.64	28.46	35.43	50.20	31.35
AMP	-25.1%	11.58	12.17	39.61	59.23	55.38

IMPLATS generally outperforms AMPLATS on absolute values and average growth rates over the last five years, on these ratios

AMPLATS generally outperforms IMPLATS on absolute values and average growth rates over the last five years on these ratios **but see footnotes.**

The research problem: Despite the above and footnotes, AMPLATS outperforms IMPLATS on a key investor valuation metric, the p/e ratio

Table 1 continues

Historical Stats / Ratios	Avg/Growth	2004	2003	2002	2001	2000
CashFl:AttPrft, IMP	-12.8%	0.67	0.67	1.26	1.44	1.33
AMP ⁶	28.3%	1.90	0.77	1.09	1.24	1.15
D:B, IMP	17.5%	0.08	0.05	0.03	0.05	0.06
AMP	251.3%	0.38	0.69	0.06	0.06	0.06
Op. Prft Margin, IMP	-3.3%	36.07	44.75	51.56	57.22	44.30
AMP	-16.7%	24.02	24.28	48.19	53.78	57.03
Profitability%, IMP	-2.4%	22.64	28.46	35.43	50.20	31.35
AMP	-25.1%	11.58	12.17	39.61	59.23	55.38
Solvency%, IMP	0.2%	273.70	272.38	272.21	228.02	282.20
AMP	-5.1%	223.33	180.84	264.27	256.39	302.36
Liquidity%, IMP	-19.2%	29.12	41.71	103.50	126.13	96.16
AMP ⁷	20.3%	32.89	10.46	78.22	124.52	137.26
IndDebt:TotAss, IMP	25.0%	0.03	0.02	0.01	0.01	0.02
AMP	-40.7%	0.16	0.27	-	-	-
Current Ratio, IMP	-12.1%	1.27	1.30	1.46	1.36	2.37
AMP ⁸	-11.4%	0.96	0.54	1.50	1.91	3.07
ROCE, IMP	-1.3%	22.32	27.49	41.63	58.20	33.03
AMP	-26.4%	10.26	11.63	32.12	50.80	47.58
Interest Cover, IMP	38.8%	13.30	-15.05	-20.21	-16.11	-12.09
AMP	83.4%	20.03	14.28	-53.96	-	-
Dividend Cover, IMP	11.0%	2.12	1.94	1.87	1.06	1.94
AMP	3.9%	1.49	1.52	1.49	1.70	1.33
Net Pft Margin, IMP	-4.4%	25.09	28.92	38.50	39.83	32.20
AMP	-22.2%	13.10	12.99	29.36	44.86	44.53

Source: Adapted from www.resultsdata.co.za. Viewed 05/08/2006. Site Last

Updated: 3 March 2005

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IMPLATS generally outperforms AMPLATS on absolute values and average growth rates over the last five years, on these ratios

AMPLATS generally outperforms IMPLATS on absolute values and average growth rates over the last five years on these ratios **but see footnotes.**

The research problem: Despite the above and footnotes, AMPLATS outperforms IMPLATS on a key investor valuation metric, the p/e ratio

2.5 P/E ratio: A key company valuation metric

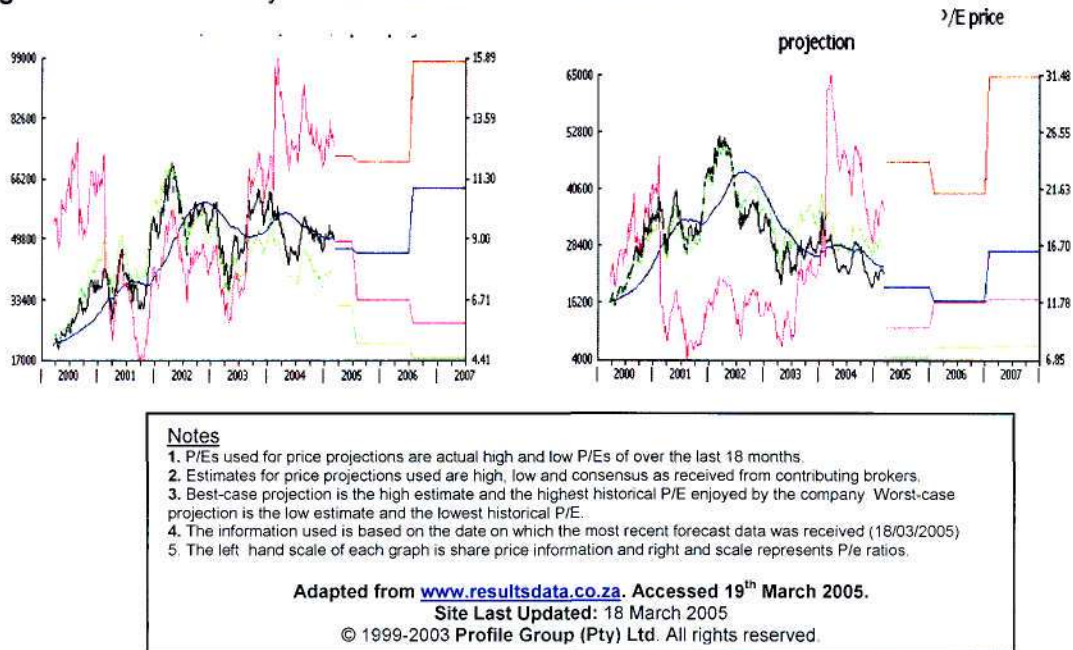
The P/E ratio is the single most important multiple for investors and a measure of the markets confidence in a particular company's ability to deliver future earnings (Arnold, 2002; Schindler, 2003). It is computed as:

Market value per share

Earnings per share (EPS)

A P/E of ZAR18.19 like in the case of AMPLATS (2004) means the company has ZAR1 of EPS for every ZAR18.19 in share price. Stated differently, at AMPLATS closing price of ZAR20,700 investors are willing to pay ZAR18.19 for every ZAR1 of 2004 earnings. In general, when the P/E ratio is higher (e.g. AMPLATS') than that for a comparable company (IMPLATS'), ceteris paribus, AMPLATS is said to be highly valued (future earnings is highly valued) compared to IMPLATS'. The forecasts below illustrates the IMPLATS problem even further:

Figure 1: P/e ratio history and forecast for IMPLATS and AMPLATS



Price History

- Closing Price
- P/E of share
- Moving Average
- Sector Index

Price Forecast

- Best case projection (high P/E, high estimate)
- Worst case projection (low P/E, low estimate)

The graphs reveal that though both IMPLATS and AMPLATS have out-performed the sector P/E index, AMPLATS has outperformed IMPLATS over the last five years. Furthermore, all estimates (best case, worse case and consensus) show AMPLATS will continue to outperform IMPLATS way into 2007, *posing a major snag for IMPLATS on competing for limited equity finance available for the PGMs sector.*

Although the P/E ratio has served as the key metric investors use to value companies, some researchers have suggested the ratio should be interpreted with care as it could be sometimes misleading, for instance Arnold, James (2003) and Schindler suggest a firm with no EPS could have a very high P/E ratio. Some researchers argue that as the P/E ratio determines expectations of future earnings, using only one years' EPS to determine P/E ratio could also be misleading and have suggested the price-earnings to earnings growth (PEG) ratio (Schindler) to better reflect the view that only by taking a number of growth years in the past, will the ratio better reflect expectations of the future. Using the last five years data, the PEG ratio for AMPLATS is 0.25 whereas that of IMPLATS is

0.02 thus still confirming that IMPLATS' future earnings is valued lower than AMPLATS', despite its comparatively better fundamentals. Pike and Neale (2003) however suggest using any of these ratios to detect company under-or-over valuation, implies that markets are slow or inefficient processors of information, thus contradicting the untenable efficient market hypothesis (Arnold; Brennan *et al.*, 1985). The IMPLATS conundrum, far from being a paradox, reflects the underlying theory that the market value of an enterprise is not only driven by *fundamental values*, but *also investor sentiment* about the future earnings a company is expected to deliver to its shareholders (Fama, 1970; Frost and O' Connel, 2003; Graham *et al.*, 2004).

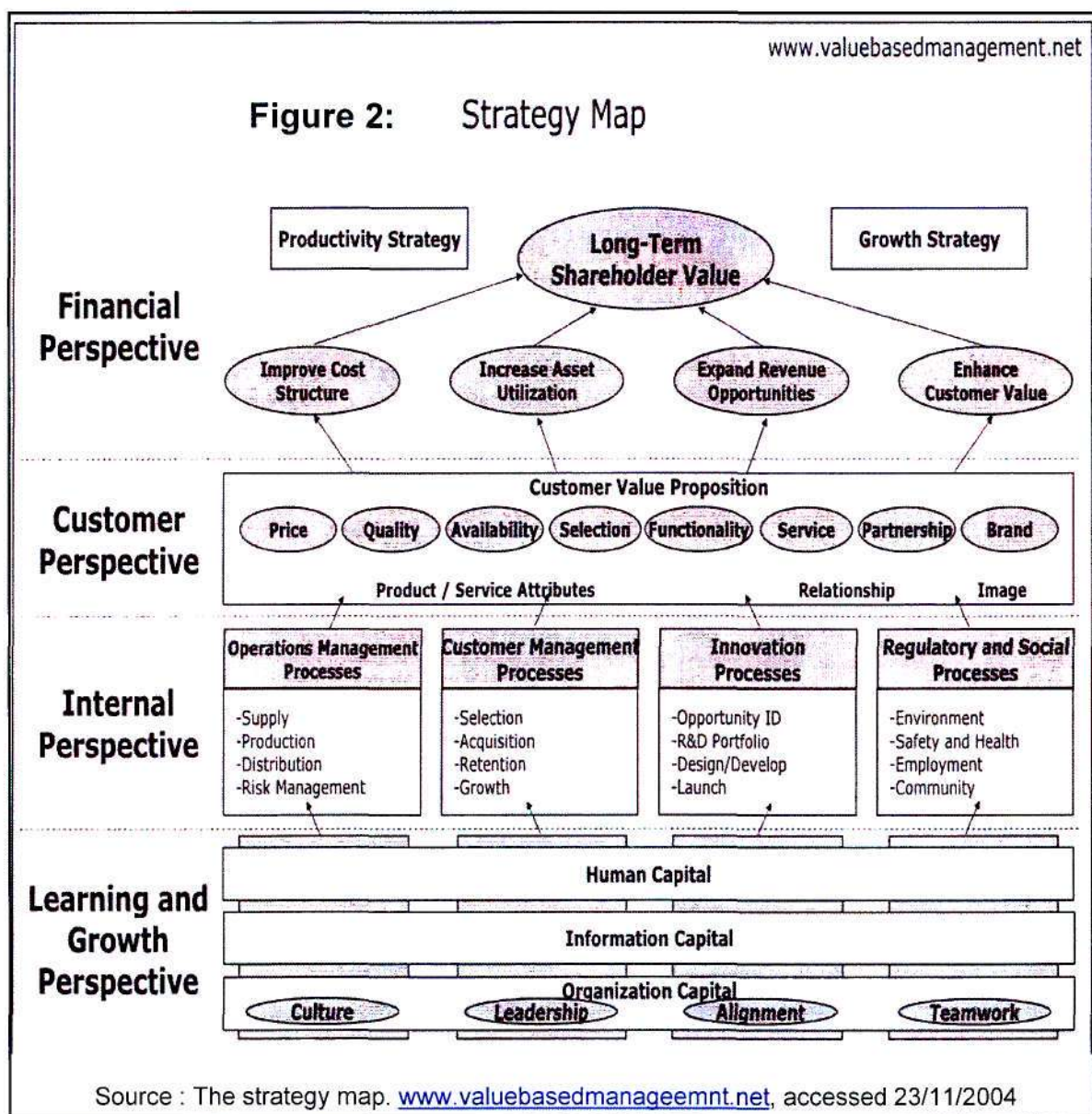
Jenson and Mecling (1976) suggests research findings reveal corporate executives tend to act rationally and will perceive share mis pricings and make modifying decisions that could improve short-run prices but lower long-run value. Baker *et al.* (2004) advance that corporate executives will do this by always attempting to balance three objectives:

- *fundamental value* – quest for superior risk-adjusted ROI, EPS and present value of future cash flows;
- *Catering* – packaging the firm and its shares in a way that maximizes investor appeal e.g. changing corporate name, earnings management, initiating a dividend etc.; and
- *Market timing* – financing decisions intended to capitalize on temporary mis pricings, generally via the issuance of overvalued shares and repurchase of under valued ones.

It becomes important therefore to review literature in relation to how fundamental values and investor sentiment (catering and market timing) combine to determine company values (p/e multiples), *the central principle being IMPLATS' strategic challenge is how to ensure the market value of its shares improves more than proportionately to its EPS such that its p/e ratio) grows significantly to outperform AMPLATS'.*

2.6 Fundamental values : A basis for company valuation

Management literature documents that delivering on shareholder value requires a skilful *integration of an array of disciplines and capabilities*. Norton and Kaplan (1996) suggest the balanced scorecard-strategy map framework as a framework to avoid the over dependence on financial metrics to measure performance, by obtaining a balanced set of strategic objectives, with cause-effect linkages between the various perspectives – financial, customer, internal and learning and growth that enables a firm deliver on its ultimate financial objective –shareholder value. This is shown below:



As IMPLATS uses the balanced scorecard to manage strategy, whilst excluding the specific metrics from the discourse, this researcher will use the same methodology to illustrate how various management disciplines and capabilities are integrated within IMPLATS to deliver on its superior fundamental values, whilst insightfully revealing the key issues that pose investor concerns.

2.6.1 Financial perspective

2.6.1.1 Corporate finance

The classical *corporate finance* literature suggests an organisation can finance its growth objective by raising equity and/or debt finance, each approach offering a number of constraints and opportunity that has remained a contentious area of academic debate - where the optimal capital structure lies (Modigliani and Miller, 1958; Ward, 1996). In the mining industry, debt-to-equity ratios have traditionally been below 30% (PwC, 2004) suggesting a preference for equity to debt finance due to long industry lead times and the resulting higher risk of financial distress. Here in lies the crux of IMPLATS problem. To finance its future growth, it has decided it needs to raise US\$12billion over the next three years (IMPLATS business plan, 2005/06) and it has to compete with AMPLATS for limited investor allocations to the PGMs sector on the JSE. Research shows investors set a minimum of US\$1billion and an intra-day trading liquidity of US\$1 million (Breakstone & Ruth, 2003). Although IMPLATS has the size and trading liquidity to command investor attention, its lower P/E ratio is impacting negatively on its ability to attract limited investor allocations to the sector, giving AMPLATS the competitive advantage over IMPLATS on attracting investors' finance.

2.6.2 Customer (and stakeholder) perspective

To its customers, IMPLATS is seeking to be a reliable supplier of preferred quality products, produced according to specification and on time (IMPLATS business plan, 2005/06) whilst being honest and fair with its employees, responsible to its communities and ethical in its dealings with its business partners – good corporate citizenship (IOD, 2002). Achieving this requires the following capabilities:

Strategic management. Johnson & Scholes (2000) and Porter (1985) describe strategic management as the setting of organizational mission, vision and strategic goals including the method for accomplishing these. *Ibid*, they document that an organization seeks to secure and sustain competitive advantage via environmental-based or resource-based capabilities or a combination of both, offering also mechanisms to deliver on shareholder value such as VBM and EVA. In the SA mining industry, the traditional strategic clock (Bowman, 1985) offering a continuum of strategic competitive positions appears to have very limited applicability.⁹ Cost leadership (Porter, 1985) and mine-to-market time (speed) (Nigel *et al.*, 2002) therefore appear to be the only basis for a sustainable competitive positioning in the industry. On cost, IMPLATS is the world's lowest cost (and highest margin) mining producer substantially outperforming its rival - AMPLATS.

Investors however, are seriously questioning IMPLATS' ability to sustain its cost leadership position due to the increasing cost of royalties paid to the Royal Bafokeng nation, for mining rights in the Impala area as these costs are not borne by its competitors. Furthermore, as the debate on the value adding role of the corporate centre (Chandler, 1962; 1991) has intensified in academic circles, investors have increasingly questioned the role of large corporate offices to delivering value in the resources industry (Breakstone & Ruth, 2003). Teece *et al.* (1994) and Williamson (1975) posit that corporate value addition emanates from the provision of financial, transactional, administrative and operational assistance to SBUs (Goold *et al.*, 1994) as well as from the facilitation of the sharing of knowledge and other intangible assets amongst portfolio units (Ito and Rose, 1994). Markides (1995) points that such *value addition is recognized by the market by awarding the firm a market value higher than its book value*. Ito and Rose (1994) however argue that with growing decentralization and autonomy of SBUs and subsidiaries, the potential for appropriating any one or more of these value adding opportunities may become limited, *resulting in a down-rating of a company's share price*, thus indicating the *need for corporate restructuring or more specifically, corporate refocusing* (Ferreira, 1997). As Rappaport (1986) points out, given market pressures for shareholder value maximization and efficient internal and external monitoring mechanisms, *it would therefore be reasonable to expect a competent corporate centre to*

assess, on a continuous basis, its contribution to shareholder wealth. With increasing strain on the company headlines following the rapidly appreciating ZAR against the US\$ and the less than proportionate improvement in commodity prices, it would appear simplification and re-structuring of corporate offices needs to become an integral part of IMPLATS' cost management strategy.

Corporate strategy literature (Johnson and Scholes, 2002; Porter, 1985) offers a variety of strategic growth approaches available to a corporate entity, ranging from:

Strategic development directions:

- Protect and Build (consolidation and market penetration);
- Product development;
- Market development;
- Diversification; and

Strategic development methods, including:

- Internal development;
- Mergers and acquisitions; and
- Joint developments and strategic alliances.

IMPLATS has consistently followed the above strategic growth directions and methods as follows:

- *Protect and Build*, the company continues to sign long-term supply contracts with key overseas customers, capitalizing on growing legislative standards that promote the use of auto catalytic diesel cars;
- *Product development* –the company continues to invest in other related products such as nickel to fully exploit its spare refining capacity and bring variety to its customers;
- *Market development*, the company has its focus on the expanding Chinese market; and

- *Diversification* – This is arguably the most hotly debated area of strategic management. Ramanujam and Varadarajan (1989) defined it as the entry of a firm or business unit into new lines of activity, either by processes of internal business development or acquisition, with changes in its administrative structure, systems and other management processes. There is broad consensus amongst strategy researchers that diversification should be resourced-based (Chandler, 1991; Chatterjee and Wernerfelt, 1991). Hill (1994) suggests diversification *should be in relation to the existing business as it entails the transfer of firm-specific core capabilities to new areas of business whilst Teece et al. (1994) found empirical evidence to support this. Teece (1982) furthermore, posits that the resource-based view of diversification rests on the economies of scope or synergy and building on this, Teece et al. argue that the degree of relatedness ('coherence') determines the success of diversification. These matters have been a continuing issue in IMPLATS' strategic conversations.*

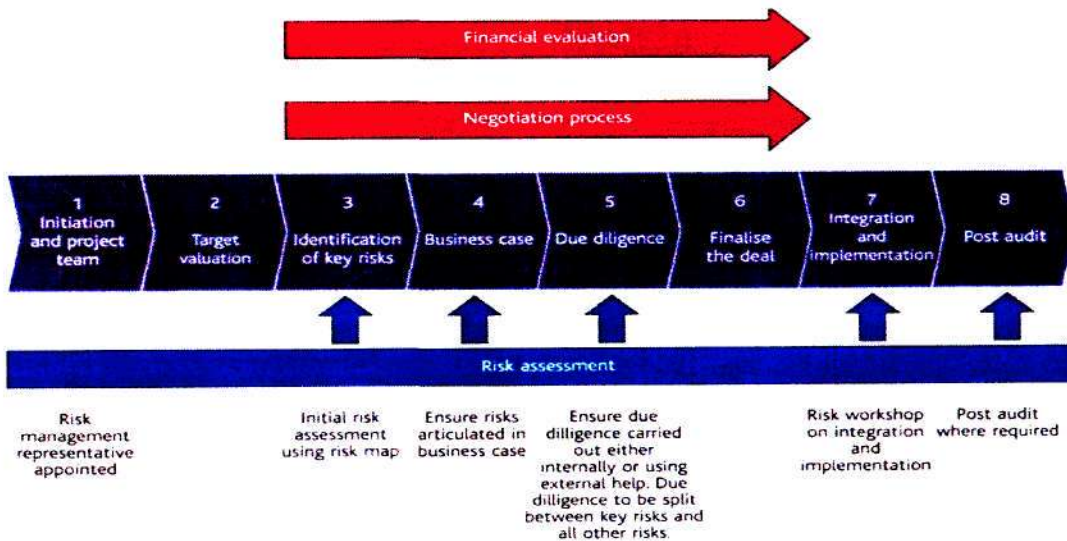
The above nonetheless, the unresolved question in diversification literature, clearly with implications for IMPLATS, is whether it enhances firm performance. Jose *et al.* (1986); Palepu (1985) and Rumelt (1974) found that related diversification is associated with better firm performance than with unrelated diversification, though Rumelt (1982) latter found the higher performance was due to industry factors. Other researchers have shown the reverse (Michel and Shaked, 1984) and yet others have argued that there is no relationship between diversification and performance (Hill *et al.*, 1992; Montgomery, 1985) whilst others have shown the relationship is curvilinear. Chatterjee and Wenerfelt (1991) posit that a more or less related move can lead to value creation contingent on the resource profile of the firm. *This supports the resource-based related diversification argument termed 'pure play' or 'sticking to the knitting' (Peters and Waterman, 1994). It is argued (Chatterjee and Wenerfelt, 1991) that this has the greatest potential to capture the complexities of the relationship between diversification and performance, subject to the particular characteristics of the firms involved (Ferreira, 1997). Anecdotal evidence suggests investors love 'pure plays' but also that depending on holding style, will prefer divesifieds due to the potential to balance their portfolio risks. IMPLATS has been a pure*

play (sticking to the knitting) until hitherto, and needs to consider its way forward. The difficulty however lies in identifying 'what knitting to stick to' (Teece et al., 1994) or what 'stick to the knitting' implies (Goold and Luchs, 1994).

