THE VALUATION OF THE MANAGEMENT BUY-OUT

OF

AN UNLISTED COMPANY

(A case study)

BY

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CONFIDENTIALITY NOTE

Due to the sensitive nature of the information regarding the company and the buyout, I would like the Graduate School of Business, Faculty of Management, University of Natal, Durban, to note that the information herein should be treated as confidential. Use/Reproduction of any information should only be done after consent from the directors of the company.

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ABSTRACT

This research is a 'case study' analysis on Flint Construction cc, which has undergone a management buy-out. Flint Construction cc specializes in the construction and restoration of surface and underground rail systems, the sale and purchase of perway materials (rails, sleepers, etc) and general civil engineering construction.

The objective of the study is to determine the value of Flint Construction cc using the relevant valuation techniques discussed in the literature. Different valuation techniques are analyzed and utilized in order to ascertain the value of the business at the time of the buyout. These include using models such as Price-earnings (earnings valuation model), balance sheet valuations (assets valuation model), discounted free cash flows model (DFCF model), and the economic value-added model (EVA model).

This study is a 'case study' and is limited to Flint Construction cc, and we therefore cannot generalize. Further, the study is conducted on an unlisted company, and it is difficult to obtain information, which is not publicly available. Other unlisted companies would probably be reluctant to disclose financial information. However, an interview was conducted to obtain data on strengths, weaknesses, opportunities, threats, subjective risk adjustments and perceptions of Flint Construction cc which were used in the valuation using P/E ratios, estimation of future cash flows and the EVA method.

The Price-earnings (earnings valuation model), discounted free cash flows model (DFCF model), and the economic value-added model (EVA model) reveal that the business was sold at a 'fair' value of R3 million. The range for Flint Construction cc obtained from the different valuation methods excluding the net asset value method was from R2,450,403 to R3,106,880. A further study can be undertaken to see what happens to company value after a buyout and whether shareholder value is created.

DECLARATION

I declare that this research report is my own, unaided work, unless specifically indicated to the contrary in the text. It is being submitted in part fulfillment for the degree of Master of Business Administration at the Graduate School of Business, University of Natal, Durban. It has not been submitted before for any degree or examination in this or any other university.

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Chandradeep Maharaj

This the_____day of_____2003.

ACKNOWLEDGEMENTS

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ABBREVIATIONS / SYMBOLS

β	Beta
CAPM	Capital Asset Pricing Model
CGT	Capital Gains Taxation
DFCF	Discounted free cash flow method
EBIT	Earnings before interest and taxes
g	growth rate
JSE	Johannesburg Stock Exchange
K_d	Cost of debt capital
K_e	Cost of equity capital
NAV	Net asset value
P/E	Price/Earnings ratio
R_f	Risk-free rate
R_m	The return on the market
VAT	Value Added Tax
WACC	Weighted average cost of capital

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1. INTRODUCTION

The idea that the entrepreneurial forces unleashed by management buy-out's could provide an explanation for high returns and the fact that Flint Construction cc has been in the situation where a management buy-out was actually undertaken, led to the idea of management buy-out's as a research topic.

One of the most significant events that may occur in the life of a company is a complete change of ownership. In the case of purchase by existing management or other employees the transaction is also one of vital significance to those individuals who may be largely responsible for the inherent goodwill of the business. The management team and its employees are directly implicated in the negotiations. They stand to gain or lose according to the success of the transaction. Their jobs, future earnings, and personal wealth are at risk. Further, the success of the transaction will even determine the very existence of the company. A Management Buyout (MBO) is where the managers of a business become its owners or shareholders. According to Ball (1992) Management Buyouts became a common occurrence in the early 1980's.

To determine if a 'fair' value was obtained in the management buyout of Flint Construction cc, different valuation methods are used in valuing the company. "Valuation can be approached from a number of different perspectives. It is akin to the facets of a diamond, which may look different depending on how it is viewed. All perspectives must eventually be aggregated into one number reflecting value, which is then compared to the price. If the value is greater than price, that is a signal to buy or hold. If the value is lower than price that is a signal not to buy. Two significant perspectives are commonly used. The first is to attach values to the underlying physical assets and then estimate the value of the intangible assets if appropriate. The second is to attempt a prediction of the future cash flows which will be generated by the assets and then to discount those future cash flows at the appropriate rate of required return, given the perceived risk of holding those assets" (Flynn, 1997:362).

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A third method is to use the P/E ratio. "The P/E ratio, or price earnings ratio, is the ratio of the current stock price to last year's earnings per share" (Bodie et al, 2002:45). The P/E ratio tells us how much stock purchasers must pay per Rand of earnings that the firm generates.

The problem statement is as follows:

There has been a management buy-out at Flint Construction cc, and a price has been paid for the company. Was the price that was paid for the company a fair price? Did the seller of the company get a fair price on the sale of the company?

1.1. Background

Entrepreneurial businesses are undoubtedly an important part of our economy. Furthermore, they employ a large percentage of our working population. An essential ingredient for success is an understanding of how these businesses operate, and how the continuation of operations is implemented.

Flint Construction cc specializes in the construction and restoration of surface and underground rail systems, the sale and purchase of perway materials (rail, sleepers etc) and general civil engineering construction. Formed in 1990 with an initial business focus on Northern Natal, the company's professionalism and wide experience resulted in dynamic growth and Flint Construction is now a significant presence throughout Sub-Saharan Africa. The company is based in Rosetta in the KwaZulu-Natal Midlands, with site offices in Cato Ridge, Newcastle, Klerksdorp, Carltonville and Boksburg.

Flint Construction cc originated as a specialist in the repair and construction of surface rail systems. More than a decade later, the company's ability to ensure safe and efficient rail systems for transportation is valued by clients throughout Africa. Flint Construction's client base includes leading companies such as Assmang, Anglogold and SA Sugar Terminals. Flint Construction cc first moved into underground operations four years after the launch of the company, and demand has grown to the extent that underground construction now accounts for an estimated 65% of the company's workload throughout

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Africa. Flint Construction is currently upgrading approximately 60 kilometers of underground track each year for different clients on an ongoing basis.

Flint Construction cc has a management structure that is built around four regional contract managers, who are fully responsible for the administration and client liaison of each project. They are supported by a skilled technical team of approximately 15 site and area managers.

The mission of the company is to enhance the competitive edge of its clients through performance excellence of its staff. The moderate size of the company dictates a management style emanating directly from the corporate member who implements the company policy of responsibility and authority, and the overall control of quality and excellence – the foundation for the management of the business, and the keystone of the goal of customer satisfaction. Flint Construction cc has been in existence for approximately 12 years, currently has approximately 600 employees and has been successfully run by one man, Mr. K.G. Flint.

Mr K.G. Flint has reached a crossroad in deciding what option to take in order for the close corporation to continue operations, and has decided to sell the company to the management team. "A valuation is the process of arriving at a value for an asset expressed in monetary terms. The value of an asset is the present value of expected future benefits, usually represented by cash flows discounted at the required rate of return" (Correia et al, 2001:184). This may seem simple, however one must realize that to a certain extent valuation requires a certain amount of crystal ball gazing. There will always be uncertainty in valuing a share and therefore a company's worth. This is due to the fact that what an investor is prepared to pay for a share depends on what will happen in the future.

The value of the firm was arrived at using crude methods of valuation. This study will look at the various valuation techniques and provide the seller, Mr K.G. Flint with a range of values to determine whether he received a 'fair' value on the sale of the company.

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1.2. Objectives

It is the objective of this study to value Flint Construction cc.

Although every sale and purchase negotiation is different, four basic valuation methods are considered, as possibly the most appropriate.

- *Assets Valuation Model:* The assets valuation model assumes that a company is worth the value of its net assets as shown in the Balance Sheet. This value will be ascertained in order to arrive at a valuation of Flint Construction cc.