- *Internal development* –the company has continued to explore ways of sustaining its low cost competitive advantage;

- *Mergers & Acquisitions* – IMPLATS' corporate investment activities appear to have been successful but posing some of the major problems it faces to today. In 2001, it *acquired ZIMPLATS* and became the biggest PGMs investor in Zimbabwe. Empirical evidence to support this method of strategy development is worrisome. A KPMG survey of acquisitions in 2001 revealed only 30% of acquisition deals added value, 39% produced no difference and 31% destroyed value. Lack of strategic fit between the acquirer and acquired and lack of effective project management have often been cited as the prime reasons (IFAC, 2003). IFAC suggests M&As are notoriously risky and often fail to deliver the envisaged benefits as these are often driven by empire building emotions (Amihud and Lev, 1981; Jensen and Mecling, 1976) and enthusiasm rather than fact and logic, and are frequently managed poorly. *Ibid.* it is suggested that often, acquisitions are entered into in order to achieve strategic objectives when other means have failed and in these circumstances, the acquisition is often a desperate measure to achieve success and rarely succeeds. This is also supported by Jensen (2004) who argues that divergence between a firms market value and its value perceived by its managers can lead them to make poor acquisitions in an attempt to improve on firm value. IFAC offers a framework to resolve the problem suggesting an effective risk management process needs to be integrated into any M&A process to enhance its chances of success, as below:

Figure 3: The M&As process



Source: IFAC;2003 –Enterprise Governance : Getting the Balance Right

It is obvious from the above that the strategic choices and growth paths adopted by IMPLATS in the past five years have brought increased opportunity as well as threats to the business, requiring a robust ERM process (COSO II) integrated into its future growth strategy:

Enterprise risk management. COSO II defines ERM as a process, effected by an entity’s board of directors, management, and other personnel, that is applied in a strategy setting and across the enterprise, stating that its goal is to provide reasonable assurance regarding the achievement of organizational objectives by identifying events that may affect the entity and managing risks to be within the entity’s risk appetite. ERM encourages a strategic portfolio approach to the management of upside (potential for gain) and downside risks (potential for losses) (Coyle, 2002) through a focus on the interrelationships and interdependencies between risks and the explicit consideration of risk in the formulation of strategy. IFAC (2003, p.7) goes further by positing that the concept of ERM attempts to reconcile:

- The assurance requirements of the board and external stakeholders i.e. that the business understands its risks and is managing them actively – conformance and;

- The need to better integrate risk management in decision-making activity at all levels – performance.

The importance of effective ERM is rooted in the very real possibility that lack of the same will have a negative impact on shareholder value. The ERM major challenge however, is the fact that risk assessment is rooted in subjectivity. Slovic, Fischhof and Lichtenstein (cited in Coyle, 2002) postulate the following two aspects of risks that affect human perceptions that trigger subjectivity:

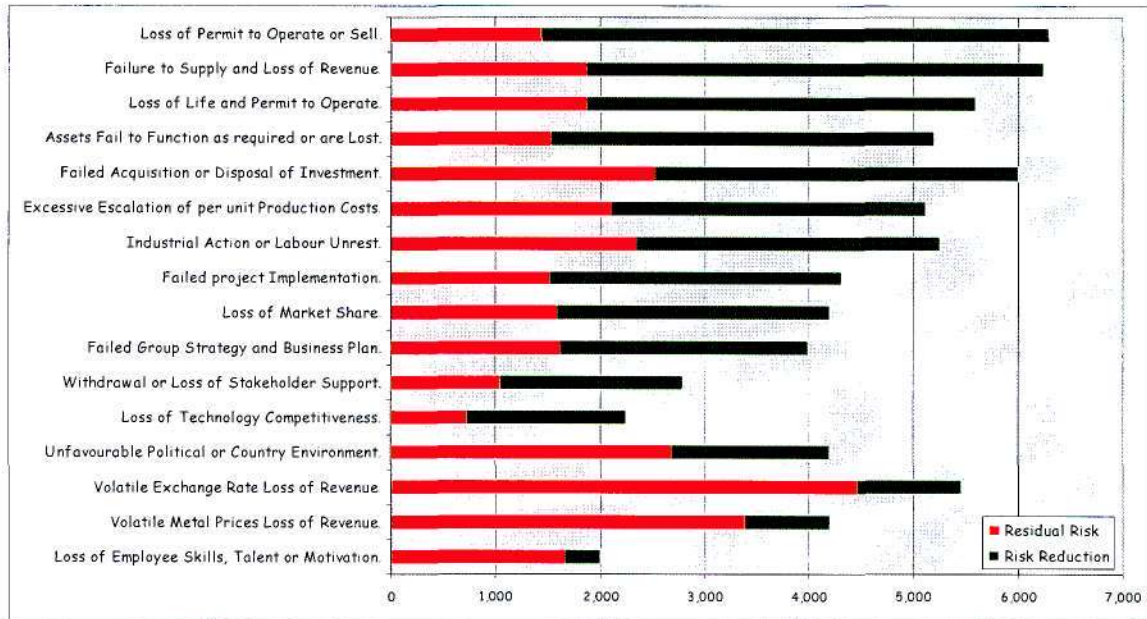
- The fear factor, i.e. how we must dread the potential outcome if the ‘worse’ actually happens; and
- The control factor, i.e. the extent to which we are in control of events, and can take action to deal with the risk when it materializes.

Coyle complements that our attitudes to risk is affected by our individual personality and inborn dispositions, feelings, biases and characteristics, arguing that risk management decisions are therefore often based on consensus view (or agreed policy) of what should be done about risk whilst conceding that individual managers will inevitably have different personal views about what should be done in different situations. *It is stated, ibid, that investors look at risk in terms of the trade-off with expected returns and that a high-yield investment is one in which the expected returns are high to compensate for a greater volatility in earnings.* Although Coyle suggests risks represent a value proposition to investors, he admits that effective monitoring and control systems need to be implemented. In practice, an effective risk management strategy is designed around the 4T’s framework:

- Treat (risk retention and mitigation);
- Tolerate (risk acceptance –should be within the explicitly defined risk appetite/tolerance of the board management (IOD, 2002);
- Transfer (risk sharing e.g. insurance); and
- Terminate (risk avoidance).

Coyle argues that after explicitly applying the risk management strategy, the company will be left with a residual risk, representing the total of strategic, operational, financial and compliance risks to which it is exposed, arguing that it is this portfolio of risks that the company presents to its investors as its value proposition as graphed below:

Figure 4: IMPLATS' risk profile



Source : IMPLATS' Risk Committee Report, 02/2005

Coyle (2002) states further that, 'the value of the company's shares will be determined by the returns that management is able to provide, relative to the risks'. This is supported by Ernst and Young (2001, p.1) arguing that 'there can be no doubt that a company's ability to manage risk affects its share price.' In the SA mining industry, anecdotal evidence suggests market risks such as interest rate, commodity price and foreign currency risk appear to be the dominant industry concerns as seen by the ever increasing sophistication of hedging practices in published annual reports (see annual reports of listed mining companies) and by IMPLATS' risk profile above. With declining PGMs sector returns relative to other industries, **equity risk** occasioned by possible investors' perceptions about country (political) risks associated with IMPLATS' Zimbabwe investments has however, become a major source of concern for IMPLATS' management and board. This is because political risk, whilst being only the third highest residual risk in IMPLATS,

from an ERM portfolio perspective, can trigger knock-on-effects on other strategic risks to which it is interrelated, such as:

- loss of permit to operate and sell;
- failure to supply and revenue loss; and
- excessive escalation of per unit production costs, which will only affect fundamental values and escalate equity risk even further.

The key question then is what constitutes country risk? Boczko (2005) suggests given its complexity, country risk is defined using a wide range of political, economic and socio-cultural criteria, suggesting *ibid* that broadly, it is the exposure that a company faces as a consequence of change in a national government's policy and the effect this change could have on the value chain of an investment, a project or cash receipts. He suggests *ibid* that country (political) risk could arise from a government expropriating assets/or profits, imposing discriminatory pricing intervention policies, tax laws, and/or social/work conditions, and enforcing restrictive foreign exchange controls. Rugman and Hodgetts (2003) define country (political) risk specifically as the probability that political forces will negatively affect an MNE's profit or impede the attainment of critical business objectives, suggesting *ibid*, that these can be at the macro or micro levels.

▪ **Zimbabwe : A country (political) risk review**

Zimbabwe is home to the world's second largest reserves of PGMs, after SA and IMPLATS remains the biggest platinum mining investor in that country, via its 84% shareholding of ZIMPLATS (IMPLATS Board pack, 2005/06). Runaway inflation and a near collapse of the financial system have eroded the country's foreign currency reserves and the central bank has resorted to imposing requirements to international companies. According to Reuters of 29/02/2004, the central bank announced:

All offshore accounts for Zimbabwean-based platinum will cease to operate and all exchange controls dispensations or government approvals allowing for the creation and holding of these accounts are hereby rescinded. **(Gideon Gono, Zimbabwe central bank governor).**

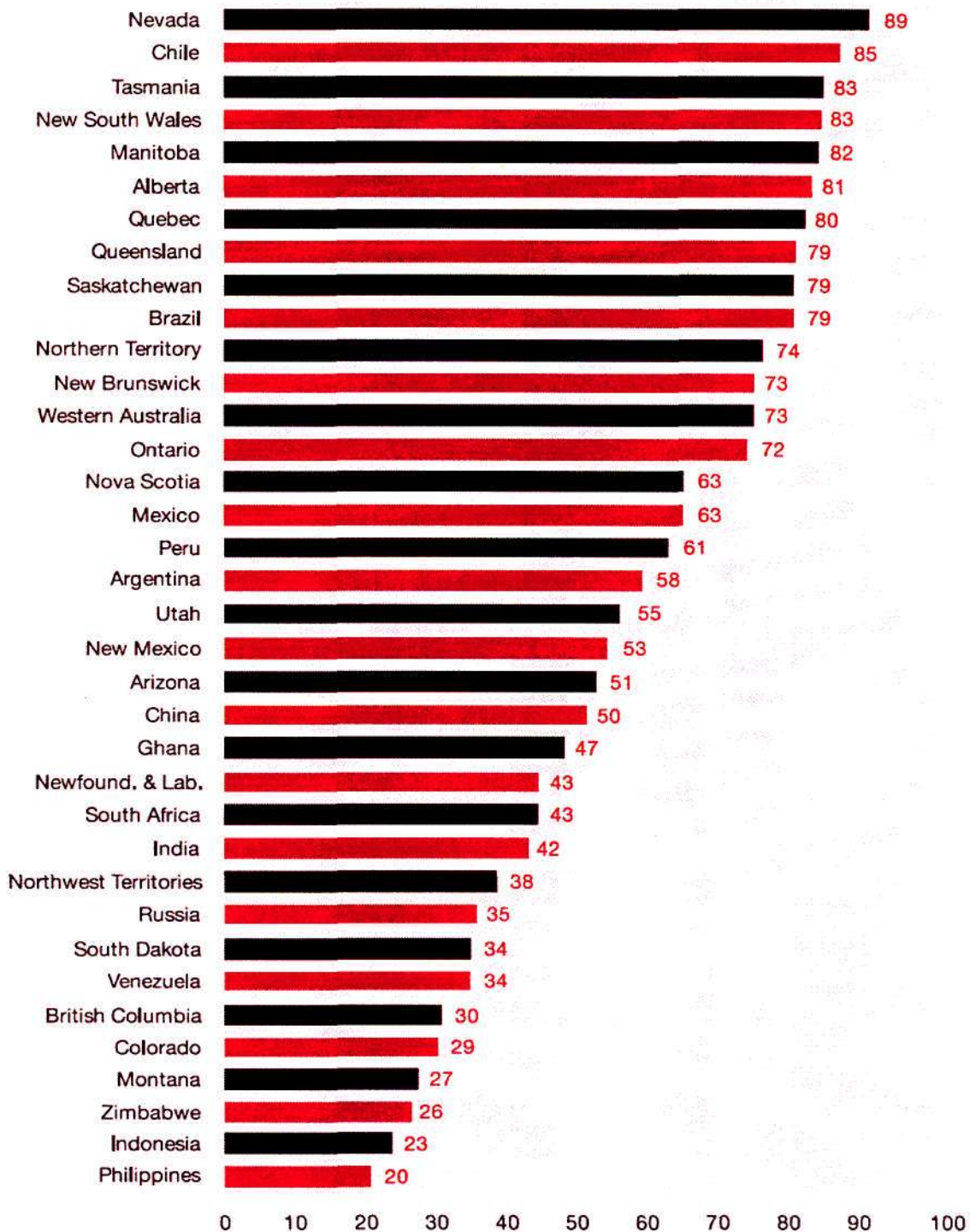
The country is led by President Robert Mugabe and the ruling ZANU-PF party, with the main opposition party – MDC led by Morgan Tsvangirai. Mugabe has been repeatedly accused of rigging previous elections and stifling democracy and of sponsoring the war veterans' land grab programme in which 'indigenous' Zimbabweans have seized land from white farmers, converting a country from once the bread basket of Southern Africa to abject poverty. Presidential elections are due in 2009. Although it is widely believed past elections have not been free and fair, *the South African government has repeatedly announced that these have been and that future elections will also be, thus improving political stability in that country, but this has remained the source of enormous frustrations amongst the Zimbabwean opposition camp* (Africa Confidential, 2005). In 2004, a draft mining amendment bill was circulated requiring 49% BEE ownership, stunning the industry and foreign investors as it was quickly withdrawn by the government. Although the new Minister of Mines has invited submissions from the industry, which should lead to a negotiated charter, the lack of clarity pertaining to the Zimbabwean empowerment needs is certainly delaying expansion plans by international players in the industry, and scaring-off investors (IMPLATS' Strategic business plan, 2005/06). On Wednesday, March 02, 2005, the Mail and Guardian online ran a headline story: *Zimbabwe strangles platinum mines*: and continued,

Zimbabwe's prospects of attracting new mining investment inflows have been dealt a crippling blow by the government's decision to sweep aside international agreements that permitted a major platinum producer [referring to IMPLATS] to use its current export earnings to help fund its continuing capital investments.....On February 28, platinum producers lost their rights to hold the proceeds of their mining activities in Zimbabwe offshore bank accounts.

The Fraser Institute (2003; 2004) Policy Index ranked Zimbabwe amongst 35 countries, the 3rd least attractive surpassed only by Philippines and Indonesia, and the worse on political stability as shown below:

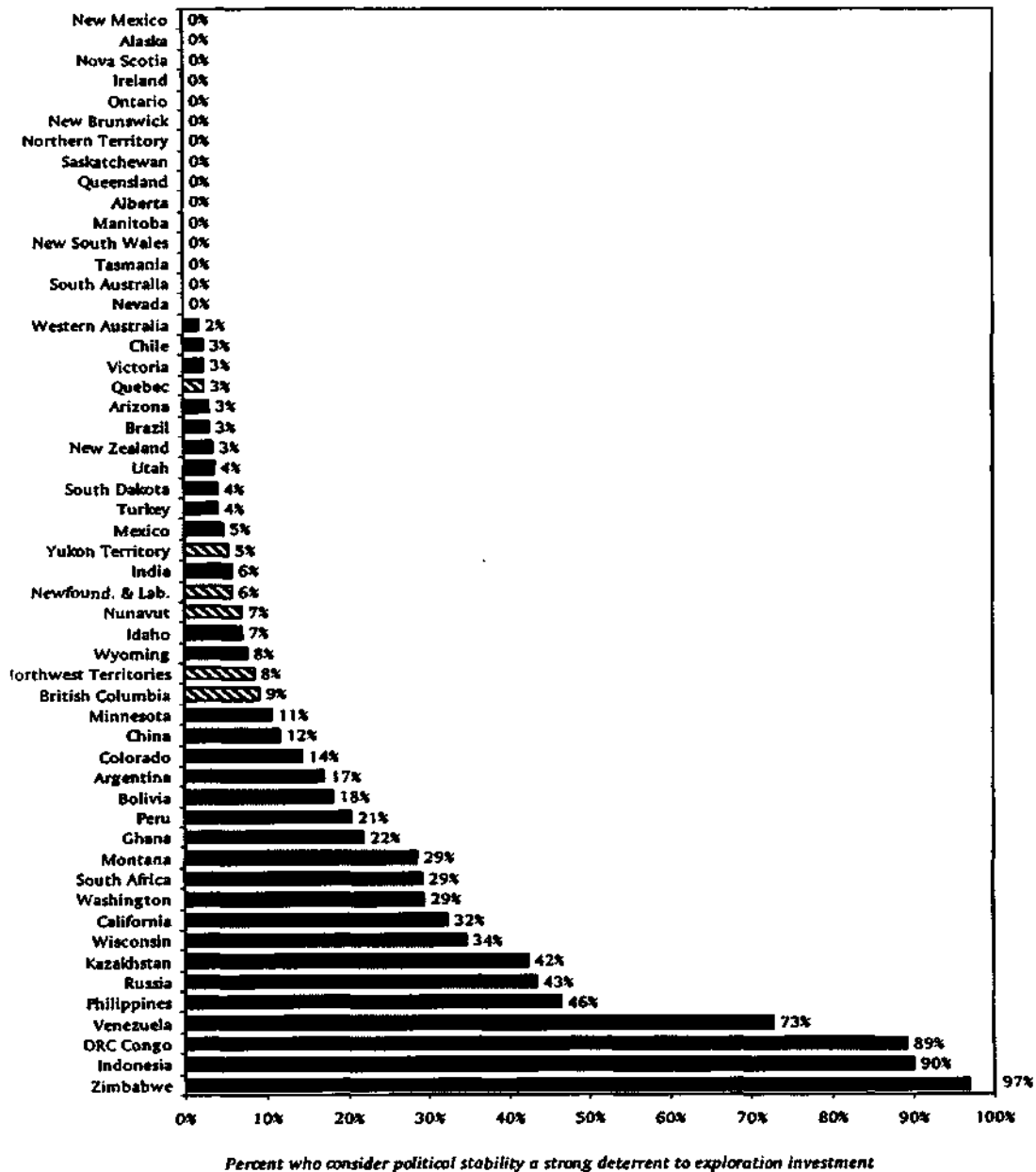
Excerpt from the Policy Potential Index

Figure 5: (Mining) Policy Potential Index



Source: Fraser Institute, 2003: Reprinted in 'mine*' review of global trends in the mining industry, PriceWaterhouseCoopers; May, 2004

Figure 6 : Political Stability

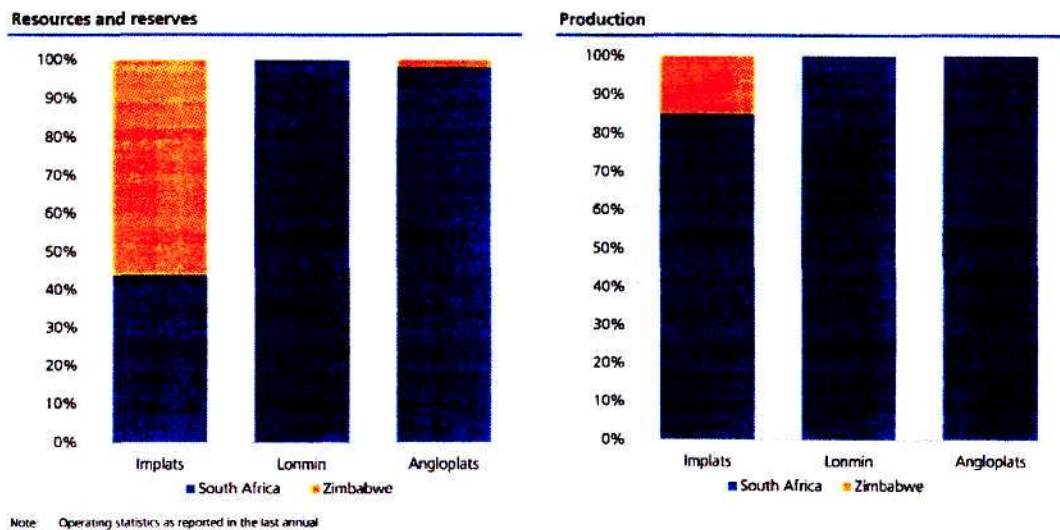


Source: The Fraser Institute, 2004

▪ **Zimbabwe and IMPLATS investments : The facts**

Statistics show less than 15% of IMPLATS' production is sourced from Zimbabwe but that the country holds over 55% of its ore reserves and mineral reserves whilst over 99% of AMPLATS' production is sourced from SA which hold's over 98% of its resources, as graphed below:

Figure 7: Geographical diversity of reserves and production : IMPLATS vs. AMPLATS



Source : Annual reports of IMPLATS and AMPLATS (2004)

To perhaps clarify the IMPLATS conundrum even further, in a PwC (2003) research report, far more significant than company executives, all investors and analysts rated political risk as a key factor in their investment decisions.

▪ **Country risk : strategic management implications**

Rugman and Hodgetts (2003) argue that the challenge for a MNE is to identify and assess political risks and decide how to manage them, suggesting that effective negotiations strategies with the future host country to secure a variety of guarantees such as low taxes, the right to repatriate profits and promise regarding freedom of operations, especially prior to investing, are amongst its options. They posit a variety of stratagems MNEs can take to ensure ‘their strategies do not go awry because of unexpected developments,’ arguing that the two most effective are ‘integrative and protective/defensive techniques’ and the strategic use of joint ventures and partnerships (pg.374).’ According to these authors integrative strategies *ibid*, are designed to:

- Embed the MNE into the host country's environment and infrastructure and ensure it becomes less noticeable as 'foreign' firm e.g. keeping the old name of an acquired company.
- Develop good relations with the host country and other political groups producing as much locally as possible, hiring and promoting local personnel, using them to run large parts of the operation. Although IMPLATS has used this effectively, the Zimbabwean government has recently started insisting that the company builds a refining capacity in Zimbabwe and only export refined PGMs, as the first step of the its long-term beneficiation drive in the industry. Utilising IMPLATS' spare SA refining capacity to drive down unit costs as part of its cost strategy was a strategic consideration in entering Zimbabwe. Given the estimated cost of building a new refining capacity (US\$800million) and its current spare refining capacity, the company believes this poses a risk to its long-term survival (IMPLATS business plan, 2005/06).

Protective and defensive techniques (non-integrative), *ibid*, are designed to discourage a host country from interference, such as:

- Conducting R&D at other geographical locations and importing the knowledge as needed, thereby protecting the company R&D facilities in the event of expropriation;
- Limit the role of local personnel to those operations that are not vital to the running of the facilities, to ensure in the even of expropriation, locals would not be able to run operations efficiently;
- Maintain high levels of local borrowing so that the government cannot threaten MNE without jeopardising its own investment and that of other local banks. This will also help manage foreign currency risks (Boczko, 2005).

Rugman and Hodgetts, whilst acknowledging that combined strategies are possible, suggest joint ventures and partnerships approved by the government will be another approach to managing political risk. They however recognise this could pose limitations and suggest the MNE can take the following measure:

- Ensure the compatibility of firm specific advantages. If say the local partner steals technology, breaking away and commencing its own production under a different name or trademark, previous agreements with host government should provide the necessary protection and return of its assets and patents and in the event of failure, the MNE can implement previously designed retaliatory plans by finding another local partner with whom to do business and possibly drive the initial partner from the market.

2.6.3 Internal business perspective

It is here that IMPLATS' competitive advantage is effectively deployed, currently the most cost-effective and efficient producer in the world, the source of this rooted in its people in applying the following processes:

Operations management. Research reveals the quantity of *ore reserves and mineral resources* held by a mining company is a critical ingredient investors utilize to value the mining companies (PwC, 2003). In support, Pincock Perspectives (2003) suggests that investor confidence in the mining sector has in general been eroded due to the disclosure of overstated ore reserves. This emphasizes the importance of IMPLATS seeking competitive effectiveness based on internal analysis, given its competitive disadvantage on reserves. Porter as well as Rugman and Hodgetts suggest a firm can achieve this by performing a value chain analysis.

The implications of the above are that IMPLATS can continue to pursue its cost strategy by an aggressive construction of efficient facilities and vigorous pursuit of cost reduction and overhead control across its value chain (Rugman and Hodgetts, 2003). Slack, Chambers and Johnston (2002) teaches us an operational excellence strategy (Porter, 1985) focuses on optimally achieving the potentially conflicting operational performance objectives of quality; cost-effectiveness; speed; dependability; and flexibility. Closely related to this are the capital expenditures in respect of which investors are increasingly placing a premium as an indication of future earnings capacity. This is supported by

empirical evidence suggesting stock prices correlate well with announcement of major capital investments (Blose and Shieh, 1997; McConnell and Muscarella, 1985). This should be treated with caution however as Titman *et al.* (2003) in contradiction, found that firms that increase capital expenditure driven by ‘empire building tend to underperform their benchmarks over the following five years. Of importance also is the nature of the capital expenditure and the effectiveness with which the expenditure project is conceived, planned, executed and delivered (Kerzner, 2003).

2.6.4 Learning and Growth perspective

The key concern here is how the company seeks to sustain its ability to change and improve in order to generate the momentum required to trigger the outcomes in the other perspectives. IMPLATS explicitly recognizes that it is in its people that its competitive advantage lies but also recognizes that information technology plays a critical role in sustaining its operational excellence philosophy, making effective human resources management a critical component of its competitive strategy:

Human Resources and Transformation (Change) Management. The modern concept of human resource management centres around the selection, training and development, motivation and compensation of suitable personnel to ensure organizational objectives are achieved (Beardwell and Holden, 2001; Carell *et al.*, 2000). Management should be looking at providing other non-monetary incentives to the workforce who would not be impacted by high inflation and the erosion of monetary compensation. This would include sending them on an overseas trip paid for by the company if certain objectives are achieved. A motivated workforce it is suggested (Ivancevich and Metteson, 1999) contributes to organizational performance and increasingly, the resource-based view of the firm (Johnson & Scholes, 2002) has emerged as a basis for an organizational competitive advantage, a view adopted by IMPLATS as follows:

IMPLATS’ competitive advantage (cost-leadership) has been derived mainly from the calibre and motivation of its people and innovative work practices and not from its resource / asset base (IMPLATS board strategy session pack, 18/02/2005).

Given the company's competitive disadvantage with respect to quantity of reserves, effective *performance management* across the value chain, remains the most effective means to sustain its competitive strategy. The performance management process however entails some major limitations as the schemes are often rooted on flawed assumptions and pose major design and implementation problems (Bacal, 1998 and Sumlin, undated), thus negating their much heralded usefulness (Mercer, 2003). Kaplan and Norton however provide the balanced scorecard as a useful mechanism to drive the process at individual and team level arguing that it works best when the reward system is aligned with the achievement of the score card measurements, in all four perspectives (Kelly and Monks, 1996).

The use of the balanced scorecard to measure and manage individual and team performance has however not been a panacea for other problems that continue to challenge human resource practitioners in corporate South Africa. Changes in the cultural make-up of workforce demographics and leadership, mainly due to the government's equal opportunity policies, is forcing organizations to re-examine their human relations and employment practices (Hilliard, 1996; Smit and Cronje, 2002). Meanwhile external pressures arising from globalization (Griffin, 1999), shortage of skilled labour and over-supply of unskilled workers (Mbigi, 1995), reduced technology cycles (Manning, 1996; McRae, 1996) amongst others, are the key drivers of change. Khoza (1994) and Manning (1997) *argue that South African Managers can only succeed in improving aggregate human potential by effectively managing these issues.*

Besides the EEA and SDA, the SA government is implementing its transformation policies by entering into broad-based charters with various industrial sectors, with the *mining charter serving as the government's scorecard for monitoring transformation in the sector. Anecdotal evidence suggests the SA and Zimbabwean mining charters have affected IMPLATS the most, exacerbated by the critical shortage of skills within the previously disadvantaged community to meet the charter targets. The board accordingly*

as part of its strategy process is seeking to fully understand the extent to which these transformation challenge impacts on its valuation.

Earnings management. The foregoing literature whilst providing a long-term basis for delivering on shareholder value, may not always deliver on short-term values, regrettably a critical focus of many investors. Graham *et al.* (2004) *found that the majority of firms view earnings, especially EPS as the key metric for investors more than cash flows, arguing that because of severe market reactions to missing earnings targets, firms are willing to sacrifice long-term economic value to achieve a short-run earnings target or smooth earnings.* Further that missing an earnings target and/or reporting volatile earnings will reduce earnings predictability and *reduce stock prices* as missing earnings targets indicates to investors that a firm cannot accurately predict its own future. Bartov (1993), Bushee (1998) and Martin and Pretty (2001) found evidence of managers taking short-term economic action such as asset sales and R&D cuts, and postponement of maintenance to meet earnings targets but other researchers (Graham *et al.*) suggest that these actions may have also been driven by strategic considerations. However, a global mining industry-focused research (PwC, 2003, pg. 2) found that over 70% of company executives, investors and analysts confirm the stock ‘markets continued focus on short term earnings is a problem’ posing a prime industry concern given the long lead times and extended project life spans in the industry. *Ceteris paribus*, firms that report continuous growth in annual earnings are priced at a premium relative to other firms (Barth, Elliot and Finn, 1999) as research suggests growth firms that fail to meet earnings benchmarks suffer large negative price reduction on the earnings announcement date (Skinner and Sloan, 2002) whilst firms that meet or exceed analyst expectations often report superior future accounting performance (Bartov, Givoli and Hyan, 2002).

Whilst the IMPLATS valuation problem is not supported by the above findings, it supports the view that investor sentiments play a major role in market ratings. The above should however not be misconstrued as though identifying and computing a metric for IMPLATS share mis pricing. It remains one of most challenging aspects of behavioural

corporate finance due to the classic joint hypothesis problem (Fama, 1970) wherein predictable movements in share prices may just as well be a result of compensation for risk as a consequence of bias in investors' expectations, rather than movements in fundamental values. The urgency of resolving this joint hypothesis problem is even more compelling in the mining industry where 'more than 70% of mining executives surveyed believe that their companies are undervalued (PwC, 2003, pg. 2)'. As emphasised by Jensen (2004), divergence between a firm's market value and its value perceived by its managers can lead them to make poor acquisitions in an attempt to improve on firm value, thus presenting potential strategic problem for IMPLATS.

Graham *et al.* document that in a bid to boost share prices, managers often employ simple heuristics in response to a handful of widely held beliefs about how investors react, viz:

1. The P/E multiple falls if you fail to hit the earnings benchmarks and/or if earnings are not sufficiently smooth;
2. Everybody manages earnings to hit targets, so if you do not, you will get hurt;
3. Because everybody manages earnings, if you miss the benchmark, you have revealed hidden problems, which worsens the perceptions of future growth prospects; and
4. Voluntarily disclose market-moving information because doing so results in lower information risk.

Perhaps the strongest support for the impact of investor sentiment on company share price performance is explained by the earnings management game, which has become an integral part of corporate strategy, at least for as long as executive compensation continues to be tied to share price performance. Alternatives to remuneration, such as accelerated executive development of high achievers, need to be looked as complimentary to executive compensation. This makes it imperative that a critical literature review relating to behavioural corporate finance specific to how investor sentiment affect capital asset (share) prices is undertaken. It should however be noted from the outset that the behavioural corporate finance theory and its explanation of

capital asset prices behaviour is based on an assumption of rationality. Goetzmann and Massa (2003) note that the discipline continues to be challenged by the tantalizing but less than convincing empirical evidence to support the link between individual investor behaviour and asset price dynamics, despite the widely held beliefs that investors behave irrationally and are prone to behavioural heuristics that culminate to investment choice sub-optimality. Although they admit *ibid* that investors' buy, hold or sell behaviour, other than being determined by fundamental values, might simply be related to rational portfolio rebalancing activities, changes in investor wealth or even *rational trading* on inter-temporal regularities such as momentum or mean aversion (Barberis *et al.*, 1998; Daniel *et al.*, 1998) this researcher disagrees, on the grounds that it this momentum or mean aversion, that constitutes investor irrationality.

2.7 Investor sentiments : A basis of company valuation

Daniel and Titman (2000) intimate that psychology literature documents a myriad of behavioural biases such as cognitive dissonance, attribution bias, and conservatism bias (Edwards, 1968), that can potentially explain almost any pricing anomaly imaginable, positing *ibid* that whilst the notion of rationality assumes unlimited information processing capacity, in reality, this is not the case, as an individual uses vague, *ad hoc rules* based on "hunches" easily influenced by behavioural biases, to translate received information into cash flow estimates and firm valuations.

Arnold, Baker *et al.*, Pike and Neale and Maund (2003) suggest fundamental values will almost always fail to fully determine the true value of a company's stock, negating the EMH (Brennan, 1986) due to information asymmetries, leaving investor sentiment to play an ever increasing role in share price valuations. Investor sentiment, broadly speaking, means investor expectations depart from rationality as most economists modelling sentiment let expectations of at least one group of investors to wander but take risk tolerance as fixed (Frost and O'Connell, 2003). For multiple risk assets however, investor confidence and sentiment depart. Confidence (risk tolerance / appetite) becomes a function of the investor's preferences, and not at all related to a particular asset, whilst sentiment is specific to both the investor and the asset, in that an investor may

simultaneously have positive sentiment about some assets and negative sentiment about others. Frost and O'Connell (2003, pg. 20) argue that the difficulty posed by these concepts is the fact that investor confidence cannot be directly observed and as a result, large and widespread price changes generate considerable disagreement as to their source, but concludes that 'the risk tolerance component turns out to account for a substantial portion of *variation in portfolio holdings* and a smaller but meaningful amount of variation in equity returns'. They however concede *Ibid*, that most attempts to measure investor sentiment and risk tolerance 'rely on price or return data, but these run into trouble when trying to disentangle whether an observed price change is attributable to a shift in investor confidence or a change in fundamental value' (Fama, 1970).

Specific insight into these behaviour patterns hinges on an understanding of capital asset price dynamics and the related theories and underpinning empirical evidence.

2.7.1 Investor behavioural theories and capital asset price dynamics

Corporate behavioural finance theory offers a plethora of explanations for the behaviour of investors as they seek to achieve investment objectives. Baker, Coval and Stein (2004) postulate however, that the underlying assumption is that investors continuously monitor their portfolios and condition their investment decisions on the most recently available information noting *ibid*, that this assumption is only convenient for modelling purposes, given a myriad of evidence that investor behaviour is inertia –taking the part of least resistance. They point that inertia behaviour can arise from *endowment effects* (Thaler, 1980) - a tendency to procrastinate in decision making (Akerlof, 1991) or the cognitive fixed costs associated with re-evaluating and re-optimising on existing portfolio due to *loss aversion*. Though corporate finance theory continues to be challenged to find a direct link between individual investor behaviour and asset price dynamics, few doubt that large numbers of investors behave irrationally and are prone to behavioural heuristics that lead to suboptimal investment choices. Goetzmann and Massa (2003), building on the loss aversion theory (Kahnemann and Tversky, 1979) and disposition effect (Shefrin and Statman, 1985) show that when the fraction of "irrational" investor purchases in a stock

increases, the unexplained portion of the market price of the stock decreases, suggesting this evidence is consistent with the hypothesis that trade between disposition-prone investors and their counter-parties influences relative prices. They argue *ibid*, that not only does disposition affect individual security prices, the aggregate behaviour of disposition-prone investors appears to matter at the aggregate level. This is consistent with the theory that small amounts of individual-level irrationality can have large aggregate effects (Akerlof & Yellen (cited in Fehr and Tyran, 2000)). *The premise of this researcher therefore is that various investor behavioural theories will be quite invaluable in exploring the main research problem, hence guiding the rest of this literature review.*

The loss aversion theory. Kahneman and Tversky (1979) posit that different people make different choices under different conditions when faced with risk, coining the term *loss aversion* to describe an investor behavioural tendency to seek risk when faced with possible losses, and to avoid risk when a certain gain is possible. Coyle puts it in simple terms: when a person is in a position of gain, he becomes increasingly risk averse and is less inclined to gamble because he wants to hold on to his gains. A person in a position of loss becomes more risk-seeking because he does not have much to lose.

The disposition effect. Shefrin and Statman (1985) observed that individual decision-makers do not behave in accordance with expected utility theory coining the term disposition effect to describe the tendency to sell winners too early and ride losers too long. In their landmark study, they postulated four elements that place this behavioural effect into a wider theoretical framework, viz: the prospect theory, mental accounting, regret aversion and self control. Statman and Thorley (1999) however found that this effect is stock-specific rather than a market phenomenon (also see Goetz Mann and Massa, 2003). Grinblatt and Han (2002) furthermore, found that disposition effect creates a spread between a stock's fundamental value and its equilibrium market price, *providing support for this researcher's use of investor trading decision as a proxy for company valuation (see chapter 3).*

The capital asset pricing model. Ward (1996) points that a major problem to predicting capital markets and investor behaviour is the absence of well developed risk constructs which causes the modelling of price behaviour to be relegated to the use of basic assertions. The CAPM suggests investors measure the riskiness (beta) of a stock to determine required risk premium (Lintneur, 1965; Sharpe, 1958) and in the absence of money illusion (Cohen *et al.*, 2005; Fehr and Tyran, 2000) and other investor irrationalities, investors will tend to require an increased return for assuming any increased risk on an investment, along the security market line. This is supported by Shumway (1997)'s loss-aversion-based equilibrium asset pricing model and empirical evidence (Coval and Shumway, 2001) which shows loss aversion induces investors to demand a higher risk premium associated with negative market *returns and hence the notion that loss aversion affects share prices*. Though the CAPM in its original form has been severely criticized (Fama and French, 1992; Ward, 1996), *it remains a robust theory to predict investment behaviour under conditions of risk and uncertainty and will serve as a basis for exploring the impact of investor sentiment as it relates to country risk factors in Zimbabwe*, on IMPLATS' valuation, as consistent with research evidence which reveals a 'strong and statistically robust correlation between low macroeconomic volatility and high asset prices (Lettau *et al.*, 2004, pg 1). In a further illustration of the practical application of the CAPM to IMPLATS, Ward (p10) points out that the model:

indicates that an estimate of the investor' risk adjusted cost of equity capital for a company should be a prerequisite for any of the company's financial managers involved in investment decision-making criteria, if any objective of enhancing shareholder value is claimed by the company (Graham and Harvey, 2001).

The money illusion theory. Fehr and Tyran (2000) describe money illusion as the tendency for people to behave differently when the same objective situation is represented in nominal terms rather than in real terms. They argue *ibid* that since the absence of money illusion means an individual's preferences and perceptions and hence choices of real magnitudes are not affected by purely nominal changes, it is natural to view the concept as a framing of representation effect. They argue that representation

effect seem to arise because when people make decisions, they tend to adopt a particular frame of reference and that because some options loom larger in one representation than in another, alternative framings of the same options may provoke different choices. They argue that there is a large body of experimental research that shows that alternative representations of the same situation may well lead to systematically different responses.

The representivity bias theory. Kaynermann and Tversky (1974) postulate an important investor bias – representivity, the tendency of experimental subjects to view events as typical or representative of some specific class and to ignore the laws of probability in the process. They advance *ibid* that, ‘people replace the laws of chance by heuristics, which sometimes yield reasonable estimates and quite often do not (pg. 32)’.