- *Earnings Valuation Model:* This model is based on the premise that the company's value can be expressed as a multiple of its earnings. Price/earnings ratios will be looked at and compared to that of a listed company with similar operations, and the average of the construction sector on the Johannesburg Stock Exchange (JSE).

- *Discounted Free Cash Flow Model:* This model is based on excess or free cash flows. The free cash flows will be calculated after preparing a statement of future cash flows.

- *Economic Value Added Model:* The economic value added model values a firm by calculating the spread between Return on Assets (ROA) and the opportunity cost of capital multiplied by the capital invested in the firm.

Specifically, the objective of this study is:

- To value Flint Construction cc using the most appropriate techniques in order to determine whether the price paid was reasonable or 'fair'.

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1.3. Research Context

This study is a case study based on Flint Construction cc and the valuation processes to determine the appropriate value of the company. The study uses the different valuation methods discussed in the literature to determine the value of the company. A company in the similar industry is selected to do comparisons based on their annual financials, over the last five years. The listed company to compare against is selected from the Johannesburg Stock Exchange (JSE), based on similar sector or industry and type of operations conducted.

1.4. Structure

Chapter One: Introduction
This chapter is an introduction to the topic and the objectives, hypothesis and the entire approach to the study. The limitations of the study are also discussed.

Chapter Two: Research Methodology
This chapter covers the aspects of the population that will be surveyed and the type and methods of data collection.

Chapter Three: Literature Review
Chapter three covers an extensive review of management buy-outs and the different methods of valuation.

Chapter Four: Data Analysis, Results and Discussion
Chapter four presents the results of the analysis of data in the form of tables, graphs, ratio analysis, the different valuation methods and comparisons with a listed company with similar operations.

Chapter Five: Conclusion and Recommendations
This final chapter contains the conclusion of the research results, and recommendations for future research areas on the topic.

1.5. Hypothesis

To hypothesize techniques used in valuations:

1. The price paid to Mr K.G. Flint was reasonable or 'fair', in light of the valuation performed.
2. In light of the theoretical literature based on perfect markets and perfect information, although there are imperfections in the real world, there will not be substantial differences in the valuation methods used when valuing Flint Construction cc.

1.6. Benefits Of The Study

One possible benefit is to demonstrate that there may be a most appropriate method of company valuation when considering a management buy-out in Flint Construction cc. Clearly, it is imperative that such a company should continue its existence into the future. One option or proposal that was put forward is that the management of the company be given an opportunity to buy-in. Therefore, I believe that by me doing research on the topic, it will aid my company and other similar companies out there in considering and successfully concluding a management buy-out.

Further, the study will benefit the owner, Mr K.G. Flint in comparing whether he received a 'fair' price for the company; when comparing the amount he has received to the values calculated by the different valuation techniques used in this research.

1.7. Limitations of the Study

There are numerous factors affecting a company's value. The company's historical performance, its size and influence relative to its competitors, the perceived quality of its management, advances in technology and changes in the political and economic environment are all factors that may influence investors in their valuation process.

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This study is limited to Flint Construction cc. It is a case study and we therefore cannot generalize. Further, the study is conducted on an unlisted company, and it is difficult to obtain information, which is not publicly available. Other unlisted companies would probably be reluctant to disclose financial information.

Further, it would be a difficult task to find information of unlisted companies where a management buyout has occurred. There was only one listed company from the JSE within this industry that could have been used for providing the estimates, because of the specialized nature of operations i.e. railway construction and maintenance. A further limitation to the study is that there is difficulty in estimating goodwill and intellectual capital of Flint Construction cc.

2. RESEARCH METHODOLOGY

2.1. Population

"A population is the total collection of elements about which we wish to make some inferences" (Cooper & Schindler, 2000:163). In this study, Flint Construction cc is the element about which we wish to make some inferences. Flint Construction cc is the company that has undergone a management buy-out. It will be compared to another similar listed company on the Johannesburg Stock Exchange (JSE) that is Aveng.

2.2. Sample & Sampling

"The basic idea of sampling is that by selecting some of the elements in a population, we draw conclusions about the entire population" (Cooper & Schindler, 2000:163). The sample and sampling frame will be Flint Construction cc (as this is a case study). The listed company needed for comparisons will be selected using the following criteria:

- Listed on the stock exchange - JSE
- Construction sector
- Narrow sector, similar operations i.e. railway construction and maintenance.

The reason for using a listed company to compare against was the easy access of data.

2.3. Research Design

"Case studies place more emphasis on a full contextual analysis of fewer events or conditions and their interrelations" (Cooper & Schindler, 2000:137). "A case study may be defined as an extensive study of a single situation such as an individual, family or organization." (White, 2000: 39). Both desk research and field research will be carried out. Desk research will focus on examining the literature. Field research will use a case study approach by observing and interpreting what is going on in Flint Construction cc

and comparing it to a listed company with similar operations. Financial Data will be collected for Flint Construction cc and a similar listed company called Aveng.

2.4. Technique of Survey

Data collections were conducted by means of an *interrogation/communication study*, i.e. via a personal interview, with Mr K.G. Flint. The interview was conducted with Mr K.G. Flint to obtain data on strengths, weaknesses, opportunities, threats, subjective valuation on P/E ratios, and estimation of future cash flows. Further, data was collected from the annual financial statements of Flint Construction cc and Aveng and newspaper articles.

2.5. Questionnaire & Questions

A questionnaire was drawn up to gather the primary data. In general, research must be designed so a respondent does not suffer physical harm, discomfort, pain, embarrassment, or loss of privacy. Data collection began by explaining to the respondents the benefits expected from the research. A structured questionnaire with open-ended questions was developed in order to gather more sensitive data about the company, and to assess Mr Flint's opinion about the future in order to ascertain the value of his shareholding.

2.6. Measurements

Measurement in research consists of assigning numbers to empirical events in compliance to a set of rules" (Cooper and Schindler, 2001:203). The following will be utilized:

- Basic financial statements-the Balance Sheet and Income Statement
- Ratio Analysis-a means by which individual business performance is compared to similar businesses in the same category.
- The Pro Forma Statement of Income-a method used to forecast profitability. Free Cash flows (FCF's) will be used adjusting for depreciation.

- Resources at the library and from Information resource companies will also be acquired, for secondary data.

The goal of this formal research design is to answer the questions posed, which are:

- Was the price that was paid for Flint Construction cc reasonable or 'fair'?
- In spite of the theoretical literature based on perfect markets and perfect information, in the real world are there substantial differences in the valuation methods used when valuing Flint Construction cc?

2.7. Reliability (Alpha), Validity

The interviewer must ensure that answers given to the questionnaire are recorded accurately especially in the case of a one-on-one interview. The way in which the interviewer asks the question and the body language of the interviewer can affect the outcome and **validity** of the interview. The questionnaire on P/E ratios and forecasting of future cash flows was a self-administered questionnaire.

In designing the instrument for the purpose at hand one must ensure that the questionnaire, interview guideline or whatever instrument is used is not ambiguous or misleading. The wording of the questions should be simple and easy to understand.

The criteria of *validity, reliability* and *practicality* are relevant. *Validity* is "the extent to which differences found with a measuring tool reflect differences among respondents being tested" (Cooper & Schindler, 2001:210). In this context **criterion-related validity** must be ensured. We want to predict an outcome and estimate the existence of a current condition. In Flint Construction cc, we want to be able to predict future cash flows, and the P/E ratio. Cooper & Schindler (2001) suggests that any criterion measure must be judged in terms of relevance, freedom from bias, reliability and availability. In order to be reliable the questionnaire should avoid factors that have a high probability of being variable.

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Reliability

In order to improve reliability the external sources of variation must be removed. For example the interview or questionnaire should be directed to only one person at a time, free from influence from a friend or family member.