The gradual information diffusion theory. The theory (Chan, 2003) suggests geography is an important determinant of who learns what when (Coval and Moskowitz, 1999; 2001) and that investors who are spatially separated behave as if they have access to different information. This is supported by Old Mutual Asset Management (2004) who suggest foreign investors do not fully understand the huge opportunities in doing business in Africa, *and in the view of the researcher, this may be contributing to the valuation discounting of IMPLATS.*

The local Investor Relations theory. Hong *et al.* (2003) find that irrespective of investment styles, mutual fund managers within close geographical proximity, given that they are more likely to come into direct contact with one another, are more likely to hold (or buy or sell) a company’s share if other investors in the geographical vicinity are doing the same (Rosenthal and Strange, 2001), even when controlled for the *local preference effect*, arguing that this is consistent with Schiller (2000)’s epidemic model in which investors spread information about shares to one another by *word-of-mouth*, as empirically confirmed by Schiller and Pound (1989). *Ibid*, they suggest that the ‘LIR’ hypothesis wherein investors get fed inside information directly by managers of the

companies they invest in, first, perhaps due to the SEC's Reg FD, may not be tenable. *In the view of this researcher however, this appears valid in SA.* Research evidence (Breakstone and Ruth, 2003) suggests international investors believe there is vast quality and timely information differential between local investors in SA companies and overseas investors and this is a cause for concern for international investors. Investors argue, *ibid*, that an important measure SA companies can take to attract investor attention is a NYSE listing and setting up of robust IR offices in the US, which will help reduce the gradual information diffusion effect. *They also argue, ibid, that SA resource companies that have taken such measures, such as Harmony, Anglo America, AMPLATS, ISPAT ISCOR have seen tremendous improvement in their valuation.*

Under /over reaction theory. Empirical research evidence has identified two strands of pervasive regularities: under-reaction and overreaction (Barberis, Shleifer and Vishny, 1997). Whereas the under-reaction evidence suggests in the short term (1 to 12 months), the good (bad) news powerfully predicts positive (negative) returns in the future, over-reaction evidence suggests over the longer horizons (3 to 5 years), security prices overreact to consistent patterns of news pointing in the same direction. Securities with strings of good (bad) performance, however measured, get extremely high (low) valuations, and these valuations on average return to mean, presenting a challenge to the EMH *Ibid.* *This advises that a typical dimension to the review of investment performance is the time horizon over which investment portfolio performance is measured.*

2.8 Investment time horizons: Measurement of investment performance

An important issue raised in investment literature relates to the *investment time horizons*. IFE makes a case that despite academic research in investment performance dealing with horizons of over 20 years, industry time horizons are much shorter as there is unquestionably a growing trend in the industry to pursue short term performance as plan sponsors and clients feel pressured to change styles because of relatively short-term performance differential (*ibid*). This is supported by Myners report (2001) in the UK that questions whether the long-term financial objectives of pensions funds were are not being

endangered by peer group analysis that were overly short-term in focus, arguing *ibid* that fund managers increasingly feel pressured to focus on short-term performance (also see Chevalier and Ellisson, 1999). *IFE (2001) suggests a five year investment time horizon is the most realistic to judge investment performance, arguing that pervasive empirical evidence suggests the appetite for underperformance due to a particular investment style have become increasingly shorter.* This was long foreseen by J.M Keynes (1936, pg. 18) in ‘*The General Theory of Employment, Interest and Money*’ when he wrote:

It is the *long-term investor*, he who promotes the public interest, who in practice come in for most criticism, wherever funds are managed by committees or boards or banks. For it is in the essence of his behaviour that he should be eccentric, unconventional and rash in the eyes of the average opinion. If he is successful, that will only confirm the general belief in his rashness; and if in the *short-run* he is unsuccessful, which is very likely, he will not receive much mercy. Worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally.

The implications of these in the IMPLATS vs. AMPLATS situation cannot be more profound. IMPLATS reserves can only guarantee supplies for the next 30 years (IMPLATS business plan), whereas AMPLATS’ can guarantee supplies for another 100 years. *If investment horizons have become shorter, should the quantity of reserves over which AMPLATS has competitive advantage over IMPLATS justify the current valuation differential, despite that IMPLATS’ reserves guarantee earnings for at least 30 years and given its comparatively superior improvements in fundamental values? Could part of the problem lie in IMPLATS’ Investor Relations strategy?*

2.9 Conclusion

In this chapter, the researcher reviewed the strategic drivers of the PGMs sector, emphasizing aspects such a industry regulation, market consolidation, declining sector returns and industry concerns about the appreciating ZAR and country risks in Zimbabwe that appear to pose negative investor sentiments that in turn could be at the centre of

IMPLATS' valuation problem. The chapter put the main research problem into perspective, using the P/E ratio as the overarching investor valuation metric, whilst acknowledging that other metrics abound and in the process, claiming that the increasingly shorter investment time horizons is negatively affecting the validity of quantity of ore reserves and mineral resources in valuing mining companies. The chapter highlighted the possible strategy considerations for IMPLATS in the context of the highlighted strategic drivers and industry concerns whilst reviewing how various management disciplines are (can be) integrated to improve company fundamental values in IMPLATS. It went further to insightfully demonstrate how investor behavioural theories such as loss aversion, the disposition effect, the CAPM, the gradual information diffusion, local investor relations, the representivity bias and under /over reaction theories could explain capital asset prices, thus setting the basis for the questions incorporated in the questionnaire and supporting the general line of inquiry in Chapter 3 – The Research Methodology.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents a comprehensive review of the research methodology adopted, clearly outlining and critically motivating the chosen research design in the context of the nature of the research problem and findings of the literature review. It describes and critically motivates the survey instrument design and distribution, mapping out the total population as a means to justify the sampling design and goes further to demonstrate the data collection and analysis techniques adopted and explaining in the process, how quality, validity, content and construct; relevance; transferability, reliability, accuracy and completeness was assured.

3.2 Research design

Hussey and Hussey (2002) and Watkins (2004) posit that research falls within three broad categories:

- pure research;
- applied research; and
- action research.

Watkins states that applied research is popular for masters students and is intended to lead to the solution of specific problems and usually involves identifying organizational problems and working with those organization to find solutions. Whilst admitting this research therefore is accordingly therefore, applied in nature, it could also be suggested it is action research. Coglan & Brannick (2007, pg. 7) define action research as ‘a research approach, which focuses on simultaneous action and research in a participative manner.’ Watkins (2004, pg. 4) argues that action research ‘can be identified as contributing to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually accepted ethical framework.’ He

argues, *ibid*, that typically (i.e. in an action research), 'students are expected to learn from tackling problems in their own or other's organizations.' This research meets these theoretical definitions of action research as it contributes to the practical concerns of IMPLATS management (where the researcher is participating manager) and carried out in joint collaboration with the company.

The specific research design however, is primarily *exploratory* in nature. Exploratory research is appropriate for studies in respect of which very limited or no earlier studies have been conducted and often to develop an insight into specific issues, determine the existence of a phenomenon and identify patterns, new ideas or hypothesis to guide future research effort (Dane, 1990 and Hussey and Hussey, 1997). The IMPLATS valuation conundrum appears to be a phenomenon, and the best way to achieve the main research objective is to identify any new ideas, preliminarily explore some possible hypothesis and provide strategy recommendations to the board.

Neuman (2003) suggests a research problem must be transformed into a hypothesis. This is not appropriate for this study as hypothesis testing is not required but rather that an *exploratory-explanatory* (Watkins; Yin, 2003) is adopted, achieving research objectives through inductive logic, and concomitantly suggesting hypothesis to guide further research (Hussey and Hussey, 1997). Research designs exist along a continuum of phenomenological (qualitative data) and positivists (quantitative data) (Leedy, 1993; Hussey and Hussey, 1997). Compared to the positivist design, phenomenological design, uses small samples, primarily concerned with generating theories, uses rich but subjective data and natural location but reliability is low whilst validity and generalisability is very high (Hussey and Hussey). The qualitative research has been alternatively described as answering all questions except 'how many' focusing on understanding issues rather than measuring them (Gordon and Langmaid, 1993). Understanding, rather than measuring investor sentiment and how it impacts on IMPLATS' valuation being the focus of this study, qualitative *design* therefore became the natural choice.

A possible limitation of qualitative research however, is the expense and data collection time and as aforementioned, its tendency to produce subjective soft data with the risk of interpretational misrepresentation (Rudestam *et al.*, 2001). Qualitative research has grown in relevance over the years and now enjoys similar status to quantitative research. Due to technology improvements, analytical interpretive techniques, rigour and precision of experimental/quasi experimental designs have improved, thus the qualitative design now works well with quantitative designs especially within case studies (Rudestam *et al.*, 2001). According to Watkins, unlike before, a larger number of participants can now be accessed using standardised scales and measures. Accordingly, the research will *adopt both qualitative and quantitative designs* to focus on understanding the values, attitudes and perceptions of investors, which is interpretive and inductive in nature (Cooper and Schindler, 2000).

A holistic *case study* will however be the specific vehicle to conduct the research. A case study is an empirical inquiry that investigates when the boundaries between phenomenon and context are not clearly evident, suitably used in research when the goal is to describe the prevalence of a phenomenon {e.g. IMPLATS' valuation problem} or theory {investor behaviour} designed to be predictive about certain outcomes {e.g. IMPLATS' long-term share price performance} (Yin, 1994; 2003). This is also supported by Hussey and Hussey (1997, p. 65) who define 'case study' as 'an extensive examination of a single instance of a phenomenon of interest' and (Gummesson 2000, p. 116) who suggests 'action research' is an approach to conducting 'case study research.'

Yin (1994) identified five research design components applicable to case studies, viz:

1. The research questions posed {if they are 'how', 'what' and 'why in nature'} (Huysamen, 1994);
2. The purpose, propositions, hypothesis and research objectives;
3. The unit(s) of analysis;
4. The logical linkages between the data, purpose, propositions, hypothesis and research objectives; and
5. The criteria for interpreting the data {*all the above relevant to this study*}

And suggests two other measures for case study appropriateness:

1. The extent to which the researcher has control over the events {*no control*} ;and
2. The degree of focus on contemporary event {*IMPLATS' problem is current*};

Cooper and Schindler (2000) posit that a case study places more emphasis on full contextual analysis of fewer events or conditions and their interrelations which provides valuable problem-solving; evaluation and strategy insights. Johnston and Joslyn (1995) argue further that a case study permits an in-depth appreciation of causation processes, the explication and development of hypothesis regarding difficult to observe phenomena through exploration, thus explaining why the *exploratory-explanatory-case study* design was suitable to research the IMPLATS problem. The study was also cross sectional in nature involving an IMPLATS/AMPLATS comparative historical performance data analysis and a survey of their common investors (Neuman, 2003).

A case study, it has however been argued (Hussey and Hussey, 1997), limits generalisability but Yin (1994) argues forcefully that these studies are not 'microscopic' due to insufficient numbers, but that the relatively small sample size only helps achieve the stated objectives and act as an experimental prototype transferable from local to 'macroscopic' explanation, cautioning however, that generalisability should be with respect to theory and not the population. Yin (1994), argues further that multiple case studies tend to strengthen results by replicating pattern-matching and thus raising confidence in theory robustness. Johnston and Joselyn (1995) in support argue that a case study is designed to not represent a sample, but to expand and generalise theory (analytical generalisation) and not to enumerate frequencies (statistical generalisation). Cooper *et al.* (2001) concur - a case study, if well designed, can provide a major challenge to theory and concomitantly provide a source of new hypothesis and constructs.

3.3 The research population

IMPLATS and AMPLATS have a global investor base. Hence the population was made of all investors (private, corporate and institutional) in different regions of the world analysed using the United States SEC Global Regions framework, viz:

- Africa;
- Europe;
- North America;
- Latin America; and
- Far East, and analysed into the different investment holding styles.

3.4 Sampling design

Sampling can be non-probability and probability sampling. Probability sampling 'is one in which the subjects are chosen on the basis of known probabilities', whereas non-probability or simple random sampling' is the one in which every individual or item has the same chance of selection' (Bereson and Levine, 1999, pg. 34). Hussey and Hussey (1997) suggest stratified sampling is used when the population is diverse and there is a need to ensure every subgroup within the population is represented in the sample.

In case studies, the unit of analysis is an all important factor, as it is typically represents a system of actions rather than a group of individuals. Tellis (1997) argues that case studies tend to selectively focus on two or more substantive issues critical in understanding the system being examined. As case studies adopt a multi-perspective analysis, the sampling therefore was non-probabilistic, consisting only of investors capable of contributing to an evolving theory with expert knowledge of the topic such that their views give equal power to all "actors" about the same phenomenon being studied (Rudestam *et al.*, 2001). This means primarily, only the individuals responsible for investments in the mining sector of these investment firms were targeted. This is supported by Rudestam (2001) and Newton (2001) and Trochim (2002) who urge that in sampling, theoretical relevance is

critical in order to saturate a concept and its relationship with other concepts to become theoretically meaningful.

Given that the study specifically relates to IMPLATS valuation relative to AMPLATS', the sampling was tailored to their common investors. The common investors database was constructed by merging the excel spreadsheets listing of IMPLATS and AMPLATS investors (with contact details – emails, telephone etc) publicly filed with JSE and SEC using a common field matching for the investors that occur in both databases. In reviewing the merged fields, it became obvious that some of the subjects listed are in fact analysts and holders of investments on behalf of the investors and not the investing institutions. The researcher's expert knowledge was then used to isolate and produce a listing of common investors – new research population.

3.4.1 Determining the sample size and accuracy

Watkins suggests the formula to determine the sample size and required accuracy is represented as:

$$N = \frac{P(100-P)}{E^2} = \frac{60(100-60)}{25} = \text{At least 96 investors (see footnotes)}$$

In the actual sampling however, a non-probabilistic process was adopted but sufficiently stratified to ensure it remains representative (Hussey and Hussey, 1997; Weberloff, 2002) using a precision control mechanism (Cooper and Schindler, 2001) as below:

Table 2: Research population and sampling design analysis

Global region/ Holding style	Africa	Europe	North America	Latin America	Far East	Total pop.	Simple random sample drawn
Yield	21	25	8	1	1	56	30
GARP	-	26	21	-	2	49	25
Growth	-	1	8	-	2	11	6

Core value	1	17	3	-	-	21	13
Value	-	2	8	-	-	10	6
Index	-	21	13	-	-	34	20
Total	22	91	53	1	5	172	100
Simple random sample drawn	16	53	27	1	3	100	

Source : Researcher –Constructed from investor listing as filed with the SEC

The above stratification is based on previous literature review which suggests investors' behaviour is influenced by holding style (Olsen, 2002; Pike and Neale, 1993) and evidence that suggests investors in the different regions tend to have different understanding of the risks of doing business in Africa (www.omam.co.za). However, regardless of holding style, two fundamental holding objectives : dividend yield and/or capital gains continues to ensure the behaviour of investors regarding portfolio management remains fairly generic, providing the basis for a uniform questionnaire to all investors (Foddy, 1995). The amount of investment held in IMPLATS was not a primary sampling consideration as investors' attitudes are influenced more directly by holding style and region than by value of investment (www.omam.co.za).

3.5 Research instrument design & distribution

Emory and Cooper (1995) offer three primary types of data collection, namely, personal interviews, telephone interviewing and self-administered questionnaires/surveys. Watkins (2004, p. 72) suggests that it is common practice for questionnaires (surveys) to be used in conjunction with the personal interview, providing the following reasons for the use of surveys:

- The ease with which the survey lends itself to data collection;
- The issue of time constraints within the target environment;
- The ease with which input from diversified sources (particularly geographically) can be obtained using modern technology (*e.g. the global investor base of*

IMPLATS and AMPLATS makes the research population diverse and use of modern technology (email) to be the easiest means to collect data).

Personal interviews could however not complement the survey, despite Watkins (2004) suggestion, due to the geographical diversity of the sample and the related costs of doing so. The study therefore was limited to a survey of investors' attitudes and opinions using questionnaires as the sole data collection instrument. This instrument is associated with both positivist (closed-ended) and qualitative studies (open-ended) (Hussey and Hussey, 1997) although Bless & Smith (1995, p. 115), believe these 'remain a complex instrument of data collection'.

The likert five scale was the used to design the questionnaires due the following advantages (Emory and Cooper, 1995);

- Easy and quick to construct;
- Each item meets an empirical test for discriminating ability;
- It is probably more reliable than the Thurston differential scale; and
- Treated as an interval scale.

This researcher's preference for the likert 5 scale is rooted in Emory and Copper (1995) in which they argue the five scale facilitates respondent-centre and stimulus-centered studies (*it is expected that investors views will be respondent- and stimulus-centered*). In order to maintain a chain of evidence, multiple sources of data should be used in a case study (Yin, 1994). The literature review was the main source of secondary data and guided the construction of the questions as follows:

▪ ***Sub-question 1***

The literature review acknowledged that the quantity of reserves and mineral reserves is a key ingredient investors utilize to value mining (resource) companies (Pinckock Perspectives, 2003; PwC, 2003). Theory and empirical evidence clarifies that investment times horizons are short-term in nature (Chevellier and Ellison, 2002; IFE, 2002; Keynes,

1936), even though some investors continue to argue that their investment objectives are long-term. PwC found that the stock markets' continued focus on short-term performance in the global mining industry constitutes a problem. But the Myners report (2001) in the UK found that the pressure for short-term performance was caused by investment performance objectives which were often short-term in nature as a result of capital markets that tend to reward short-term performance to the detriment of long-term performance (Keynes, 1936). Premised on the principle that what gets measured, gets managed and what gets rewarded gets done, the researcher then constructed a claim that investors will generally tend to focus on short-term performance more than long-term performance in valuing and investing in firms. As a result, the hypothesis is that given IMPLATS' consistently superior improvements in fundamental values, AMPLATS' competitive advantage with respect to quantity of ore reserves and mineral resources should not justify its P/E ratio superiority over IMPLATS. This is done to empirically verify management believe that IMPLATS is comparatively undervalued for reasons remotely connected to its competitive position on reserves (See Appendix B for the resulting questions).

▪ *Sub-question 2*

The literature review documented that fundamental values and investor sentiments are the two key determinants of share price behaviour and that investors take risks with the expectation of a commensurate return. Theory posits that when the risks associated with an investment are too high, it negatively affects investor sentiments and in turn affects their trading behaviour with respect to the capital asset in question. It is premised that the demand curve for shares is downward-sloping (Bagwell, 1992; Chen *et al.*, 2002; Hodrick, 1999; Miller, 1977; Shleifer, 1986) and that the law of demand also applies to company shares (Pike and Neale, 1993), allowing the study to use investors' trading behaviour (buy/hold/sell decisions) as a proxy (surrogate) for company valuation / share price performance. Based on the documented theories of risk-return correlation and investor behaviour patterns and the correlation to capital asset prices, questions to empirically test the link between country risks, investor trading patterns and hence IMPLATS' share price performance were designed (See Appendix B).

▪ *Sub-question 3*

The literature review clarified that every organisation requires a broad plan (strategy) on how to achieve its objectives and offers a plethora of strategic techniques (options, positions, directions, methods) for doing so (Johnson and Scholes, 2002; Porter, 1985). Implementing each of these techniques has caused a number of issues that appear to be causing investor panic in the SA mining industry. Literature also documents that investors can discount a company value based on compromise, credibility and governance, positing that credibility discount arises when management agenda is not clear or when management communication leaves vital information to investors' imagination (Olsen, 2002). Pike and Neale (1993) suggest when a company's share price continuously underperforms; its profitability is poor, management poor or has failed to provide vital information to the markets. It was accordingly documented that an effective investor relations strategy plays a critical role in reducing credibility and/or information risk discount. Based on the above, a questionnaire was designed to test investor perceptions about appropriateness of specific strategy considerations available to IMPLATS, allowing a prioritization of the strategy considerations to direct the recommendations of the study. The assumption was that investors' approval of specific strategies will signify their adoption and implementation will not only enhance fundamental values but will enhance their sentiments about the company's future earnings and hence their rating of its share prices (Ernst and Young, 2001).

The researcher then used the TAP paradigm to construct supportive questions with specified context and established applicability to all investors, irrespective of holding style. A clearly thought-out likert 5-scale response framework was then designed, allowing a measure of investor sentiment along an attitudinal continuum on each subject (Cooper *et al.*, 2000; Johnston, 1995; Ross, 2000). For a likert 5-scale to be effective, the statements must be closely connected with the investors and approximately half of them should be positive and half negative (Martins, Loubser and Van Wyk, 1996; Watkins, 2004) (e.g. continuum of strongly disagree to strongly agree with a neutral in the middle). Some of the questions were however open-ended to elicit further expressions of intensity

(Cooper and Schindler, 2001) to engender a better understanding of views being expressed. Rudestam *et al.* suggests pre existing instruments can be modified to suit the study. Two of the questions – on web-cast experience and media investors uses were adapted from www.whisper.com.

The questions were then sequenced in the order in which they address the research sub-problems whilst ensuring the effect of primacy on response bias is limited. A pilot run was administered with 4 Investor Relations colleagues and one investor (personal friend) purely to check:

- *Validity* – the effectiveness of the tests;
- *Reliability* – accuracy and precision of the measuring procedure; and
- *Practicality* – e.g. interpretability, economy, convenience etc., to the investors.

The pilot run resulted in some modifications to the questionnaire and finally an introductory letter was then drafted and inserted into page one of the questionnaire and the questionnaires emailed to 100 randomly selected investors but guided by the precision control framework in 3.4 above.

3.6 Data collection techniques

The parameters of a case study should be clearly demarcated and the technique of data collection should inductively observe recurring patterns (Huseman, 1994). Cresswell (1994) posits an inductive model which grounds theory from patterns in the data arguing that the direction or strength of a relationship or variance needs to be determined, as exogenous and endogenous variables are not readily distinguishable. In this case study, investor sentiment is the exogenous variable and the identified proxies – buy/hold/sell decisions, the endogenous variable, inductively impacting on company valuation.

Initial contact (20% telephonic and 80% email) was made with the investors from the IMPLATS IR offices advising them of the objectives of the study and introducing the researcher. The questionnaires (See Appendix B) were then administered via email with hyperlinks incorporated to facilitate electronic completion and return (Watkins, 2004). A period of 14 days was initially given and extended by another 7 days to improve on

response rate. At the first cut of point, 27 responses had been received. As some respondents had written emails requesting a few more days, the researcher wrote back to all investors who had not yet responded extending the time frame by another 7 days, and thanking those who had already responded. At the final cut-off, 6 more were received bringing the total number to 33, thus 33% response rate.

3.7 Data analysis techniques

Merriam (1998) suggests that an *exploratory* data analysis (EDA) entails the treatment of the data collected by organising and arraying, interpreting to determine meaning, triangulating with other data sources, evaluating for application and implications to facilitate the anticipation of the outcomes and conclusions in relation to the proposed questions.

White (2000) posits that in a case study, data analysis should entail a mix of both quantitative and qualitative techniques to engender a range of perspectives/indicators that should help interpret the research objectives. EDA is problem-driven through a search for clues and evidence, with multiple paths in unravelling mysteries in the data (Leedy, 1989). Yin (1994) however, suggests that in a survey, the researcher should be aware of other sources of evidence and intervening variables with causal relationships that could explain the outcomes more than the exogenous variable and this was done to check for internal consistency.

Data analysis is arguably the most challenging aspect of a study of this nature especially if vast amounts of data have to be analysed. (Watkins, 2004, p. 87) reflects this challenge:

Being faced with a daunting volume of 'raw data', the student must now decide 'what to do with it'. An approach commonly used is to first get the data in a logic format from which the data can be described.

Based on the likert 5-scale categories from which investors had to mark, the researcher summarised the data into the number of responses per category and produced a Microsoft excel-generated frequency distribution (Watkins, 2004) to summarise the number of

respondents by category. The questions that required ranking were analysed using all categories in the rank, summarising the information also to determine the number of respondents per ranked item and an excel generated spreadsheet also produced. The open-ended questions, like aforementioned, were designed to engender opinion basis and intensity (Cooper and Schindler; 2001) as this could not support any other meaningful descriptive interpretation (Berenson and Levine, 1999). However, the response rate to all open-ended questions was zero% but this did not impact on the researcher's ability to draw valuable conclusions from the analysed data. The researcher then used the graphics facility within Microsoft excel, selecting the most appropriate graphics (such a pie charts, bar charts and tables) to pictorially represent the data such that it lends itself to meaningful interpretation and analysis (see chapter 5)

3.8 Ethical considerations

The information used was largely strategic and hence must be treated with utmost confidentiality. The University of Kwa-Zulu Natal agreed that no part of the research results will be published without the express permission of the researcher and IMPLATS. Over 80% of the survey respondents indicated on their returned questionnaires that they would like IMPLATS and the researcher to keep their responses 'absolutely' confidential. It will therefore be a significant breach of confidentiality if this report is published without written permission.

3.9 Limitations of the research

3.9.1 Research Limitations

The research was mainly limited by the limitations of the choice of methodology. Being a case study, Yin (1994) has argued that the results can only be generalized to theory and not to the population. According to Yin (1994), some limitations of the case study methodology include:

- The boundary and unit of analysis are chosen with a view to assist IMPLATS with its predicament, rather than produce results that are applicable to all organisations in similar circumstances;

- Though pilot-ran before being administered, the outcomes can only be as good as the extent of validity and reliability of the structured questionnaire as well as the response rate and quality;
- The lack of face-to-face interviews due to the globally diverse investor base and the related travel costs, may not impact on the integrity of the responses, but may have impacted on the ability of the researcher to elicit much better understanding of the basis of the investors' opinion rather than just soliciting their opinion and behaviour under various circumstances.

3.9.2 De-Limitations

Only the investors common to both companies (IMPLATS and AMPLATS) were surveyed and hence the conclusion only valid in this context.

3.10 Conclusion

In this chapter, the researcher identified the research paradigm as exploratory explanatory making a robust case for the specific design as a 'case study.' It argued that both qualitative and quantitative data are suitable for this type of research, selecting and motivating the use of the likert 5-scale in the design of the principal research instrument – questionnaire. It explicitly provided a synopsis of how the literature review in chapter 2 was used to construct the questionnaire arguing that because of the geographically dispersed nature of the research population, in-depth (personal) interviews could not be conducted to corroborate or obtain more specific insights to questionnaire responses. The chapter delineates the research population, demonstrating how the sampling design was crafted to ensure it represents the population and revealed how data quality assurance was managed. Then the research methodological design limitations and delimitations was frankly revealed, having comprehensively motivated the data analysis techniques employed, thus setting the scene for the next chapter, Chapter 4 – Presentation and Analysis of Results.

CHAPTER 4

PRESENTATION AND ANALYSIS OF RESULTS

4.1 Introduction

This chapter presents and reviews the results of the surveys. It opens with a presentation and analysis of the sample composition, showing the proportion of the responses received from local and from international investors and breaking this further into holding style. Tabular and graphical techniques such as pie charts and bar charts are employed to pictorially reveal the key patterns in the data. All responses (except zero) are presented on the tables and graphs, but only the results considered to be statistically significant are analysed, discussed and linked back to theory and/or the literature review, re-citing the relevant researchers for ease of reference. Meticulous analysis is also undertaken to identify any response patterns from one question to the other that link up investor behavioural trends and reinforce empirical support for key theories, culminating into useful deductions and conclusions. The chapter concludes with a summary of the key findings that set the foundation for chapter five – Deductions and Recommendations, preliminarily suggesting avenues for future research.

4.2 Composition of the sample

Of the sample of 100 questionnaires sent, 33 we returned representing a response rate of 33% with the distribution as follows:

Table 3: Analysis of response rate

Global region/ Holding style	Africa	Europe	North America	Latin America	Far East	Total received	Response rate	% of total received.
Yield	10	4	2	0	0	16	27%	49%
GARP	-	4	5	-	0	9	18%	27%
Growth	-	0	0	-	0	0	0%	0%

Core value	0	3	0	-	-	3	14%	9%
Value	-	1	0	-	-	1	10%	3%
Index	-	2	2	-	-	4	12%	12%
Total received	10	14	9	0	0	33	33%	100%
Response rate	63%	26%	33%	0%	0%	33%		
% of total received	30%	42%	27%	0%	0%	100%		

Source : Researcher : Constructed from analysis of investor responses

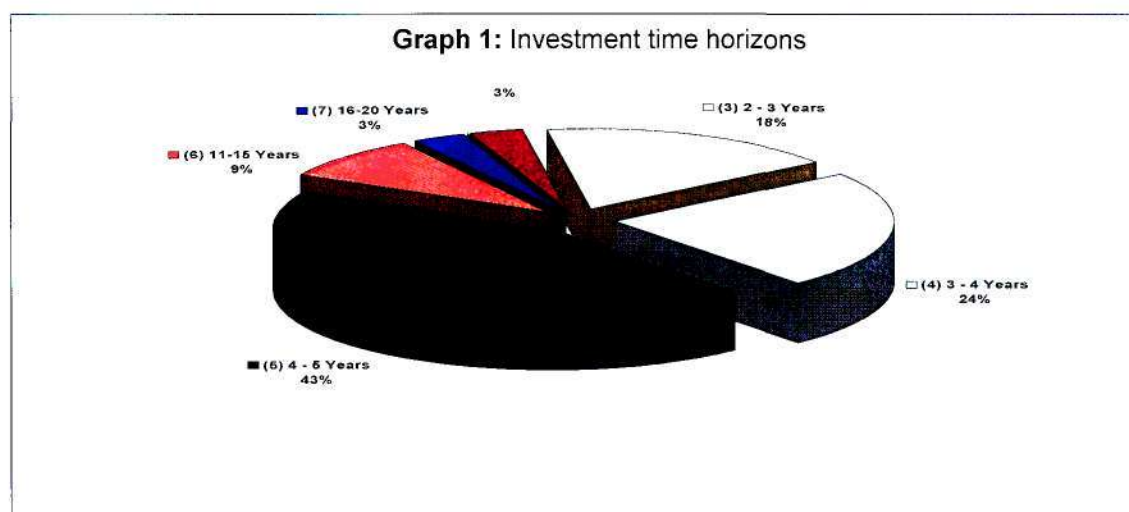
The respondents were given one month to respond and frequent follow-up calls made to ensure responses were received. At the cut-off time (extended once), over 15 investors had made contact requesting a few more days to complete the questionnaire. When analysis began, only 27 responses had been received. As more were received, it was easy to augment data in purpose-designed excel spreadsheets to automatically update the graphs. At final cut-off, 6 more had been received bringing the total responses to 33. Interestingly, the last six responses did not reveal any responses significantly incompatible with previous responses received. This reinforced the researchers conviction that cut-off will not materially affect the representivity of the outcomes and the usefulness of the conclusions. From a cost-benefit point of view, it was obvious that the time and effort required to secure more responses will out-weigh the benefits, and accordingly, it was decided that that final cut-off be activated. At this point, Africa had the highest response rate of 62.5%. All the investors are based in South Africa and it was relatively easy for the researcher and the investor relations offices of IMPLATS to follow-up the questionnaires. The next highest was North America and followed by Europe. Thirty percent (10 of the 33) responses were from local investors and 70% (23 of the 33) from international investors, thus bringing the overall response rate to 33%. In

terms of holding styles, yield investors had the highest response rate of 26.2%, followed by GARP (16.4%), core value (14.28%) and index (11.7%) investors. Meticulous analysis of the data however, did not reveal any statistically significant patterns between responses and holding style.

4.3 Findings and analysis

4.3.1 Investment time horizons & performance measurement (sub-question 1)

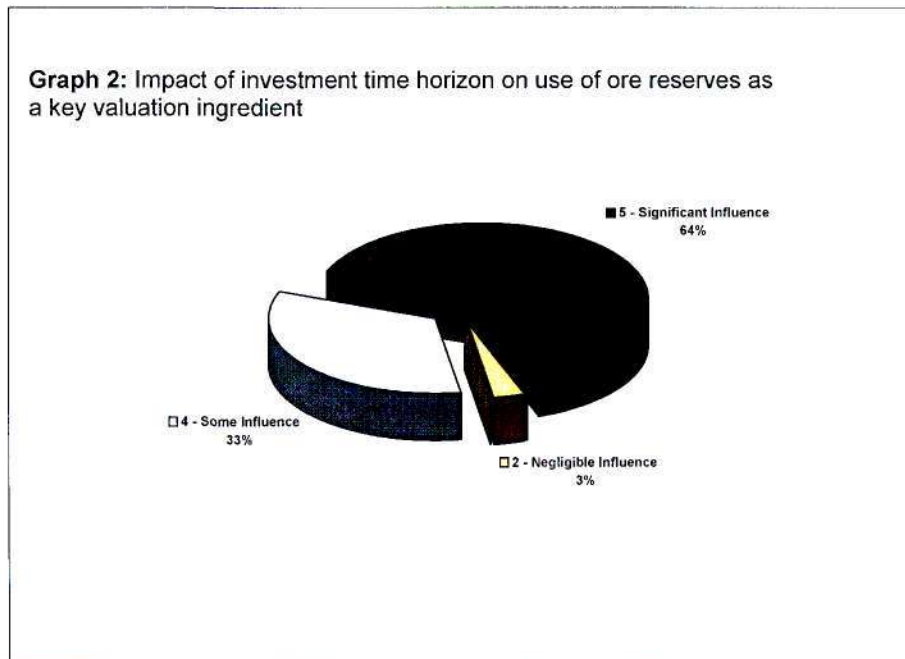
4.3.1.1 *Over what time horizon is your investment performance measured?*



Analysis

- 43% of investors' performance is measured over a period of 4-5 years time horizon. 45% (1, 1-2 years; 6, 2-3; years and 8, 3-4 years) is measured over a horizon shorter than five years. In total therefore, at least 88% of investors' performance is measured based on portfolio performance over a period of shorter than five years. This is indicative of the pressure for short-term performance as raised in Chevalier and Ellison (1999); IFE (2001); Keynes (1936) and the Myners report (2001).
- Only 12% (3, 11-15years and 1, 16-20 years) is measured over a horizon longer than 11 years; and
- None is measured for over an investment time horizon longer than 20 years.

4.3.1.2 *If investment time horizon affects the measurement of the performance of your portfolio, to what extent does that correspondingly affect how you depend on quantity of ore reserves and resources in valuing mining companies?*

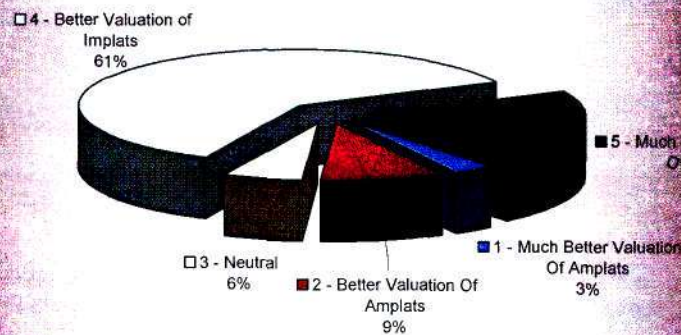


Analysis

1. 97% (21, significant influence and 11, some influence) of investors agree the investment time horizon over which the performance of their portfolio is measured influences their valuation of mining stocks. This is in contradiction with literature evidence that the quantity of reserves is the overriding ingredient for valuing resources companies (PwC, 2003; Pincockperspectives, 2003).
2. Only 3% (1 investor) say the influence is negligible.

4.3.3.2 *How does the time criteria for measuring the performance of your portfolio influence your Valuation of IMPLATS relative to AMPLATS?*

Graph 3: Impact of investment time horizon on the valuation of IMPLATS vs. AMPLATS



Analysis

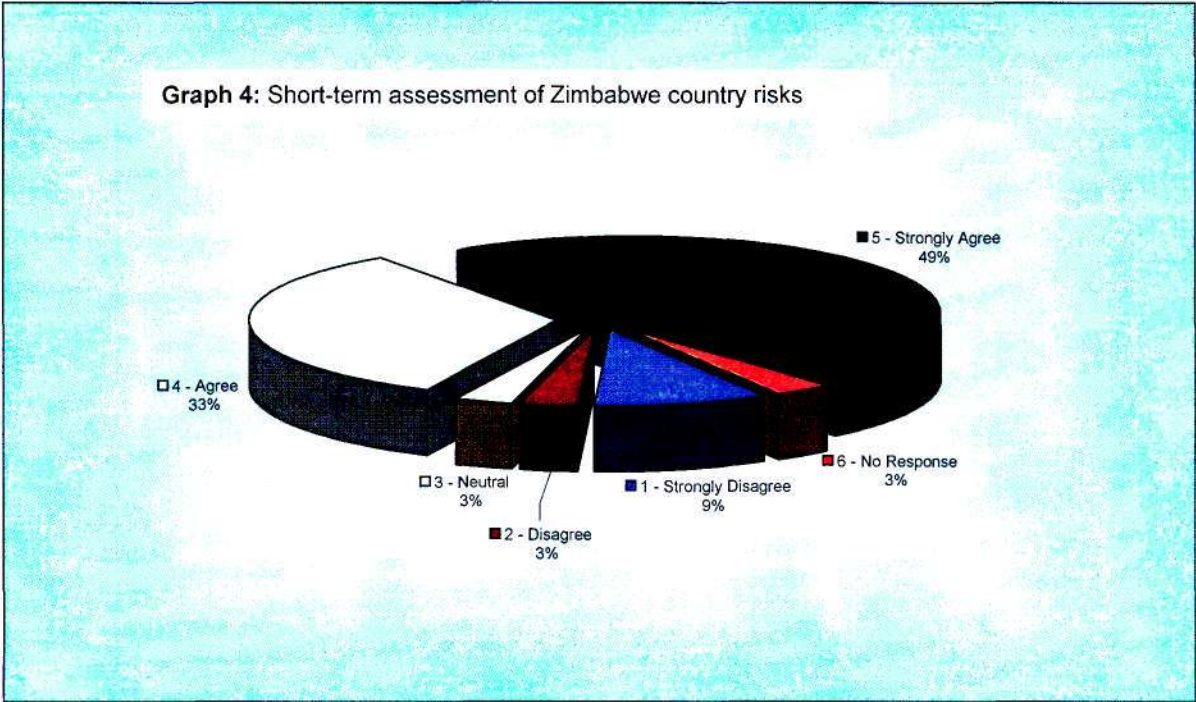
- 1 82% (20, much better valuation of IMPLATS and 7 better valuations of IMPLATS) of investors agree the time horizon over which their portfolio is measured gives them a favourable valuation of IMPLATS compared to AMPLATS;

- 2 Only 12% (1, much better valuation of AMPLATS and 3, better valuation of AMPLATS) state they value AMPLATS better than IMPLATS in their portfolio, irrespective of the time horizon over which their investment portfolio performance is measured. Interestingly, it is the same four investors who indicate that the investment time horizon over which their portfolio performance is measured is between 11 to 20 years.

4.3.2a Assessment of political risks in Zimbabwe (sub-question 2)

To what extent would you agree with the assessment that the political risks in Zimbabwe is serious and expected to escalate negatively impacting on IMPLATS' future earnings in the:

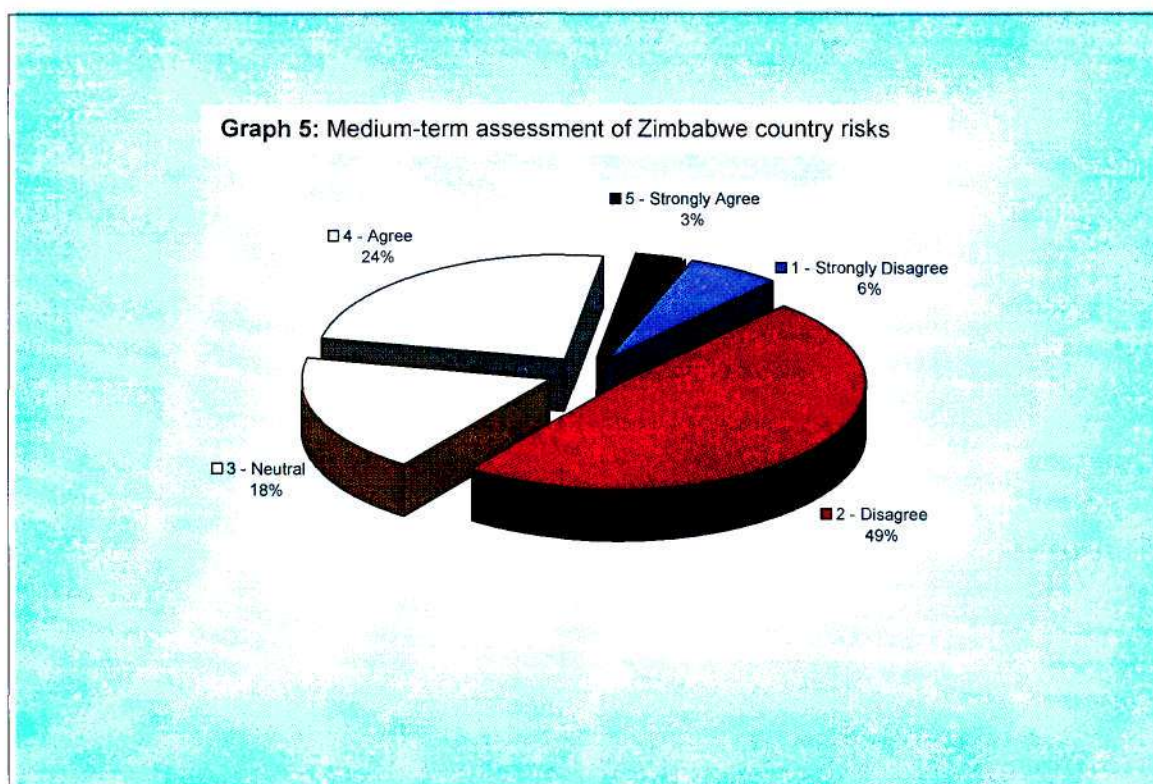
4.3.2a.1 Short-term (1-2) years?