Practicality

Practicality deals with the issues of economy, convenience and interpretability. It is important that the instrument used to measure data is easy to administer with clear instructions set out. Cooper & Schindler (2001) sets out clearly the guidelines that need to be adhered to when considering whether the data collection instrument ensures that the results are interpretable. Further, a measure meets the criterion of practicality if it is economical, and convenient. In this case study, the questionnaire does meet these criteria because only one person, Mr K.G. Flint is interviewed personally, at the office and it is therefore economical and convenient.

3. LITERATURE REVIEW

This section will examine the literature on the management buy-out's (MBO) process, and on different valuation methods available. I have come across a study done by Mr. RD Ball - An Empirical Analysis of Management Buy-Out's In South Africa and Their Effect on Financial Performance and Shareholder Wealth. (1992)

I have considered his future research recommendations and have found an important part lacking in his thesis i.e. the valuation process when considering a management buy-out to reach an agreeable purchase price. Management buy-outs are defined as: "...the acquisition of the outstanding (controlling) outside interest in the firm by an incumbent management group" (Gunay, 1987,1). A management buy-out is a transaction by means of which a team of professional managers acquires a substantial holding in the company. Usually the managers are already in the employ of the company, but it can also be a team of managers unconnected with the company being acquired, which is referred to as a 'buy-in'. In a management buy-out a key ingredient of success is the quality and timeliness of advice, which requires a balanced blend of professional skills applied in accordance with a planned and coordinated strategy. A common feature of buy-outs is that the managers contribute a relatively small part of the consideration required by the vendors, and end up having a substantial equity interest in the company.

Bull (1987,63) differentiates buyouts into two distinct categories. The first, which are often the more highly publicized, are those where companies are acquired then resold in segments, commonly referred to as 'asset stripping'. The second category is where no major divestitures occur in the post-buyout period. The only material difference in the pre- and post-buyout companies is the shareholders, which now comprise of former management. I will be focusing in my research on the second category (as that is what I believe to be a more common type of buyout and that is the type of buyout that is being undertaken in the Flint Construction).

It is very interesting to note that the management buy-out became very popular in South Africa during the latter half of the 1980's. A contributing factor to this popularity was the

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politically inspired disinvestments from South Africa by foreign multinationals. The management buy-out was seen as a favorite conduit for disinvestments from South Africa because it allowed multinationals to withdraw without having to completely sever their links or to close their operations.

3.1. An overview of management buy-outs

"Recession at the end of the 1970's undoubtedly catalyzed the inevitable reversal of the trend for 'largeness' toward the new philosophy that 'small is beautiful'. The driving forces for change have been primarily the need for conglomerates to be flexible in the face of changing market conditions, to shed their unprofitable activities or those activities, which do not 'fit' or logically complement the group, and the powerful human need for motivation and identification with an enterprise of which employees can feel a part. Recession encourages these forces by providing potential entrepreneurs with a rare combination of two key ingredients for success: a vendor willing or needing to sell and a price which reflects contingent costs of dissolution and redundancy, and which frequently may be lower than the book value of net assets to be acquired. The government, too, has actively sought to encourage the smaller enterprise, and although the fiscal law affecting buy-outs is far from simple, there is no reason why, by careful planning, it should prevent a successful buyout." (Hardman et al, 1987: 2) Hardman et al stated that there was a trend for larger companies in the 1970's to move towards being 'small', which was encouraged by the recession.

Morris (1982) goes on to say that although the movement towards 'smallness' was encouraged, the ratio of borrowed money to the personal assets of the borrowers were dangerously high. "The concept of enterprises being formed into smaller, more human and more manageable units, of managers having the incentive of a meaningful stake in the prosperity they create, rightly enjoys considerable support. It has, moreover, great popular-even political-appeal. The doubts which have been expressed in general terms about such deals have been largely concerned with management adequacy-when a team of technocrats lacks a financial expert and falters through inadequate accounting reports and controls-or the appropriateness of the capital structure. Sometimes when the

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businesses being bought are large compared with the personal resources of the buyers and they insist on majority ownership, the ratio of borrowed money is dangerously high" (Morris, 1982: 29).

"However, many management buy-outs are at the instigation of the parent company, which decides strategically that it needs to reduce the range of its involvements or change strategic direction. Then, rather than sell the subsidiary to another large group, it may even offer the middle managers deferred payment terms to split off on their own. Everyone gains as the erstwhile parent concentrates its management efforts on the more closely related activities and frees itself of extraneous distractions. Even with payment for the divestment deferred, the seller will probably achieve and be able to show in its reported results a better return on its assets, reducing its vulnerability to a take-over" (Morris, 1982: 29). "By letting Nature take its course through the markets, the disease of megamerger megalomania produces its own antidote, with managers as vital antibodies" (Roberts, 1987: 121-122). It can be seen from the above that it was preferable to sell the business to managers on less onerous terms, than offer the business for sale to other large companies.

If Flint Construction was advertised for sale, it could have affected the contracts that the company currently has, and the perception by clients and prospective clients of the company's stability. The situation described above by Morris (1982) is similar to the circumstance that arose in the case of Flint Construction cc.

"To 'go public' and become a listed company is major step for a firm. The substantial sums of money involved can lead to a new, accelerated phase of business growth. Obtaining a quotation is not a step to be taken lightly; it is a major legal undertaking. The Stock Exchange rigorously enforces a set of demanding rules and the directors will be put under the strain of new greater responsibilities both at the time of floatation and in subsequent years. New issues can produce a greater availability of equity finance to fund expansion and development programmes, which may allow companies to gain entry to new product markets. It may also allow borrowing to be reduced and existing shareholders to realize a proportion of their investment" (Arnold, 1998: 387). The

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owner/seller chose to rather sell the business to its key management team, rather than advertise it for sale on the market, or offer it to a larger company.

From Appendix 9 it can be seen that the costs of listing is quite expensive. Flint Construction cc average annual turnover over the past five years is approximately sixteen million Rands. The listing fees would be in the range of R7,746.30 to R 23,993.58 (excluding VAT of 14%). "This listing fee would have to be paid annually in order to maintain the listing on the stock exchange. Upon listing, the company is bound to comply with the listings requirements of the JSE. These requirements impose requirements on the company beyond those required under the Companies Act. Complying with these requirements can be expensive in terms of cost and management time. Listed companies can be sanctioned by the JSE, if they breach the listings requirements" (http://www.jse.co.za). In terms of minimum turnover, Flint Construction meets the requirements to list on the Johannesburg Stock Exchange. Appendix 9 highlights the various costs with regards to listing a company on the stock exchange.

"Financiers (whether the seller or third parties) of an MBO will require evidence that the MBO will generate sufficient positive cash flows to repay the initial borrowings. Accordingly, the future market prospects and potential of the business must be sound and able to be credibly set on paper before a formal approach is made for the necessary finance" (Power, 1991: 67).

Power (1991: 67) lists the objectives of financiers when considering buyouts:

1. A pre-determined minimum return on capital invested, which will either be interest on the amount loaned and/or dividends on equity participation.
2. The repayment of the capital during the term of exposure.
3. If equity is acquired, a satisfactory capital gains on the investment when it decides to sell, albeit in the future.
4. The earnings of the business must be sufficient to amortise the debt as soon as reasonably possible.

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5. The business must have an adequate financial structure with effective, appropriate and efficient controls.

6. An established track record is required in order to give credibility to future projections.

7. The business must be relatively debt-free.

8. An established management team must be in place which can meet the following criteria:

    a. Have the necessary skills and confidence in the future to run the business.

    b. Be fully motivated.

    c. Have the necessary financial backing or the potential to obtain it.

    d. Be willing to put their personal assets at risk to demonstrate their commitment.

    e. Understand fully the implications of the financial position and the necessity of generating cash to meet the repayment commitments.

    f. Have sound financial management and

    g. Be prepared to put their commitment in writing. They will require security for loans (collateral). Shares held by management are often pledged until the loan has been repaid. Alternatively, management, instead of taking up shares at the outset, only have an option to acquire shares when the loan has been repaid.