Analysis

1. 82% (11, agree and 16-strongly agree) state that political risks in Zimbabwe will escalate and negatively impact on IMPLATS' earnings in the near-term. This may be related to negative assessment of the run-up to the upcoming legislative elections;
2. Only 12% (3 investors) disagree.

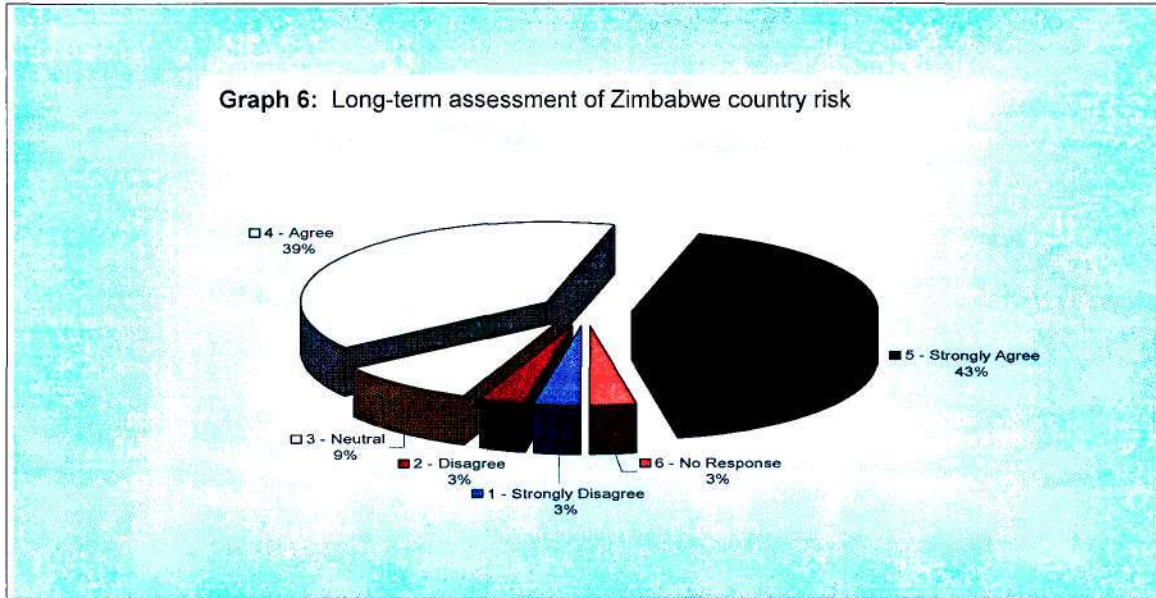
4.3.2a.2 Medium-term (3-4years)?



Analysis

1. 55% (2, strongly disagree and 16, disagree) disagree that political risks in Zimbabwe will escalate and negatively impact on IMPLATS' earnings in the medium-term;
2. 27% (8, agree and 1, strongly agree) agree;
3. Remarkably, a high percentage, 21% (6 investors) are 'unsure' about the political risk situation in the medium term. This may be attributed to the post election uncertainty where there is also hope that international intervention will improve the acceptance of election results. It could also be due to the statistical error in central tendency for respondents to rate most items in the middle due to insufficient subject knowledge or a dislike for extreme positions (Ehrenberg, 1989; Ross, 2000)

4.3.2a.3 Long-term (5) years +?



Analysis

- 82% (14, strongly agree and 13, agree) agree that political risks in Zimbabwe will escalate and negatively impact on IMPLATS' earnings in the long-term. This is an anomaly as the expectation would have been that in the long-term, political stability will return to Zimbabwe!

4.3.2b Correlation analysis : political risk and investors' trading behaviour

To what extent will your assessment of political risks in Zimbabwe and its impact on the returns to your holdings in IMPLATS influence your buy / hold / sell decision with respect to IMPLATS' shares, in the:

4.3.2b.1 Short-term (1-2) years?

Table 4: Short-term assessment of political risk impact on investors' trading behaviour

Response	No.	Buy	Hold	Sell	No response	Total	% of total
1 – No Impact At	19	0	19	0	0	19	56%

All							
2 - Negligible Impact	10	5	5	0	0	10	30%
3 – Some Impact	2	0	1	1	0	2	6%
4 – High Impact	0	0	0	0	0	0	0
5 - Significant Impact	0	0	0	0	0	0	0
6 – No Response	2	0	0	0	2	2	6%
Total	33	5	25	1	2	33	100%
% of total	100%	15%	76%	3%	6%	100%	

Analysis

1. 88% (19, no impact at all and 10 negligible impacts) say political risks in Zimbabwe have little or no impact on their trading with respect to IMPLATS' shares. The same investors therefore would hold on to IMPLATS' shares. To the extent that ineffective risk management erodes shareholder value (Coyle, 2002; Ernst and Young, 2001; James, 2003; Meulbroek, 2002; Sohnke, undated), from the investors perspective, these responses suggesting political risks in Zimbabwe will have little or no impact on investor trading decisions could very well constitute investor indecision, supportive of endowment effect (Thaler, 1980) – the tendency to procrastinate in decision making (Akerlof, 1991).
2. Only 6% (2 investors) say political risk has an impact on their trading plans with 50% (1 investor) saying they will buy more and the other 50% (one investor) intending to sell. Interestingly, 12% (4 investors) of the investors who intend to buy more shares are amongst the 16 investors who strongly agree that political risks in Zimbabwe will escalate in the short-term. This is possibly explained by representivity bias - a tendency for people to ignore the laws of probability in decision-making, replacing this with heuristics with the hope of yielding reasonable estimates which quite often fail (Kahnemann and Tversky, 1974). It may also be that these investors are investing for strategic and long-term purposes not related to current political risk situation in Zimbabwe.

3. Interestingly, 90% of the investors who agreed the political risks in Zimbabwe will escalate in the near term negatively impacting on IMPLATS earnings, also here say they will however hold on to the shares or buy more rather. This is possibly explained by disposition effect –the disposition to sell winners too early and ride losers too long (Shefrin and Statman, 1984). In other words, it possible that these investors believe given the political risks associated with their IMPLATS holdings, they are already in a position of loss and would rather be more risk-seeking in accordance with the loss aversion theory –the behavioural tendency to seek risk when faced with possible losses and to avoid risk when a certain gain is possible (Kahneman and Tversky, 1979).
4. 6% of the investors (2) did not respond to this question.

4.3.2b.2 Medium-term (3-4) years?

Table 5: Medium-term assessment of political risk impact on investors' trading behaviour

Response	No.	Buy	Hold	Sell	No response	Total	% of total
1 – No Impact At All	3	0	3	0	0	3	9%
2 - Negligible Impact	5	5	0	0	0	5	15%
3 – Some Impact	19	0	9	10	0	19	58%
4 – High Impact	4	0	0	4	0	4	12%
5 - Significant Impact	0	0	0	0	0	0	0
6 – No Response	2	0	0	0	2	2	6%
Total	33	5	12	14	2	33	100%
% of total	100%	15%	36%	43%	6%	100%	

Analysis

1. Only 19% (3, no impact at all and 5, negligible impact) say political risks in Zimbabwe have little or no impact on their trading with respect to IMPLATS shares. Interestingly, the same investors would hold on to IMPLATS' shares (3 investors) or buy (5 investors) more shares;
2. 70% (19, some impact and 4, high impact) say it has an impact on their buy/hold/sell decision with only 39% (9 investors) and 61% (14 investors) of these investors, intending to hold or sell-off IMPLATS shares, respectively;
3. Quite interestingly, about 55% of the investors who did not agree the political risks in Zimbabwe will escalate in the near term negatively impacting on IMPLATS earnings, say they will however sell their shares. Changes in investor wealth or routine portfolio rebalancing measures may explain this type of phenomenon (Goetzmann and Massa, 2003). Could also be that the shares were held for strategic reasons not related to short-term performance. The other 45% of investors who did not agree that political risks will escalate in the medium, negatively impacting on IMPLATS' earnings, would buy more instead. This supports the concept that a favourable assessment of risk improves on investor sentiment and hence company valuation (Coyle, 2000 and Ernst and Young, 2001);
4. 55% of the investors who say political risks will impact on their buy/hold/sell decision also say they intend to sell-off their shareholding. This suggests loss aversion and disposition effects have a threshold – risk tolerance / appetite beyond which investor confidence in a particular asset to yield the required return given its risk becomes negative (Coyle, 2000; Frost and O'Connell, 2003). Perhaps it also supportive of the view that disposition effect is stock-specific rather than a market phenomenon (Grinblatt and Han, 2002; Statman and Thorley, 1999).
5. Interestingly, all the investors 21% (7 investors) who are not sure (neutral) which way the political situation in Zimbabwe will go in the medium term say they would however go and ahead and trade by either buying or selling (none would hold however). The best possible explanation can be found in Kahnemann and Tversky's (1979) representivity bias theory – a tendency for people to *ignore the laws of*

probability in the decision-making, replacing this with heuristics, sometimes getting reasonable estimates but often not.

6. Six percent of the investors (2) did not respond to this question.

4.3.2b.3 Long-term (5) years +?

Table 6: Long-term assessment of political risk impact on investors' trading behaviour

Response	No.	Buy	Hold	Sell	No response	Total	% of total
1 - No Impact At All	0	0	0	0	0	0	0%
2 - Negligible Impact	0	0	0	0	0	0	0%
3 - Some Impact	2	0	2	0	0	2	6%
4 - High Impact	12	0	3	9	0	12	36%
5 - Significant Impact	17	0	1	16	0	17	52%
6 - No Response	2	0	0	0	2	2	6%
Total	33	0	6	25	2	33	100%
% of total	100%	0%	18%	76%	6%	100%	

Analysis

1. 100% (2, some impact; 12, high impact and 17, significant impact) of investors say political risks in Zimbabwe will impact on their trading with respect to IMPLATS' shares. Of these, only 18% (6 investors) will hold on to their shares, with 76% (25 investors) intending to sell off-their IMPLATS' holding. At least 84% disagree that the political risks will escalate in the long-term impacting on company earnings. Follow up telephonic interviews with 5 (all local) of the investors suggest two exogenous explanations:

- due to the cyclical nature of the mining industry, it is estimated that the commodity cycle will be adverse over this horizon as investors move into other industries with superior returns (80%, 4 investors);
- The other one investor (20%) indicate that given the five year time frame over which their performance is measured, they are optimistic about their IMPLATS holdings but will not keep it beyond their investment time horizon if it continues to perform at the current return, and likewise their AMPLATS holdings.

The above however suggests a possibility that the investors may have misunderstood the question as the focus was on the impact of political risk on their trading decisions. The expectation of the researcher was that factors such as commodity price cycle and investment horizon factors will be held constant.

4.3.2c Rationalization of investor trading behaviour

If your assessment of the impact of political risks in Zimbabwe on your buy/hold/sell decision with respect to IMPLATS shares is: 1 - no impact or 2 - negligible impact in the short-term, how you would best describe the basis of your judgment?

Table 7: Analysis of low impact trading behaviour despite high country risk

Considerations	1- Strongly disagree	2- Disagree	3- Neutral	4- Agree	5- Strongly agree
The political stability in Zimbabwe can only improve from now with upcoming legislative and presidential elections positively impacting on IMPLATS' earnings.	0	1	0	4	15
The returns from our IMPLATS holdings are sufficient to compensate for the risk associated with its Zimbabwe investments.	0	0	0	0	0
Our IMPLATS holdings are strategic in	0	0	0	2	7

consideration and do not really depend on the political situation in Zimbabwe.					
Other (please describe)	0	0	0	0	0
Total responses	0	1	0	6	22

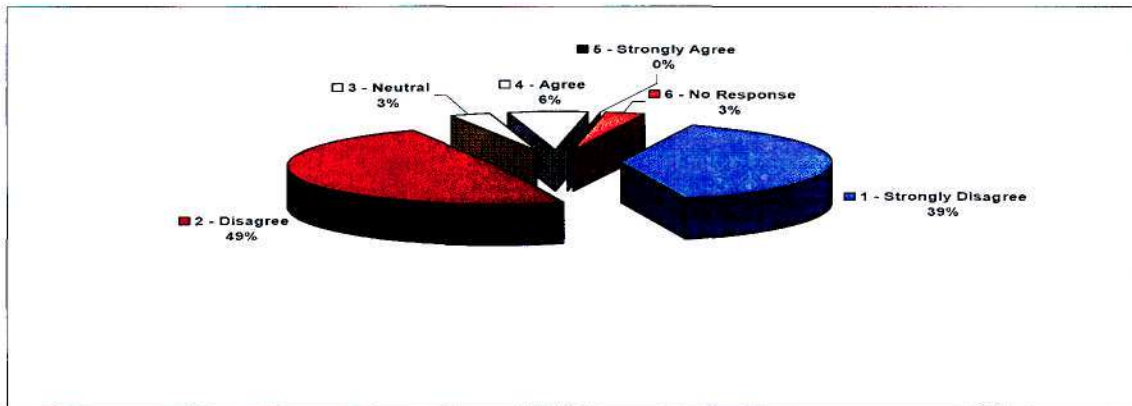
Analysis

1. At least 65% (4, agree and 15, strongly agree) of investors explain the short-term stability (i.e. little or no change) in their trading decisions on the basis of optimism that the political situation in Zimbabwe will improve. Interestingly, all the 19 investors who are hopeful about the political situation are amongst the 29 investors who believe IMPLATS' superior improvements in EPS and returns over AMPLATS' (see 4.3.2d below) does not adequately compensate for the risk associated with their investment. This is again strong evidence of the robustness of loss aversion theory (Kahnemann and Tversky, 1979). These investors probably believe they are already in a position of loss because IMPLATS' EPS and returns though superior to AMPLATS', do not adequately compensate for the risk associated with their holdings and hence they are tending to be more risk-seeking. Interestingly, it could also be interpreted differently using the same loss aversion framework—these investors are hopeful about the political risk declining in the short-term hence are potentially in a position of gain and therefore indicating that the little or negligible impact on their trading behaviour is a sign of risk-averse behaviour (Kahnemann and Tversky, 1979).
2. At least 30% (2 agree and 7, strongly agree) argue that their IMPLATS holdings are strategic rather than dependent on political risk in Zimbabwe. This could explain the take over risk IMPLATS' management is concerned about.

4.3.2d Risk-return expectations: Assessment of IMPLATS' value proposition

To what extent do you agree that the superior improvements in EPS and returns of IMPLATS over AMPLATS compensates for the risk associated with your investments in IMPLATS?

Graph 7: Risk and Return expectations : Assessment of IMPLATS' value proposition



Analysis

- 88% (13, strongly disagree and 16, disagree) do not agree that IMPLATS' superior EPS and ROI adequately compensates for the risk associated with their IMPLATS holdings. This is probably explained by the CAPM – a tendency for investors to require an increased minimum rate of return for assuming higher risks (Ward, 1996). It is also supportive of Shumway's (1997) loss aversion-based equilibrium asset pricing model which was also empirically validated by showing loss aversion induces investors to demand a higher risk premium associated with negative market returns (Coval and Shumway, 2000). This could very well also be interpreted in terms of money illusion. Fehr and Tyran (2000) argue that money illusion from a representation and framing effect perspective explains that alternative representations of the same objective situation from different frames of reference may well lead to systematically different responses. In other words, presenting IMPLATS returns using the PGMS sector (rather than Zimbabwe risk) as frame of reference and asking investors to determine if the returns from

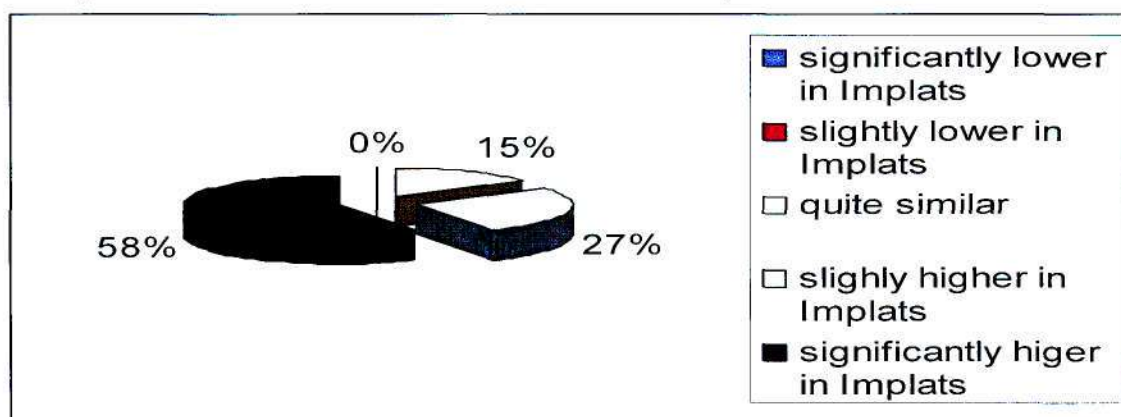
IMPLATS are better than AMPLATS may produce a different response as majority are likely to agree IMPLATS compensates for the risk better than AMPLATS (Graham *et al.*, 2004).

- Only 6% (2 investors) agree.

4.3.2e Overall assessment of risk: IMPLATS' compared to AMPLATS

Given IMPLATS' Zimbabwe investments, how would you overall, judge the level of risk associated with your investments in IMPLATS compared to AMPLATS?

Graph 8: Overall assessment of risk and return : IMPLATS' compared to AMPLATS



Analysis

1. 85% (9, slightly higher in IMPLATS, and 19, significantly higher in IMPLATS) of investors say overall, the risks of investing in IMPLATS are higher than in AMPLATS. This may be another illustration of money illusion from a representation and framing effect perspective (Fehr and Tyran, 2000)
2. Only 15% (5 investors) believe the risks are similar;
3. Interestingly, no investor believes the risks of investing in AMPLATS are higher than in IMPLATS. This suggests IMPLATS' valuation is still grossly dependent on negative investor sentiment about its Zimbabwe assets and that any attempt to boost IMPLATS' value should subject to the limitations of these findings, explicitly consider this factor.

4.3.2 Evaluation of strategy initiatives

To what extent do you agree that the following strategic initiatives (by IMPLATS) will enhance your rating of its shares and/or enhance your desire to invest more in the company?

Table 8: Evaluation of strategy initiatives

Group Strategic Initiatives	1	2	3	4	5
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
A New York Listing and enhanced USA presence.	6	4	2	6	15
Further simplification of corporate structure.	0	0	4	9	20
Continued superior operational performance versus competition.	0	0	0	2	31
Obtaining clarity and support from the Zimbabwean and SA government for expansions in Zimbabwe.	0	0	0	0	33
Finalisation of IMPLATS BEE transformation issues.	0	0	4	8	21
Additions to its non-Southern African resource base whilst remaining a pure play.	0	0	0	3	30
Related diversifying into other non-PGM but within the mining industry.	3	6	5	10	19
Diversifying into sectors outside the SA mining industry.	25	7	1	0	0
Raising of IMPLATS profile and creating a unique IMPLATS brand.	2	4	7	10	10

Analysis

1. All investors agree that the most important measure management must take to improve on valuation relates to the political risk situation in Zimbabwe. Investors are unanimous that IMPLATS' securing of clarity and support from the SA Zimbabwean government for expansions in Zimbabwe remains its number one imperative. Although it is generally supported by the majority of investors who believe political risk in Zimbabwe remains a significant concern (82% in the short-term and long-term, and whilst 52% disagree in the medium term), the absolute (100%) agreement that this should be the number one strategy consideration going forward is likely explained by the fact that this is presented relative to other strategy considerations rather than relative to Zimbabwe country risks and its impact on IMPLATS' earnings.
2. All investors (94% strongly agree and 6% marginally agree) agree that continued superior and operational performance versus its competition is IMPLATS' second most important strategic priority given its current situation;
3. All investors (91% strongly agree and 9% marginally agree) agree that additions to its non-Southern African resource base whilst remaining a pure play, should be its third most important strategy initiative;
4. There is consensus amongst 88% of investors that further simplification of corporate structure and finalization of BEE and transformation issues is IMPLATS' fourth most important strategic initiative if it is to grow its value. Finalisation of BEE and transformation issues however has a slight edge over simplification of the corporate structure with 21 investors strongly agreeing as opposed to only 20 investors in the case of corporate structure. Going by the literature review, this appears to be an issue for the whole industry rather than IMPLATS alone;
5. 85% of investors say related diversification (into other non-PGM but within the mining industry in South Africa) should be the sixth most important strategic consideration;
6. 64% believe a NYSE-listing and enhanced USA presence is IMPLATS' 7th most important strategic initiative to enhance its value and growth potential. However, up to 30% disagree. Interestingly, all 30% who disagree are local investors and 79% of the investors who agree are international investors.

7. 61% say raising IMPLATS' profile and creating a unique brand will help but 18% disagree whilst up to 21% aren't so sure. All 4 investors who disagree are local investors. It is possible that local investors are quite familiar with the South African corporate landscape and find the IMPLATS brand already well entrenched compared to international investors who aren't so familiar with the local brands –possibly the reason why international investors use criteria such as size and liquidity and less of brand to invest in SA resource stocks (Breakstone & Ruth, 2003).
8. 99% of investors say unrelated diversification is out of the question for IMPLATS. Any strategic consideration should therefore explicitly leave this option out.

4.4 Conclusion

In this chapter, the following were found and noted:

- Due to the ever shorter investment time horizons over which the performance of investment portfolios are measured, investors are increasingly depending on fundamental values projected into the period over which the performance of their portfolio is measured, more than using all the distant future earnings stream of a company as well as the quantity of ore reserves and mineral resources to value mining (resource) companies.

- Political risks have a very limited impact on investors' trading decisions in the short-term (1-2 years) but will have a significant impact in the medium term (2-4 years). In the long-term however, investor trading patterns is significantly correlated with the commodity cycle (80%) and the time frame over which investment portfolio performance is measured (20%) than with political risks in Zimbabwe. The investors who believe the political risks in that country have little or no bearing on their trading patterns ground this on the hopes that the outcome of the upcoming legislative elections and presidential elections will bring stability and the fact that their IMPLATS holdings are strategic rather than dependent on political risks. Investors believe the returns from their IMPLATS holdings, though superior in the sector, do not adequately compensate for the risk they take in holding IMPLATS and that overall, they assess the risks in IMPLATS much higher than in AMPLATS.
- The quality of interim and annual financial reporting is perceived to be similarly excellent in IMPLATS and AMPLATS as corroborated by the Ernst and Young survey. However, majority of the investors, especially the international ones, believe IMPLATS does a bad job communicating emerging issues affecting the company during the year. All the investors who believe management-investor relations is not as good as it ought to be are international investors. There is a wide discrepancy between the media currently used to provide information to IMPLATS' investors compared to what investors deem as convenient. There is however, broad consensus amongst investors regarding what they would like to see in order to improve on their ratings of IMPLATS.

As a meticulous analysis of the data did not reveal any statistically significant patterns between investor responses and style classification, it is obvious that whilst style possession has become crucial for participation in the global investment industry (IFE, 2001) as supported by empirical evidence that style classification influences share price movements, investor behavioural patterns remain broadly similar across holding style, at least with respect to the Zimbabwean country risk issue which dominates. This appears to be in line with the principle that investors broadly are seeking two objectives when they invest –divided yield and/or market appreciation of shareholding (Ward, 1996). *The*

researcher therefore questions whether style classification has any bearing on investment portfolio performance – this requires closer scrutiny in a future research.

CHAPTER 5

DEDUCTIONS & RECOMMENDATIONS

5.1 Introduction

In this chapter, the researcher applies significant judgment to the findings summarized in chapter four, reflecting on the literature review and making deductions and drawing conclusions useful in answering the three key research sub-questions. For each deduction and conclusion drawn, practical but literature-grounded recommendations are offered as strategy considerations to be integrated into IMPLATS' main corporate strategy and implementation design to contribute in resolving the main research problem. The chapter then explicitly recognizes that the findings, deductions and recommendations have major limitations before concluding.

5.2 Investment time horizons : Implications for company valuation

There is broad consensus that a typical investment time horizon over which investors' portfolio performance is measured is within a horizon of five years and that this time horizon influences investors' valuation of mining stocks. Investors generally agree that as result of the much shorter time frame over which the performance of their investment portfolio is measured they do not give as much weight to the quantity of ore reserves and mineral resources in valuing mining companies as suggested by literature. There is broad consensus as a result, that IMPLATS is valued much better than AMPLATS. It is obvious that investors are aware that it would take well over 20 years to convert all the ore reserves and mineral resources to earnings. Investors feel this long time horizon does not reconcile with the time period over which their investment portfolio performance is measured and hence, they in practice, tend to project current and historical earnings to a horizon equal to or shorter than five years to reconcile with the period over which their investment portfolio performance measured. This presents a major challenge to the theory that investors value a company by determining the present value of its future stream of earnings (discounting). It however aligns with the traditional concepts that 'what gets

measured gets managed' and 'what gets rewarded, gets done'. *The implication of this is that if you reward short-term performance, you obtain short-term results. It also supports the IMPLATS management assertion that quantity of ore reserves and mineral resources cannot explain the huge P/E multiple differential between the two companies.*

Recommendation. IMPLATS should begin looking for ways and means to grow its ore reserves and mineral resources base whilst sustaining its competitive cost advantage. This could however pose a challenge because ore reserves and mineral resources exist by nature and these are finite resources. Discovering of new reserves and resources, if available naturally, requires exploration spend, which again requires finance, which cannot be competitively raised due to its undervaluation problem. IMPLATS could also secure more reserves through M&As – specifically mergers as acquisitions will require more finance, the raising of which remains a problem for IMPLATS.

5.3 Political risks in Zimbabwe : Implications for company valuation and strategy

5.3.1 Short-term (1-2 years)

Over the short-term, investors believe the political risk in Zimbabwe is expected to escalate and impact on company earnings. Close to 90% of investors believe overall, IMPLATS is more risky than AMPLATS, principally due to the political risks associated with its Zimbabwe investments. Again, over 80% of investors do not believe that IMPLATS current earnings, though superior, already compensates for the risk related to their holdings. Whilst this to some degree is explained by money illusion (Cohen *et al.*, 2005; Fehr and Tyran, 2002), most investors do not intend to sell off their shares as a result of the riskiness of IMPLATS holding, largely explained by Shefrin and Statman's disposition effect and Kaynemann and Tversky's (1997) loss aversion theory. *This implies in the short-term, unless there is some bad news (see under/over reaction theory by Barberis, Shleifer and Vishny, 1997) worse than the investors current understanding of the political risks in Zimbabwe or from factors that add to that, there is very little likelihood of IMPLATS' share price declining any further as a result of political risks in*

Zimbabwe. In other words, investors have already priced this into its share prices (see the efficient market hypothesis, Brennan).

Recommendation. In the short-term therefore, an effective investor relations program will assist reduce information risk (bad news) that could impact on its share prices. However, an IR program can only help improve the flow of information to enhance the accuracy of its valuation. Whilst it can assist disseminate bad news within laid down corporate governance principles, to minimize damage to its share prices, it cannot prevent bad news from occurring. A robust and effective enterprise risk management program is therefore the company's surest means to minimize the risk of bad news. The key principle to follow is to always keep the investor fully informed, if there is bad news IMPLATS must proactively be the first to inform investors as allowing the media to find out could worsen investor sentiment even more and increase information risk or credibility discount. In the long-term, this will help build IMPLATS' reputation for transparency and openness which can only help improve on its credibility with the investors.

5.3.2 Medium-term (3-4 years)

Over the medium term, slightly over half of the investors believe the political risks in Zimbabwe will stabilize rather than escalate and impact on earnings whereas slightly over a quarter of a percentage of investors cannot quantify the risk. Remarkably, all investors who cannot quantify the risk do however, have a trading plan, possibly explained by the representivity bias factor (Kahneman and Tversky, 1997), with majority intending to sell. Whilst less than 50% (i.e. 42%) of investors will sell-off their IMPLATS holding in the medium-term, quite significantly, over 50% of the investors who believe the political risks in Zimbabwe affects their trading behaviour actually intend to sell-off IMPLATS as a result of this. *The deduction from this is that in the medium term, ceteris paribus, IMPLATS' share price is expected to decline if the political situation in Zimbabwe deteriorates any further. This clearly suggests political risk in Zimbabwe has played and will continue to play a major role in investors' valuation of IMPLATS relative to*

AMPLATS, with the highest impact to be felt over the medium term rather than immediately.

Recommendation. IMPLATS has no control over political risks (outcomes) in Zimbabwe. However, investors will be quite keen to assess how IMPLATS manages political risks going forward. The literature review evaluates a myriad of strategies (integrative protective/defensive techniques and joint ventures and alliances) IMPLATS can pursue, to manage this form of risk. Given that some of these strategies (mostly integrative) have already been pursued without much success and the fact that the Zimbabwean government has already demonstrated it cannot be relied upon to keep its agreements, whilst not abandoning its integrative strategies, the company has to shift emphasis to protect/defensive strategies, such as:

- As part of its option to conduct R&D from South Africa, the company should not heed to the calls to build a refinery in Zimbabwe. Doing so will not only increase the risk of expropriation but will negatively impact on the cost economies the company had hoped to achieve by entering Zimbabwe in the first place and this will obviously erode its competitive cost advantage as per unit costs will escalate. It is possible that the Zimbabwean government would pass beneficiation laws requiring mining companies to build refining capacity in Zimbabwe, posing a major challenge to implementing this recommendation. IMPLATS can however use its status as the major mining investor in that country to engage and ensure the government fully recognizes that imposing such laws will only scare off investors and compromise the government's other socio-economic objectives.
- IMPLATS cannot limit the role of local personnel to those operations that are not vital to running the facilities to ensure in the event of expropriation, locals would not be able to run the operations efficiently as most of the technology, training and innovation were already passed to ZIMPLATS after acquisition. The company can however, use its membership and influence in the International Platinum Association, to block sales if this possibility arises;
- IMPLATS can increase the gearing of its ZIMPLATS operations by converting its 84% equity stake to local debt, retaining only sufficient ownership. This will not only

reduce the impact of the ZIM\$ exchange rate fluctuations, on its earnings but also discourage the Zimbabwean government from expropriating assets in which Zimbabwean banks and locals also have significant stake. This will however, increase the risk of financial distress due to the interest expenses related to debt finance and could materially impact its value even further.

Whilst the above may provide sound strategies for IMPLATS, it the view of this researcher, that identifying , assessing and managing political risk remains a complex and controversial area of corporate strategy. Bockzo (2005) concurs, sophisticated macro and micro rating models exist to measure potential country risk but concedes that the desire of risk practitioners to quantify complex qualitative variables in financial terms limits the use of these techniques. Arguing *ibid*, that companies can adopt a range of social, economic and political risk-minimising strategies to deal with the impact of country risk, but given the increasingly competitive international business environment, most have to settle for strategies that limit, rather than eliminate political risk.

Another consideration for IMPLATS in the medium-term is to actively pursue a related diversification strategy to balance the risks of political instability associated with its Zimbabwe investments to ensure its portfolio of risks remains appealing to investors (Coyle, 2002).

5.3.3 Long-term (5) years +

Over the long-term, there is broad consensus amongst investors that the political situation in Zimbabwe will stabilize. *There is broad agreement that this will have an impact on trading behaviour but paradoxically that it will be a sell rather than a hold behaviour, as investors base their actions on the cyclical nature of the industry rather than political risk in Zimbabwe as well as by the investment performance measurement horizon factor. In the long-term therefore, the decline in share price of IMPLATS will be explained by factors other than political risks, as it is likely political risks would have been fully priced into investor sentiment.*

Recommendation. Continue to pursue a diversification strategy to balance the risks of political instability associated with IMPLATS' Zimbabwe investments to ensure the portfolio of risks remains appealing to investors. Ensure other related metals but with commodity cycles that complement rather than reinforce, the PGM commodity cycles is integral to this diversification strategy.

5.4 Rationalization of trading behaviour: Implications for political and take-over risk

About 65% (19 of the 29 investors) of the investors, in the short-term, base their trading decisions to hold and/or buy IMPLATS, irrespective of political risks in Zimbabwe on *expectations* that the outcome of the upcoming legislative (in three weeks) and presidential elections (in 2 years) in Zimbabwe will bring stability. This validates the concept that risk is assessed on the basis of variability around an expected outcome (Coyle, 2002). *Interestingly, slightly under 32% (9 of these 29 investors) base their trading behaviour on strategic rather than political risk considerations, of which 67% (6 investors) are local investors acting for local corporate clients. This clearly indicates the magnitude of take over risk that IMPLATS may be running as a result of its low share prices and attractive balance sheet.*

Recommendations – Take over risk. Recent corporate activity – e.g. the quest of even a much smaller company such as Harmony, staging a hostile takeover of Goldfields (Final Business day, 23/01/2005) in the SA mining industry has heightened the need to put in place and regularly update a takeover defence strategy, aimed at meeting any approach, probably hostile, but perhaps also friendly to acquire control of listed companies. Whilst continued superior performance that enhances the company's share price is IMPLATS' most important defence against predatory take-over, it is imperative that a formal and detailed take over defence strategy is designed, tested and approved by the board.

5.5 Strategy considerations

5.5.1 Prioritization of recommended strategy initiatives

In the order of priority, the following are the critical imperatives for IMPLATS to grow its value and position itself to meet its 2010 vision of becoming the world's best platinum producer, subject to the limitations of some of these as clarified above:

A. Immediately

A.1 Actively engage the South African and Zimbabwean authorities to obtain clarity about expansion plans in Zimbabwe whilst actively pursuing protective/defensive political risks management strategies;

A.2 Continue blending the core management disciplines as espoused in the literature review to maintain superiority over AMPLATS and the sector on operating and financial performance. Also sustain in the process, the current leadership on corporate governance. Increasingly, organisations rely on Information technology to enhance efficiencies and save costs. The current use of the balanced scorecard in IMPLATS does not set clear targets under the Learning and Growth perspective to manage how the company intends to sustain its growth by making use of Information technology. The company needs to investigate possibilities and invest in technologies that can blend well with its innovative people to drive further efficiencies in the business.

A.3 Improve on the company's IR strategy by implementing the following initiatives:

- Perfectly articulate corporate strategy to the markets supported by targeted media exposure on company initiatives on a regular basis and raise the company profile;
- Expand the American Depositor Receipts (ADR) programme in the US in the meantime whilst considering full US listing only in the medium term;

B. Short-term (1-2 years)

B.1 Remain a pure play (stick-to-the knitting), whilst expanding geographical diversity by adding to non-Southern African resource base. This can be done via M&As subject to carefully evaluating the restraints afore explained. It is important to re-emphasize at this point, literature review evidence which reveals 30% of M&As fail for reasons connected to empire building (Jenson, 1976) and lack of effective risk management and project management (IFAC). Without being overly critical, due to the benefit of hindsight, it is contended that the acquisition of ZIMPLATS did not follow sound principles related to the management of acquisitions. It is suggested that in implementing future M&As, the IFAC eight sequential step framework as reproduced documented in the literature review needs to be follow.

Other strategy considerations for the short-term include:

B.3 Simplify corporate structure and cut head office overheads whilst improving corporate office value adding effectiveness to underlying business units;

B.4 Focus on the effectiveness of strategic processes to conform with requirements under the mining charter by expeditiously finalising BEE and transformation issues.

C. Medium-term (3-4years)

C.1 Consider geographical related diversification within the strategic envelope, specifically only where core competence will add value;

C.2 Pursue a NYSE-listing and set-up investor relations offices in the US. This should also help improve the IMPLATS brand amongst international investors.

D. Long-term (5-years+)

D.1 Ensure the growth to 2010 is balanced and sustainable. This can be achieved by ensuring as the strategic trajectory evolves, the company has sufficient immediate and long-term growth opportunities that can transform it from a resource-constrained entity into a multi option group with a three-pronged long-term growth strategy that integrates:

- Mine-to-market
- Refining services; and

- Strategic investments.

A major impediment to the above however, is the executive compensation reward structure that appears to have a bias for short term performance. This needs to be reviewed for this recommendation to be effective.

5.6 Limitations of the findings and deductions

Besides the limitation posed by the methodological design as reviewed in chapter 3, a number of further limitations to the findings in chapter 4 and deductions in chapter 5 are worthy of note:

1. The study set out to have a 95% confidence and determined that a sample size of at least 96 investors was required. Given a response rate which was only 33%, it is possible that this may have affected the quality of the outcomes.
2. Capital asset pricing theories in general are developed and empirically validated from analysis of large pools of data across many different contexts to explain capital asset price dynamics. Using only one case - IMPLATS to verify the application of these theories in explaining its valuation problem, may be doing injustice to the *raison d'être* of these theories.
3. Though care has been taken to comprehensively, insightfully and critically analyse and interpret the data, given the geographical diversity of the research population thus making the conduct of face-to-face interviews impractical, the analysis can only be construed as the best possible speculation based on the comprehensive literature documented. Furthermore, the analysis ignores portfolio theory which suggests individual investments cannot be viewed simply in terms of their risk and return (Pike and Neale, 1993; Ward, 1996). In other words, the relationship between the returns from IMPLATS' holdings and the return from other investments in the investors portfolio, may be the major determinants of movements in the proxy (investors buy/hold/sell decision) rather country risks.
4. PwC (2003) found a range of non-financial value drivers which, in the view of this researcher, do not readily lend into any meaningful measures e.g. quality of management and partnering strategy. Though this study noted that there was no

significant difference in the quality of annual reporting in the two companies, it is possible that the proportion of investors suggesting that IMPLATS' management does not effectively respond to investor questions during results presentation may only be a 'tip of the iceberg.' However, as this question was not designed in comparison with AMPLATS, it cannot be determined if quality of management can be held constant in both companies.

5. The literature review used concepts like mean aversion and momentum to explain share price behaviour. These may provide a more robust explanation for IMPLATS valuation problem, irrespective of investor sentiment about country risks in Zimbabwe.
6. The study recommendations as well as the stratification thereof is grounded on the assumption that investors' have a 'perfect' view about the future direction of strategy. In practice, management has many other stakeholders whose interests will influence strategy (Johnson and Scholes, 2002) and taking only the investors' view of strategy can itself provoke further valuation problems in the long-run arising from governance failures. Furthermore, the literature review recorded a number of instances where there were huge discrepancies between how investors perceive risk and management thereof as well as the value drivers in the mining industry, and the views of management. To the extent that investors' views might be incorrect or uninformed, it is possible that implementing the recommended strategies will not necessarily resolve IMPLATS' undervaluation problem.
7. In all, implementing most of the strategy considerations will most likely require change management across IMPLATS which by implication is not easily accepted. Due to the fact that management likes to 'stick to their knitting' ('conservatism') (Pascale, cited in Watkins)) irrespective of the fact that such great strength would inevitably culminate as the root of weakness, may be unwilling to change.
8. The study title refers to the South African mining industry but the focus was only on the platinum sector. The above findings therefore cannot be generalised to the mining industry as a whole.
9. Furthermore, Creswell (1994) posits that in research, the direction or strength of a relationship are not readily determined as the exogenous and endogenous variables

are not readily distinguishable. This study explicitly assumed that investor sentiment is the endogenous variable and set out to *establish how it influences IMPLATS' share prices*. The study cannot claim to have exhausted all the explanations for IMPLATS' valuation problem. Without diminishing the significance of the findings, quite frankly, a number of complex considerations (off the scope of this research), may very well also contribute to the problem, such as:

- AMPLATS is 50% owned by Anglo America whilst there is no single controlling influence in IMPLATS. It is possible that AMPLATS' other shareholders would find their AMPLATS investment less risky as a result and would consequently rate it better than IMPLATS; and
- It is also possible that AMPLATS' hitherto NYSE listing and IR program may be a variable in contributing to its superior P/E ratio;

5.7 Conclusion

In this chapter, the following key issues were noted

- IMPLATS' management's view that that its competitive disadvantage relative to AMPLATS on quantity of ore reserves and mineral resources, in the face of persistently superior overall fundamental values, should not justify the significant p/e differential between the two companies was validated. It was recommended however that given the relative ease with which its cost strategy can be replicated compared to its ability to compete on reserves, IMPLATS should implement measures to build reserves whilst seeking new avenues to build efficiencies across its value chain and attempt to move to a cost quartile not easy to replicate without significant investment and time.
- Investors' trading patterns arising from their assessments of political risks will have very little impact on IMPLATS' valuation in the short-term (1-2 years) but will pose a major problem on its valuation in the medium-term (3-4 years). In the long-run, the impact will be even more severe, but for reasons not correlated with political risks in Zimbabwe. The tendency for some investors to hold onto IMPLATS despite political risks and irrespective of the term (short-term, medium or long-term) suggests take over risk. In the short-term, IMPLATS needs to continue improving on its

fundamental values whilst crafting a take over defence strategy. It also needs to improve on its investor relations program to robustly communicate its political risk management strategy ongoing and other bad news that may emerge. In the medium term, management needs to implement non-integrative/defensive political risks management strategies. However, due to time lag between the implementation of strategy initiatives and their effects, engagement of the SA and Zimbabwean governments, continuous improvement in fundamental values and a massive overhaul of IMPLATS' investor relations strategy are the most immediate measures to be undertaken. Other measures in the short-term, medium-term and long-term were also summarised. These findings and deductions then informed the researcher's conclusions in the next chapter of this report (Chapter 6 - Report Conclusion).