9. The business must be well established and not reliant on untested products, or any major and potentially uncertain source of supply.

10. The business must preferably dominate its market sector.

11. The business must be able to stand by itself and be able to operate on its record and rely on cutting costs, retrenchments, asset stripping, etc to meet its cash flow forecasts.

12. The terms of payment must allow for repayment of the debt without straining the company especially in term of rising interest rates or high inflation when working capital demands may be onerous.

13. Supplies of raw materials or products should be available from secure sources at a cost within economic projections.
14. Long-term selling arrangements with guaranteed quantities, with firm price escalations are desirable.
15. There should be a reasonable chance of exploiting growth potential.

Point seven is of interest. Flint Construction cc was not relatively debt-free, yet the MBO was successfully concluded. Point eight is important because the company does have a very strong and committed management team. Further, the business is well established and has a niche' market. There is also a huge opportunity for growth for the company, both locally and abroad.

According to Hardman et al (1987), the market leader in venture capital financing, 3i, reported a failure rate for management buyouts of about 10%. This low failure rate can be attributed to the fact that the businesses being acquired were established ones with experienced management.

3.2. When might a buy-out be appropriate?

According to Hardman et al, the option of a management buy-out will arise in the following frequently met circumstances:

a) "A conglomerate group plans to dispose of subsidiaries or divisions. Large groups of companies, which are often highly geared, seek to make 'strategic disposals'. A large group may find that it has diverse activities, which do not fit with its core activities. Disposals also may be made when certain parts of the enterprise yield the parent a less than acceptable return on its investment. Recessional influences may encourage a 'slimming-down' strategy in the interests of greater efficiency and group cohesion" (Hardman et al 1987: 2).

b) "Realization of assets by a liquidator or receiver. This category is the same as discussed in (a) above, but negotiations will take place with a liquidator or receiver than with the former owners or representatives" (Hardman et al 1987: 2).

c) "Private company shareholders wishing to realize their investment. This type of buy-out occurs where shareholders wish to convert their investment into cash on nearing retirement, or where the executors of a deceased shareholder need to realize the shares. Such buy-outs also arise through the initiative of existing management, who may only have a minority interest, to buy-out apathetic or dissident shareholders" (Hardman et al 1987: 2).

Point (c) is very relevant because the owner of Flint Construction cc was approaching retirement, and he reached a crossroad on what to do in order to continue the activities or operations of the business.

Hardman et al (1987) suggests a list of criteria conducive to a buy-out, in pre- buy-out circumstances:

Motivation of the managers:

- A wish to control their destiny and more directly reap the rewards of their labors.
- A wish to make decisions free of intra-group political or bureaucratic constraints.
- The buy-out is seen as a means of saving the jobs of themselves and the workforce.
- The buy-out is seen as a means of continuing to use existing skills, which may not be required in the changing environment of a large group.
- An unwillingness to accept a prospective change of ownership.
- Business ownership expected to increase personal status in the community.

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Characteristics of the buy-out team:

- High degree of commitment to the prospective new enterprise.
- Possess strong entrepreneurial instincts.
- Aware that as a team they are essential to the success of the enterprise.
- Confident in their ability to fully control the enterprise.
- Not too large in number, able to make decisions.
- Able to take personal risks.
- Individual members of the team receive moral support from their immediate families.

Financial considerations:

- Members of team willing to commit a significant part of their personal resources to the new company (possibly using personal assets as security).
- Team members are possibly recipients of redundancy compensation.
- Members of team willing to accept lower standards of living in the short term.

Some of the above criteria are applicable to the buyers (management) of Flint Construction cc. The managers have a high degree of commitment, are aware that as a team they are essential to the success of the enterprise, they are not too large in number (only five), and are willing to take personal risks.

Unquoted companies may have an unswerving commitment to preserve their independence and emphatically reject any approach whatsoever. Only an important event such as the death of a key director or substantial shareholder or a major disagreement between the people involved may prompt a change of attitude towards the subject of acquisition. In Flint Construction cc, it is the nearing of retirement for the owner of the business.

Pearson (1983) emphasizes that many companies respond more positively towards acquisitions:

- If the next generation of the family is not capable of managing the business, or unwilling to do so, then approaching retirement may prompt a sale of the company.

- A common problem of the successful unquoted company wishing to expand is a shortage of funds. The shareholders are often reluctant or unable to provide more equity capital themselves, and borrowings are probably at a realistic limit already. Selling the company, and retaining the management team may provide a solution. This is the situation in Flint Construction cc.

- Some shrewd unquoted companies will recognize that performance has peaked, or is about to, and will set out to 'sell at the top'.

It is very interesting to note that the management buy-out became very popular in South Africa during the latter half of the 1980's. A contributing factor to this popularity was the politically inspired disinvestments from South Africa by foreign multinationals. The management buy-out was seen as a favorite conduit for disinvestments from South Africa because it allowed multinationals to withdraw without having to completely sever their links or to close their operations.

3.3. MBO's in the South African Context

Power (1991:65) says that the incidence of MBO's in South Africa has increased dramatically during the past few years following the trend in Europe and America. Overseas holding companies have found it to be a convenient method of meeting disinvestments pressure. He goes on to say that whilst most MBO's in South Africa have been disinvestments, there have been local buy-outs as well.

3.3.1. Taxation Consequences

"Broadly speaking an execution of a buyout by management can be by either purchasing shares or assets of the company. In the event of the assets being purchased, it could be all of the assets or of only selected assets" (Ball, 1992: 98).

The various taxation consequences concerning a buyout that needs to be considered are:
- Income Tax
- Value Added Tax (VAT)
- Other Transaction Costs Further, the recent introduction of Capital Gains Taxation (CGT) must also be taken into consideration.

According to Retief & Goosen (2003) the company income tax rate in South Africa is currently 30% and this will be used in the calculations for firm valuation. " If you are an owner of small businesses, you have been given a special dispensation when you sell your businesses to retire. The purpose is to provide relief to small business owners who have invested their resources in their businesses in order to build up retirement capital. It does not matter whether the small business is held directly or whether it is a company, close corporation or partnership" (Retief & Goosen, 2003: C01/029).

Retief & Goosen (2003:C01/029) go on to explain, " The capital gain or loss on the business is disregarded under the following conditions:

- The market value of the assets of the business does not exceed R5 million
- You hold at least 10 percent of the share capital
- You have been substantially involved in the operations of the business
- You have held ownership or shares for a continuous period of at least five years.
- You have attained the age of at least 55 years or the disposal is in consequence of ill health, other infirmity, superannuation (retire from service on a pension) or death.

- The total exemption under this dispensation is limited and may not exceed R500, 000 in your lifetime. The dispensation is cumulative and not in respect of each business asset disposed of.
- All capital gains from the sale of your businesses must be realized within two years from the date of the first disposal."

From the above the market value of the assets of Flint Construction cc does not exceed R5 million and the disposal is in consequence of ill health of Mr K.G. Flint. Therefore, CGT will be disregarded in this case analysis. There are income tax consequences that would need to be taken into account when valuing Flint Construction cc. Strategic issues would now be discussed to determine the perceptions on risk of the company.

3.4. Modigliani & Miller (MM) theory applicable to the case study

"According to an important 1961 paper by Modigliani and Miller (MM), if a few assumptions can be made, dividend policy is irrelevant to share value" (Arnold, 1998: 818). In other words, they proposed that in a perfect world, the policy on dividends is irrelevant to shareholder wealth.

The following are assumptions or conditions in which the Miller and Modigliani irrelevancy proposition was held to be true:

1. There are no taxes
2. There are no transaction costs
3. All investors can borrow and lend at the same interest rate
4. All investors have free access to all relevant information.

However, Arnold (1998) says that it has been argued by Myron Gordon that investors perceive more distant dividends, as subject to more risk therefore they prefer a higher near-term dividend ('Bird in the hand'). Bodie et al (2002) reports that according to Modigliani and Miller, neither the firm's dividend policy or its capital structure should affect the value of a share of its equity. He says that the reason underlying the MM theory

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is that the intrinsic value of the equity is the present value of the net cash flows to the shareholders that can be produced by the firm's existing assets plus the net present value of any investments to be made in the future. This leads on to the free cash flow approach, which is one of the methods we will be using to value Flint Construction cc.

"This approach starts with an estimate of the value of the firm as a whole and derives the value of the equity by subtracting the market value of all non-equity claims. The estimate of the value of the firm is found as the present value of cash flows, assuming all-equity financing plus the net present value of tax shields created by using debt" (Bodie et al, 2002: 587). Bodie et al (2002) goes on to say that this approach is similar to that used by the firm's own management in capital budgeting, or the valuation approach that another firm would use in assessing the firm as a possible acquisition target.

Arnold (1998) reports that a theory was developed by Modigliani and Miller which said that it did not matter what the gearing level of a firm is – the overall value of the firm is constant and shareholder wealth cannot be enhanced by altering the debt to equity ratio. "As the proportion of debt is increased, the cost of equity will rise just enough to leave the WACC constant. If the WACC is constant then the only factor which can influence the value of the firm is its cash flow from operations" (Arnold 1998: 791). This theory was later modified to exclude the 'no tax' assumption. Arnold (1998) says that after modification of the 'no tax' assumption, a different conclusion was reached which is that the best gearing level for a firm interested in shareholder wealth maximization is generally high as possible.

In a paper by Fernández (1999), he addresses the valuation of firms by cash flow discounting. The first part shows that the four most commonly used discounted cash flow valuation methods (free cash flow discounted at the WACC; cash flow available for equity holders discounted at the required return on the equity flows; capital cash flow discounted at the WACC before taxes; and Adjusted Present Value) always give the same value. All the methods analyse the same reality under the same hypotheses; they differ only in the flows used as the starting point for the valuation. (http://www.fernandezpa @iese.edu)

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This study will attempt to value Flint Construction cc for the management buyout purpose using the free cash flow method as one of the methods of valuation, for buyout purposes (in order to see if Flint Construction cc was sold at a 'fair' price).

3.5. Ratio Analysis

"Ratio analysis is undoubtedly the most popular of all analytical techniques" (Flynn, 1997:143). Ratio analysis follows the four steps as outlined below in Table 1, (reproduced from Flynn, 1997: 140) and may be defined as the selection of two line items which have a meaningful relationship and expressing that relationship as a ratio. This will be performed to provide inputs into our valuation of Flint Construction cc.

SELECT	What is the purpose of the analysis?
	What are the appropriate tools to use?
COMPARE	With other companies
	With previous years
	With the industry
	With budgets
	With ideal targets
EVALUATE	Is it good or bad?
	Was the result expected?
	If bad, why?
	If good, maintainable?
	Who/What is responsible?
PREDICT	What is likely to happen if no action is taken?
	What improving action is possible?

Table 1: Ratio analysis outlined by a four-step process.

Return on capital Employed (ROCE)

"Any acquisition will require a return and inevitably any company paying a poor dividend or producing a poor return will attract those who think they can buy low and do better" (Inman, 1992: 3).

Return on capital employed (ROCE) most commonly known as Accounting Rate of return (ARR) has a wide variety of different methods of computation. According to Lumby (1998:47), it is calculated as the ratio of the accounting profit generated by an investment project to the required capital outlay, expressed as a percentage. He says that normal practice is to calculate profit after depreciation but before any allowance for taxation, and to include any increases in working capital that would be required if the project were accepted.

ROCE = [Net profit + Interest x (1-Tax Rate)]	x	**100**
Capital employed		1

Return on capital employed is calculated by using only the long-term capital and attempts to measure the net profit after tax, but before the providers of long-term capital have been rewarded.

Financial Leverage Ratio's

"Financial leverage enables a firm to have an asset base larger than its equity. The firm can augment its equity through borrowing and the creation of other liabilities like accounts payable, accrued liabilities, and deferred taxes. Financial leverage increases a firm's ROE as long as the cost of the liabilities is less than the return from investing these funds. In this respect, it is important to distinguish between interest-bearing liabilities such as notes payable, other forms of short-term debt and long-term debt, which carry an explicit interest charge, and other forms of liabilities" (Palepu et al, 2000: 9-14).

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"Some of these other forms of liability, such as accounts payable or deferred taxes, do not carry any interest charge. Other liabilities, such as capital lease obligations or pension obligations, carry an implicit interest charge. Finally, some firms carry large cash balances or investments in marketable securities. These reduce a firm's net debt because conceptually the firm can pay down its debt using its cash and short-term investments. While a firm's shareholders can potentially benefit from financial leverage, it can also increase their risk. Unlike equity, liabilities have predefined payment terms, and the firm faces risk of financial distress if it fails to meet these commitments. There are a number of ratios to evaluate the degree of risk arising from a firm's financial leverage" (Palepu et al, 2000: 9-14).

"A company's financial leverage is also influenced by its debt financing policy. There are several potential benefits from debt financing. First, debt is typically cheaper than equity because the firm promises predefined payment terms to debt holders. Second, in most countries, interest on debt financing is tax deductible whereas dividends to shareholders are not tax deductible. Third, debt financing can impose discipline on the firm's management and motivate it or reduce wasteful expenditures. Fourth, it is often easier for management to communicate their proprietary information on the firm's strategies and prospects to private lenders than to public capital markets.

Such communication can potentially reduce a firm's cost of capital. For all these reasons, it is optimal for firms to use at least some debt in their capital structure. Too much reliance on debt financing, however, is potentially costly to the firm's shareholders. Debt holders also impose covenants on the firm, restricting the firm's operating, investment, and financing. Managers' attitude towards risk and financial flexibility also often determine a firm's debt policies" (Palepu et al, 2000: 9-16).

$$\textbf{Debt-to-equity} = \underline{\textbf{Short-term debt} + \textbf{Long-term debt}}$$
$$\textbf{Shareholder's equity}$$

$$\textbf{Interest Coverage (earnings basis)} = \underline{\textbf{Net income} + \textbf{Interest expense} + \textbf{Tax expense}}$$
$$\textbf{Interest Expense}$$

"The first ratio restates the assets-to-equity ratio (one of the three primary ratios underlying ROE) by subtracting one from it. The second ratio provides an indication of how many dollars of debt financing the firm is using for each dollar invested by its shareholders. The ease with which a firm can meet its interest payments is an indication of the degree of risk associated with its debt policy. One can also calculate coverage ratios that measure a firm's ability to measure all fixed financial obligations, such as interest payment, lease payments and debt repayment, lease payments and debt repayments, by appropriately redefining the numerator in the above ratios.

In doing so, it is important to remember that while some fixed charge payments, such as interest and lease rentals, are paid with pre-tax dollars, others payments, such as debt repayments, are made with after-tax dollars. The earnings-based coverage ratio indicates the dollars of earnings available for each dollar of required interest payment. In this ratio, the denominator is the interest expense. In the numerator, we add taxes back because taxes are computed only after interest expense is deducted. A coverage ratio of one implies that the firm is barely covering its interest expense is deducted. A coverage ratio of one implies that the firm is barely covering its interest expense through its operating activities, which is a very risky situation. The larger the coverage ratio, the greater the cushion the firm has to meet interest obligations" (Palepu et al, 2000: 9-17).

Current Liabilities and Short-term Liquidity

The three ratios below attempt "to measure the firm's ability to repay its current liabilities" (Palepu et al, 2000: 9-8). The Quick ratio and the current ratio compare a firm's current liabilities with its short-term assets that can be used to repay the current liabilities. The third ratio focuses on the ability of the firm's operations to generate the resources needed to repay its current liabilities.