CHAPTER 6

REPORT CONCLUSION

6.1 Introduction

In this chapter, the researcher puts the results in perspective i.e. in the context of the research objectives and investigative questions (Watkins, 2004), demonstrating how the project contributes to resolving IMPLATS' valuation problem and taking it to its 2010 strategic trajectory. Contradictions between theory and empirical evidence are then highlighted serving as a valuable ground for future search.

6.2 The results in perspective

In this study, the researcher set to answer the main research question: *How does investor sentiment explain the poor valuation of IMPLATS compared to AMPLATS, on the JSE Securities Exchange?* In respect of this, three investigative questions closely linked to the specific research objectives, were asked:

6.2.1 What is the importance of the quantity of ore reserves in explaining IMPLATS' valuation problem?

At least 88% of investors state that the performance of their investment portfolio is measured over a horizon of five years or less and at least 97% of these investors state that this is a stronger driver of their valuation of mining stocks than quantity of reserves. 82% of investors as a result, state that they value IMPLATS more than AMPLATS. It is obvious that investors are knowledgeable that AMPLATS' superiority over IMPLATS on reserves will require in excess of 90 years to convert into earnings. They tend to believe IMPLATS' reserves which are sufficient for 30 years, is equal to AMPLATS at least as far as the time horizon over which their portfolio performance is measured is concerned.

The importance of quantity of reserves therefore has very limited importance in explaining IMPLATS' valuation problem.

This conclusion effectively achieves the first specific research objective: *To determine the extent to which AMPLATS' superiority over IMPLATS on the quantity of ore reserves and mineral resources explains IMPLATS' current valuation problem.*

6.2.2 How does investor sentiment relating to the risks associated with IMPLATS' Zimbabwe investments impact on its valuation?

Investor sentiments regarding country risks associated with IMPLATS' Zimbabwe investments has a limited impact on investors' trading decisions in the short-term (1-2 years) but will have a significant impact in the medium term (2-4 years). In the long-term however, investor trading patterns is significantly correlated with the commodity cycle and the time frame over which investment portfolio performance is measured than with country risk factors. At least 90% of the investors who rate IMPLATS poorly on key aspects of its IR strategy are international investors.

The conclusion from this is that investor sentiment regarding Zimbabwe country risks significantly contributes to the undervaluation of IMPLATS' p/e ratio, and more so in the medium term (2-3 years) than in the short-term and long-term. IMPLATS' international investors play a much bigger role in contributing to its undervaluation problem.

This conclusion effectively achieves the second specific research objective: *To assess the implications of investor sentiments relating to the country risks associated with IMPLATS' Zimbabwe operations on its valuation.*

6.2.3 What considerations for strategy should IMPLATS adopt to improve on its value and achieve its 2010 growth objective?

The research examined a number of strategic issues affecting the SA mining industry with specific emphasis on the PGMs sector, providing a range of options **Stratified into: Immediate; Short-term; Medium-term & Long-term strategy considerations -**

- **Immediate**

- **Shorter-term**
 - ✓ Continue sticking to the knitting whilst expanding geographical diversity to add to non-Southern African resource base via M&As;
 - ✓ Simplify corporate structure; and
 - ✓ Expedite finalization of BEE and transformation issues.

- **Medium-term**
 - ✓ Pursue a related geographical diversification within the strategic envelope; and
 - ✓ NYSE-listing and enhanced US presence.

- **Long-term**
 - ✓ Ensure the growth to 2010 is balanced and sustainable by ensuring the company has sufficient growth opportunities to transform from a resource constrained entity into a multi-option group.

The above effectively achieves the last specific research objective: *To examine the strategy initiatives available to IMPALA PLATINUM HOLDINGS to improve on its valuation and achieve its 2010 vision.*

- ✓ Continue delivering on fundamental values;
- ✓ Improve on IR strategy.
- ✓ Actively engage the SA and Zimbabwean authorities to obtain clarity about expansion plans;

By achieving all three specific research objectives above, the main research objective: To explore the implications of investor sentiment for IMPLATS valuation and provide strategy recommendations to improve its market rating whilst sustaining its competitive strategy as a platform for achieving its 2010 vision, was achieved.

6.3 Recommendation for future research

A number of contradictions and challenges to theory (Cooper *et al.*, 2001) emerge, worthy of future research. These include:

- Theory suggests quantity of reserves is a critical ingredient in valuing resource companies. The study finds this is only critical if the reserves can be converted into earnings within the investment horizon period over which investors' portfolio performance is measured. A key question to guide future research here should be: *Does the time horizon over which investment portfolio performance is measured supersede the quantity of reserves in the valuation of resources companies? What factors make this so?*
- The loss aversion theory and disposition effect explained human (investor) behavior but did not recognize that a threshold to this behavior exists. Other researchers do not appear to have recognized that at some threshold, loss aversion and disposition effect may fail to explain investor behavior i.e. when investor confidence (or risk appetite / tolerance) is reached and beyond which these concepts are no longer tenable. A key future research question should be : *What factors define the threshold at which loss aversion and disposition effect reach zero at which point these no longer explain investor (or say human) behavior?*
- Theory and empirical evidence suggests investment holding style influences capital asset prices. This study observed that there is no correlation between style classification and investor behavior, under similar risk conditions. The key future research question is: *Does investment holding style define investor behavior under similar risk conditions?*
- Kaplan and Norton (1996) suggest the balanced scorecard cascading process should be top-down. This appears to be in line with companies pursuing an environmental based strategy. It would seem for the resourced-based strategy, a bottom-up approach should be the logical process. A key future research question

is: *Should the balanced scorecard not be more effective following a bottom-up process for organizations with a resource-based competitive strategy?*

- Theory suggests fundamental values determine company valuation but concedes that investor sentiment also plays a crucial role. Neither theory nor empirical evidence exists to support the time period over which improvements in fundamental values relative to a benchmark will commensurately improve company market values. A key future research question therefore should be: *What factors influence how long it takes for improvements in fundamental values to translate into comparative improvements in market ratings and vice versa?*

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Appendix 1 : Glossary of Terms

Average Growth	The arithmetic average of the year-on-year percentage change.
Beta	This is a measure of the inherent riskiness / volatility of a share relative to a benchmark. <i>Ceteris paribus</i> , the higher the beta the more risky / volatile the given share price. Beta is calculated against the JSE All Share index for all shares using month-on-month data over 36 months to the end of each financial period. It is important to note that a low Beta does not mean a firm's risk is low in absolute terms but that the shares market related risk is low.
CashFl: AttPrft	Cash generated by operations / retained income + dividends – extraordinary profit * 12/number of months. Measures the quality of the attributable profit. The higher the ratio is above 1, the higher the quality of the attributable profit.
Current Ratio	Current assets / current liabilities. The degree to which the company can pay near term debt within a short space of time.
D : E	Long-term debt + short-term debt – interest-free debt/ total shareholders interest. The degree to which shareholders' funds cover interest-bearing debt. A measure of leverage / financial gearing or riskiness of a company
Dividend Cover	Earnings per share / Dividends per share. The degree to which dividends declared are covered by earnings. Gives an idea of a company's ability to maintain dividend payouts in poor years (a low ratio means dividends might have to be reduced in a poor year). Also gives an indication of the earnings retained to grow the business.

Earnings (EPS)	Attributable income before extraordinary items but after exceptional items / weighted number of shares in issue * 100. This shows the per share earnings of a company.
Headline Earnings (HEPS)	Ordinary earnings with exceptional items and their tax effects stripped out. It gives a reflection of the sustainable earnings of a company, i.e. earnings ability had exceptional items not occurred., e.g. profit on the disposal of capital assets.
Interest Cover	Profit before interest and tax (after exceptional items) / net interest paid. The degree to which the company's operating income can pay the interest bill –important for highly geared companies.
IntDebt : TotAss	Total long-term Interest-bearing debt + short-term interest-bearing debt + Bank overdrafts / total assets. Measures solvency ratios and it's a significant ratio when interest rates are high.
ISO 9000 accreditation	An internationally recognized certification that the processes adopted in producing an organisation's products meet world class standards and that the final products can be relied upon by customers and stakeholders for world class quality.
Liquidity	Also called free float percentage, it refers to the percentage of a company's issued shares that has changed hands since the period up to the last financials.
Liquidity%	Cash generated by operations / total long-term debt + current liabilities. Measures the extent to which total assets exceed the operational liabilities of a company.
Mineral resource	A concentration or occurrence of material of economic interest in or on earth's crust in such form and quantity that there are reasonable and realistic prospects for eventual

economic extraction. The location, quantity, grade, continuity and other geographical characteristics of a mineral resource are known, estimated from specified geological evidence and knowledge, interpreted from a well-constrained and portrayed geological model. Mineral resources are subdivided in order of increasing confidence in respect of geoscientific evidence, into inferred, indicated and measured categories.

- **Inferred mineral resource** –That part of a mineral resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed, but not verified, geological and/or grade continuity. It is based on information gathered through appropriate techniques from outcrops, trenches, pits, workings and drill holes that may be limited or of uncertain quality and reliability.
- **Indicated mineral resource** –That part of a mineral resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on exploration, sampling and testing information gathered through appropriate techniques from outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological and/or grade continuity but spaced closely enough for continuity to be assumed.
- **Measured mineral resource** –That part of a mineral resource for which tonnage, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling

and testing information gathered through appropriate techniques from outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity

NAV per share	Ordinary shareholders' interest / number of shares in issue * 100. Also called the per share value of shareholders funds including retained earnings. The ratio of share price to NAV gives an indication of the market's confidence in the company. The higher the ratio, the higher the confidence.
Output (oz)	Ounces of PGMs produced. Equivalent to the Yield multiplied by Tons milled.
Op Pft Mgn	Net operating income / turnover * 100. The return on the operating business of the company -including abnormal items, but excluding extraordinary items, and before interest, tax, and investment income. Net operating income is operating income adjusted for abnormal items.
Ordinary shares in issue	Represents the total actual shares in issue at the end of the period, not weighted average.
Ore reserves	<p>The economically mineable material derived from a measured and/or indicated mineral resource. It includes diluting materials and allows for losses that may occur when it is mined. Appropriate assessments which may include feasibility studies, have been carried out, including consideration of, and modification by, realistic mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. Ore reserves are subdivided, in order of increasing confidence, into probable and proven ore reserves.</p> <p>Probable ore reserve -The economically mineable material derived from measured and/or indicated mineral resource. It is estimated with a lower confidence level than</p>

a proved ore reserve. It includes diluting materials and allows for losses that may occur when material is mined and appropriate assessments consistent with ore reserve principles have been carried out.

Proven ore reserve –The economically mineable material derived from measured mineral resource. It is estimated with a high level of confidence, includes diluting materials and allows for losses that may occur when material is mined and appropriate assessments consistent with ore reserve principles have been carried out.

P/e ratio	A measure of a company's value. This is extensively dealt with within the study.
Price Received	Rand price received per oz of platinum sold. This is not necessarily in relation to the spot prices as some companies have hedging programmes that are more effective than others.
Profitability%	Profit before interest and tax – extraordinary items / total assets * 100 * 12/number of months. Measures the performance of management at an operational level.
Ret on SH Fnd	Attributable income after extraordinary items + outside shareholders interest / total shareholders interest * 100 * 12/number of months. Measures the return on share capital and reserves.
Ret on Tot Ass	Working profit + sundry revenue + investment income + tribune income – net interest paid + income from associates / total tangible assets * 100 * 12/number of months. Gives an indication of the sustainable return on the revenue-generating assets of the company.
Solvency%	Total assets / total long-term debt + current liabilities. The extent to which total assets exceed operational liabilities of a company.

Appendix 2 : Survey instrument

Dear investor.....

This questionnaire is for the purpose of MBA research. Your responses will be marked confidential and will only be revealed with your prior written consent. It will take you less than 15 minutes to complete. Please do so and return to the researcher at mellyl@ranbaxy.co.za or by fax to 012-643-2001

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Company name of investor.....Region/Continent.....

Investment holding style.....

**Importance of dividends / capital gains in your IMPLATS holdings (Figures in %)
(Only approximations)**

0/100%	25/75%	50/50%	75 / 25%	100 /0%
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A. INVESTMENT TIME HORIZONS AND PERFORMANCE MEASUREMENT

As an investor, the performance of your portfolio is measured by your plan sponsors / clients and /or superiors. (For the purpose of the following questions, time horizon is defined not in terms of the frequency of your investment portfolio performance appraisals but in terms of the period plan sponsors and/or clients typically define as part of contract over which they seek to achieve their targets).

A.1 Over what investment time period (horizon) is the performance of your portfolio typically used as a basis to measure your performance (Please mark X –one only):

1	2	3	4	5
0-1 year	1-2years	2-3years	3-4year	4-5years

A.2 If non of the above, please mark an (X) on appropriate investment time horizon below:

6	7	8	9	10
6-10years	11-15years	16-20years	21-25years	25+ years.

A.3 To what extent does your response in A.1 and A.2 above influence your current valuation of mining (resource) company stocks based on quantity of ore reserves and mineral resources (Please mark X –one only).

1	2	3	4	5
No influence	Negligible influence	Neutral	Some influence	Significant influence

A.4 How does your response in A.3 above influence your valuation of IMPLATS’ compared to AMPLATS’ shares on the Johannesburg Stock Exchange (Please mark X –one only).

1	2	3	4	5
Much better	Better	Neutral	Better valuation of	Much better

valuation of AMPLATS	valuation of AMPLATS		IMPLATS	valuation of IMPLATS.
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B. ASSESSMENT OF POLITICAL RISKS IN ZIMBABWE

B.1. The country (political) risks associated with IMPLATS' Zimbabwe investments is so serious and expected to escalate, negatively impacting on its future earnings. To what extent do you agree with this assessment in the:

- **Near-term (0-24 months i.e. within 2 years)** *(Please mark X –one only)*

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

- **Medium-Term (25-48 months i.e. 2-4 years)** *(Please mark X –one only)*

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

- **Long-Term (48+ months i.e. 5 years & over)** *(Please mark X –one only)*

1	2	3		5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

B.2 To what extent will your views on B.1 above impact on your buy / hold / sell decision with respect to IMPLATS' shares; over the following economic periods:

- **Near-term (0-24 months i.e. within 2 years)** *(Please mark X –one only)*

1	2	3	4	5
No Impact at all	Negligible impact	Some Impact	High Impact	Significant Impact

And what will be your decision : Buy(**B**), Hold(**H**) or Sell(**S**) – **Encircle 1** (As applicable to your impact choice above).

1			2			3			4			5		
B	H	S	B	H	S	B	H	S	B	H	S	B	H	S

- **Medium-Term (25-48 months i.e. 2-4 years)** (Please mark X –one only)

1	2	3	4	5
No Impact at all	Negligible impact	Some Impact	High Impact	Significant Impact

And what will be your decision : Buy(**B**), Hold(**H**) or Sell(**S**) – **Encircle 1** (As applicable to your impact choice above)

1			2			3			4			5		
B	H	S	B	H	S	B	H	S	B	H	S	B	H	S

- **Long-Term (48+ months i.e. 5 years & over)** (Please mark with an X –one only)

1	2	3	4	5
No Impact at all	Negligible impact	Some Impact	High Impact	Significant Impact

And what will be your decision : Buy(**B**), Hold(**H**) or Sell(**S**) – **Encircle 1** (As applicable to your impact choice above)

1			2			3			4			5		
B	H	S	B	H	S	B	H	S	B	H	S	B	H	S

B.3. Rationalization of investor trading behaviour

Respond to questions B.3 below, only if you marked 1-No impact at all and/or 2 – negligible impact in the short-term, in respect of question B.2 above:

Which of the following best describes your judgement *(Please tick 1 only)*

Considerations	1	2	3	4	5
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
The political stability in Zimbabwe can only improve from now with upcoming legislative and presidential elections positively impacting on IMPLATS' earnings.					
The returns from our IMPLATS holdings are sufficient to compensate for the risk associated with its Zimbabwe investments.					
Our IMPLATS holdings are strategic in consideration and does not really depend on the political situation in Zimbabwe.					
Other (please describe)----- ----- ----- -----					

B.4. Risk-return expectations *(Please tick 1 only)*

It is often said the higher the risk the higher the required rate of return on any investment. IMPLATS has outperformed the PGMs sector over the last five years on improvements in its financial and operating performance. To what extent do you agree that the consequent superior EPS and returns compensates for the risk associated with IMPLATS' investments in Zimbabwe? *(Please mark X –one only).*

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

B.5. Overall assessment of risk : IMPLATS compared to AMPLATS'

Given IMPLATS Zimbabwe investments, how would you overall, judge the level of risk associated with your investments in IMPLATS' compared to AMPLATS *(Mark X – one only):*

1	2	3	4	5
Significantly lower in IMPLATS	Slightly lower in IMPLATS	Quite similar	Slightly higher in IMPLATS	Significantly higher in IMPLATS

C. STRATEGY CONSIDERATIONS

C.1 Strategy initiatives

To what extent do you agree that following strategic initiatives will enhance your rating of IMPLATS' shares and/or enhance your desire to invest more in IMPLATS (Please mark with an X –one only).

IMPLATS group strategic initiatives	1	2	3	4	5
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
A New York Listing and enhanced USA presence.					
Further simplification of corporate structure.					
Continued superior operational performance versus competition.					
Obtaining clarity and support from the Zimbabwean and SA government for expansions in Zimbabwe.					
Finalisation of IMPLATS BEE transformation issues.					
Additions to its non-Southern African resource base whilst remaining a pure play.					
Related diversifying into other non-PGM but within the mining industry.					
Diversifying into sectors outside the mining industry.					

Raising of IMPLATS profile and creating a unique IMPLATS brand.					
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C.5 Please provide any general comments regarding your views about IMPLATS, your evaluation of its future performance relative to AMPLATS and the PGMs sector in your investment portfolio:

.....

THE END.

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE. YOU WILL RECEIVE A SUMMARISED VERSION OF OUR FINDINGS TO IMPROVE ON YOUR PORTFOLIO ALLOCATION PROCESSES IN THE NEAR FUTURE.

Appendix 3 : Ethical Clearance Certificate

RESEARCH OFFICE (GOVAN MBEKI CENTRE)
WESTVILLE CAMPUS
TELEPHONE NO.: 031 – 2603587
EMAIL : ximbap@ukzn.ac.za



7 DECEMBER 2006

MR. M LOUW (203520040)
GRADUATE SCHOOL OF BUSINESS

Dear Mr. Louw

ETHICAL CLEARANCE APPROVAL NUMBER: HSS/06842A

I wish to confirm that ethical clearance has been granted for the following project:

“Exploring the impact of capital structure & investor sentiment on corporate performance: A case study of the South African Mining Industry”

Yours faithfully

MS. PHUMELELE XIMBA
RESEARCH OFFICE

cc. Faculty Office (Christel Haddon)
cc. Supervisor (Prof. S Lubbe)

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