Quick assets/current liabilities

"The 'quick' or acid test ratio is the strongest discriminator in this particular method of analysis. An inability to pay off one's creditors is a highway to bankruptcy, let alone exposing one's company to a predator. The lower this ratio in relation to the accepted standard of the particular sector, the more likely that the final score is going to be near suggesting vulnerability. The initial suggestion must be that lack of cash or quickly collectable debtors to meet creditor demands is indicative of vulnerability" (Inman, 1992: 3).

$$\text{Quick Ratio} = \frac{\text{Cash + Short-term investments + Accounts Receivables}}{\text{Current Liabilities}}$$

The Current Ratio (current assets / current liabilities)

"It has a high positive weight, and hence, if there is a close relationship with the industry standard emphasised by high levels of inventory then remember:

- Liquidating inventory to raise cash means a company is destroying its means whereby sales are made;
- Inventory is notoriously difficult to dispose of in a hurry;
- Slow inventory turnover suggest that things might be wrong.

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This ratio has other limitations. In traditional manufacturing concerns, it is likely to be material, but as manufacturing practices change, this ratio is going to be less significant. The introduction of JIT procedures will reduce inventory and hence move the ratio closer to that of the quick ratio. By the same token, many firms are deliberately reducing inventory levels. This ratio is likely to differ substantially from traditional levels. The nature of the industrial sector also has an effect. Retailing will fluctuate wildly, food and catering and automobile distribution will be very low, and many services will have no inventory at all" (Inman, 1992: 3).

"Since both current assets and current liabilities have comparable duration, the current ratio index is a key index of a firm's short-term liquidity. Analysts view a current ratio of more than one to be an indication that the firm can cover its current liabilities from the cash realized from its current assets. However, the firm's current assets are not easy to liquidate. The quick ratio capture's the firm's ability to cover its current liabilities in an emergency" (Inman, 1992: 3).

3.6. Strategic Analysis

The strategic analysis involves a discussion on qualitative issues and SWOT analysis.

3.6.1. Qualitative issues

Johnson (1999:118) agrees that valuing goes beyond DCF valuation. Valuation requires the incorporation of knowledge and assessment of:

- Comparable precedent transactions
- Corporate strategies
- Business economics and special circumstances

Further, Johnson (1999:119) identifies the following two concepts, which are important in incorporating the qualitative aspects of a business combination, and can be seen to have relevance for the management buy-out in this case.

- Market for corporate control – It is where business valuation attempts to estimate how a company will 'trade' in the market for corporate control. The starting point would be the stock market trading levels for a publicly held firm, and in the case of a privately held company it needs to be estimated at what price the company would trade if it were publicly traded. Johnson (1999: 119) says that the valuation of privately held companies can be estimated through comparison with similar publicly traded companies and by analyzing the financial and business characteristics of the particular firm.

- Market premium – It is a useful concept in assessing how a potential buyer may react to a specific proposal. If no premium is offered then there is little likelihood of success of the transaction, regardless of the validity of the valuation analysis. This concept means the premium over the market value of a share or company.

The P/E ratios were used to determine how the company would trade in the market for corporate control. The average P/E ratios was taken for the sector and adjusted for specific risk factors for Flint Construction cc. P/E ratios specific risk factors will be looked into in greater detail under P/E ratios. The market premium (return on market minus risk-free rate) will be discussed further under Capital Asset Pricing Model (CAPM). The SWOT analysis below gives a broad overview of Flint Construction cc's strategic position.

3.6.2. SWOT Analysis

SWOT analysis, which entails sizing up a firm's resource strengths and weaknesses and its external opportunities and threats, provides an overview and insight into whether a firm's business position is fundamentally healthy or unhealthy. According to Thompson and Strickland, (2001: 117), SWOT analysis is grounded in the basic principle that strategy-making efforts must aim at producing a good fit between a company's resource capability and its external situation. This will be undertaken to provide inputs into the valuation process of Flint Construction cc.

A SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) is designed to describe the existing situation of a company with an analysis of the strengths and weaknesses of the business itself (resource based) as well as the opportunities and threats (environment based) faced by the business in the wider business environment. The true value of the SWOT analysis is the identification of what future action is required.

Thompson and Strickland (2001: 127) acknowledge that the really valuable part of SWOT analysis is to evaluate the strengths, weaknesses, opportunities and threats and to draw conclusions about:

- "How the company's strategy can be matched to its resource capabilities and to its market opportunities, and
- How urgent it is for the company to correct which particular resource weaknesses and guard against which particular external threats" (Thompson and Strickland, 2001: 127).

A *strength* is something a company a company is good at doing or a characteristic that gives it enhanced competitiveness. Thompson and Strickland (2001: 117) says that a strength can take any of several forms, which are as follows:

- A skill or important expertise
- Valuable physical assets
- Valuable human assets
- Valuable organizational assets
- Valuable intangible assets
- Competitive capabilities
- An achievement or attribute that gives the company market advantage
- Alliances or cooperative ventures

The following strengths were identified in Flint Construction cc: strong management team, a loyal workforce (key staff), operation in a niche market and adaptable to offshore work and projects. Further the company is not highly affected by unionization.

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Thompson and Strickland (2001: 119) define a *weakness* as something a company lacks or does poorly, or a condition that puts it at a disadvantage. They go on to say that "a company's internal weaknesses can relate to:

- Deficiencies in competitively important skills or expertise or intellectual capital
- A lack of competitively important physical, organizational or intangible assets
- Missing or weak competitive capabilities in key areas" (Thompson and Strickland, 2001: 119).

Flint Construction cc is highly reliant on one industry and operates in a highly labour based industry, plant and equipment is not very good, and the company is susceptible to movements in gold and other precious metals' prices.

"Opportunities are a big factor in shaping a company's strategy" (Thompson & Strickland, 2001:125). They go on to say that depending on prevailing circumstances, a company's opportunities can be plentiful or scarce and can range from wildly attractive to marginally interesting. "The opportunities most relevant to a company are those that offer important avenues for profitable growth, those where a company has the most potential for competitive advantage, and those that match up well with the company's financial and organizational resource capabilities" (Thompson & Strickland, 2001:125). There exists opportunity for Flint Construction cc in the offshore market. The company currently has a presence in Zambia, Tanzania and has done some work in Mozambique. Due to the highly specialized type of work that the company performs, there also exists a host of opportunities on the local home front, in South Africa.

According to Thompson & Strickland (2001), *threats* can stem from the emergence of cheaper or better technologies, rival's introduction of new or improved products, the entry of lower-cost foreign competitor's into a company's market stronghold, vulnerability to a rise in interest rates, the potential of a hostile takeover, unfavorable demographic shifts, adverse changes in exchange rates, etc. Threats may pose no more than a moderate degree of adversity or they may be so imposing so as to make a company's situation and outlook quite tenuous. Work in Flint Construction cc is

specifically linked to the gold industry, therefore fluctuations in gold prices and certain mines closing down would have an adverse effect on the company. Further the clients of Flint Construction cc are doing less outsourcing and more in company work.

Flint Construction cc is addressing their weaknesses discussed above.

3.7. Valuation Methods

Flynn (1997) says that value is a futuristic concept. "It is not an objective concept, because its essence is vested in an unknown future. If there is no tomorrow, then nothing has value. A glass of water in the middle of the desert is more highly valued than it is at home. Luxurious homes are of little value in a war-torn country. Under normal economic circumstances, however, value is used in the sense of what something is worth in a market where it can be freely bought and sold" (Flynn, 1998: 361). An intangible asset (e.g. the company) can only be valued on the basis of an expectation of the future cash flows resulting from ownership of the asset.

According to Pearson (1983: 53) there is no single, correct answer to the question of how much a business is worth. The buyer and seller are likely to have significantly different views. Pearson (1983: 53) says, "yardsticks can be helpful and comparisons may be drawn, but each bid situation is a unique set of circumstances. The 'value' of a business can be significantly different from that of six months ago, or six months hence, so timing is important."

"The valuation of business instruments is the process of deriving the prices at which the financial instruments of the business may be exchanged. The value of something cannot be stated in the abstract; all that can be stated is the value of the thing in a particular place, at a particular time, in particular circumstances. The question to whom and for what purpose must always be asked before a valuation can be carried out"(Accountants Digest, 1983: 2).

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Arnold (1998) says there are four main methods of valuation: *net asset value, dividend valuation model, price earnings ratio model and the cash flow model*. The main problem of valuation is that the determinants of value occur in the future. There are two skills needed for valuation, first is the analytical ability, to be able to understand and use mathematical valuation models. Second, is good judgment because most of the inputs to the mathematical calculations are factors, the precise nature of which cannot be defined with absolute certainty. However, two significant perspectives are commonly used. The first is to attach values to the underlying physical assets and then estimate the value of the intangible assets if appropriate. The second is to attempt to predict the future cash flows, which will be generated by the asset and then to discount those future cash flows at the appropriate rate of return, given the perceived risk of holding that asset.

According to an article by Peter Schafer in Business Day (July 2003), entitled *"Private equity may be the answer"*, he affirms that the most used valuation methods in South Africa are:

- Discounted future cash flows
- Capitalized sustainable earnings (historic or prospective price earnings ratio)
- Recent transaction prices for acquisitions in the sector

When valuing Flint Construction cc the following valuation techniques will be used: the Net asset value (NAV), Price earnings ratio (P/E) model, and the discounting of free cash flows (DFCF's). In addition the economic value added (EVA) model will be considered. The dividend discount model is not appropriate, as Flint Construction cc does not pay any dividends.

Pricer & Johnson (1997) conducted a field study wherein they compared the predicted selling price with the actual selling price of a sample of small businesses. They have put forward a number of reasons why a firm should be accurately valued, thus motivating the need to identify reliable techniques for calculating a market value for a business. Financial statement information from the first year prior to the sale was used to predict the value of the small firms in the sample, using valuation techniques frequently

discussed in the literature. The value predictions were compared with the actual selling price of the firms.

Pricer & Johnson (1997) say that valuation techniques fall into three classes: *asset valuations, earnings valuations, and cash flow valuations*. The asset value argument contends that a business's success is reflected in its ability to accumulate assets, since it is the assets of the business that allows it to generate income, hence the assets reflect a true value of the business. The results of their study are that while no single valuation model is dominant in estimating the selling price of a particular business, some methods are better than others. The results from their study also shows that it may be possible to identify a single valuation method that is a reasonable predictor of the selling price of a business.

All of the above four methods, that is Net Asset Valuation, Price Earnings, Discounted Free Cash Flows, and Economic Value Added Models will be used in the valuation of Flint Construction cc, and then an assessment will be made as to which method(s) provided the best estimate of company value.

3.7.1. Net Asset Valuation (NAV)

It seems that the most obvious place to start when faced with a task of valuation is the balance sheet. In this method the company is viewed as being worth the sum of the value of its net assets. According to Arnold (1998) the balance sheet is regarded as providing objective facts concerning the company's ownership of assets and responsibilities to creditors. Here the fixed assets are recorded along with stocks, debtors, cash and other liquid assets. With the deduction of long-term and short-term creditors from the total asset figure we arrive at the NAV, which is often called the equity shareholders' fund.

For most companies, investors look at the income flow that can be derived from the holding. This flow is generated when the balance sheet assets are combined with assets that are impossible to quantify. From Figure 1 it can be seen that these include the skills of the workforce, the relationships with customers and suppliers, the value of brands, the

reservoir of experience within the management team, and the competitive positioning of the firms' products. Thus, investors in the market generally value intangible, immeasurable assets more highly than those that can be identified and recorded in the balance sheet.
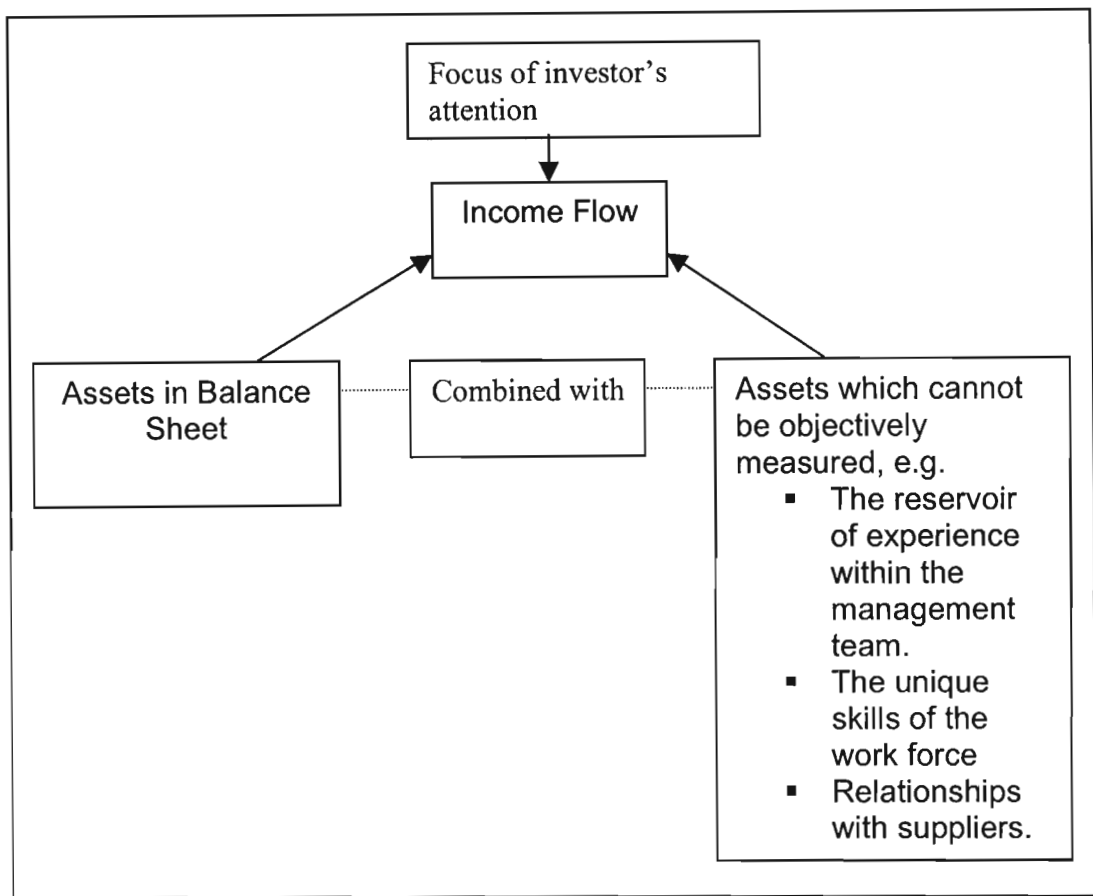

Figure 1: What creates value for shareholders? (Arnold, 1998, 730, Exhibit 17.3 What creates value for shareholders?

Some of the disadvantages of the balance sheet are listed below:
- Land and buildings are often shown at cost rather than market value; thus the balance sheet can provide a significant over or under valuation of assets' current value.
- Plant and machinery is shown at purchase price less depreciation amount.

- Stock is valued at lower of cost or net realizable value which can lead to a significant under-estimate, as the market value can appreciate to a figure far higher than either of these.
- Goodwill, provisions, merger accounting, debtors, intangible brand value are a few balance sheet entries vulnerable to subjective estimation, arbitrary method and even clinical manipulation.

There are several methods that are used to value the net assets of companies. The predominant problem with the *book value* method is it ignores the future return the assets can produce and is calculated using accounting terms that does not reflect how much the business is worth to someone who may buy it as a going concern. Flynn (1997: 364) suggests that the basic concept underlying *replacement costs* valuation is that a business wishes to ensure the continuity of its operations. Under this method, all assets are to be valued by reference to the price that would have to be paid to replace them with assets of similar condition and age on valuation date. The predominant problem with this method of valuation is that it may be impossible to obtain an estimate of assets, which may no longer be on the market in their present form, and that it may be impractical to establish the replacement cost of many small items, which may exist in the inventory, or stock of the firm.

Flint Construction cc has a problem trying to value the company using the Net Asset Value method. The book value reflects a historical value of the assets, which are depreciated annually; therefore the value will be less than their 'true' value. The replacement costs of assets are very high, and the assets used in operations are depreciated quickly, due to the nature of operations. Further, it will be a very difficult task to get an estimate of the value of the assets, which may no longer be on the market in their present form.

3.7.1.1. Intellectual Capital

Intellectual capital will not be reflected in a net asset valuation. The following section deals with intellectual capital. "Intellectual capital is concerned with value creation for

the long-term development of capabilities and competencies, which are said to be needed in a society of demanding customers and empowered employees" (Mouritsen et al.1, 2001: 419).

Dzinkowski (1999) says that corporate knowledge has become a leading competitive factor. Knowledge is wrapped up in intellectual assets/intellectual property such as information, patents, trademarks, and copyrights; and knowledge is wrapped up in corporate management systems, customers, and human resources. However, traditional models of accounting and management have often been criticised as not being sufficient to measure and report the current and potential value of companies whose primary assets fall into these categories.

"The growing difference between firm's market value on the stock exchanges and their book values, is said to reveal intellectual capital. The balance sheet accounts for all physical capital, the difference between market values and book values expresses intellectual capital. To merely say that it somehow reflects the difference between market value and book values of a firm is inadequate. When firms talk about intellectual capital statements, they are expressing their interests in controlling and managing the firm. Therefore, intellectual capital is about the activities managers can put in motion in the name of knowledge. These activities turn out often to be about employee development, restructuring organisations and developing marketing activities" (Mouritsen et al.2, 2001:753).

According to Mouritsen et al.1 (2001: 419) "intellectual capital statements do not attempt to form one bottom-line expression of value. Rather, they attempt to form networks of sketches, stories and numbers, to form paths along which new value-creating activities can be supported. Sketches to management of relations between employees, customers, technologies and organisational routines and procedures; stories about the effects of bundles of human capital, structural /organisational capital and customer capital; and configurations of loosely coupled numbers that accompany and make the implementation of the story-line accountable and thus serious. These constitute in concert the

'unmediated mediators', which craft the leaps whereby employees can help to identify and solve the firm's problems" (Mouritsen et al.1, 2001: 419).

"Obviously, there are mediators (sketches, stories and numbers) but they are more or less "unmediated" because they do not claim to uncover a hidden truth about the value of intellectual capital. In contrast they are always tangential to value creation and are powerful only to the extent that they bring discourse of intellectual capital on. They are "unmediated" because their "content" has to be determined in use" (Mouritsen et al.1, 2001: 419).

According to Dzinkowski (1999), some basic questions for the measurement of intellectual capital still remain. "One immediate question is whether to form a single intellectual capital index. Opinions vary: proponents point out that it gives people a simple target; however; it also hides meaning. A similar debate is also held over the balanced scorecard, with the consensus being that a single aggregate measure is unhelpful. Even if the components of intellectual capital are kept separate, they still need to be identified and measured. If the business is well understood, this is straightforward; indeed a scorecard for intangible aspects of the business may well already be in place. Apart from the well known scorecard, measurement schemes such as business excellence model of the European Foundation for Quality Management considers parameters for the business which may well feature in any measurement system. Furthermore it has the potential for external comparison" (Dzinkowski, 1999). The real difficulty is not so much the classification, identification and measurement of intellectual capital but instead:

- Understanding the movements of intellectual capital between categories and how a business may be managed to increase the overall sum of intellectual capital;
- Obtaining the link between acceleration of intellectual capital and financial performance.

Mouritsen et al.2 (2001: 747) describes a classification system which will help "create a 'distance' to the intellectual capital statement's numbers by 'imposing' certain managerial issues just like various ratio analyses help read a firm's financial statement.

The reading of the model to be presented below is parallel – if different- to a reading of a financial accounting statement. A conventional accounting statement has four domains (transactions about revenue, costs, assets and liabilities) and the model proposed also has four domains (statements about employees, customers, processes and technology)." This can be seen in Figure 2 below. The financial accounting statement allows three general prescriptive readings: one of solidity, one of liquidity and one of profitability.

Management arena	Productivity Surveillance	Qualification Management	Portfolio Management
Modality	Competencies	Qualifying activities	Portfolio
Measures **Domain**	Effects	Activities	Resources
Employees			
Customers Publics			
Process			
Technology			

Knowledge narrative

(Knowledge Strategy)
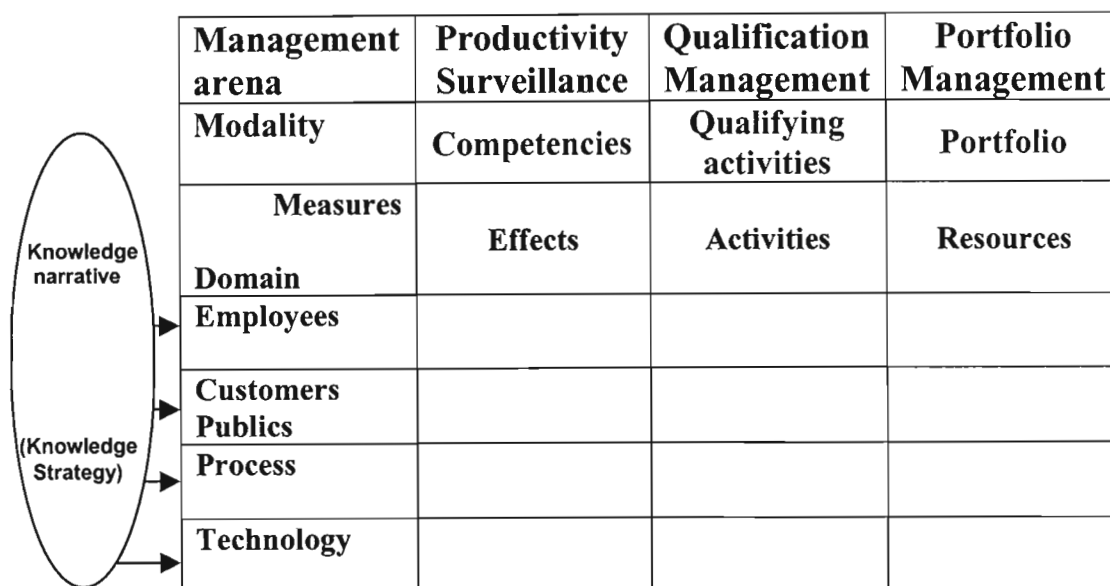
Figure 2: Analyzing intellectual capital. Source: Mouritsen et al.2 (2001:747)

"The intellectual capital statements may also enable three different prescriptive readings, namely for portfolio management activities about the firm's knowledge resources, for its qualifying activities when resources are improved, and for its monitoring of productivity when effects are surveyed. This model has four domains: employees, customers, processes and technology, and three categories of information about knowledge management activities performed by management: effects, improvement or qualifying activities and resources. The model classifies the number in the intellectual capital statements. It therefore does not talk explicitly about the firm's knowledge strategy or identity. These have to be formed outside" (Mouritsen et al.2, 2001: 747). There is substantial intellectual capital in Flint Construction cc, and an attempt will be made to value it in the Net Asset Value method.

3.7.1.2. Goodwill

Goodwill is based upon the existence of earnings in excess of a fair rate of return on tangible net assets. According to Kasper (1997), goodwill depends upon factors such as prestige of the business and trade or brand names. He goes on to say that a more enlightened view of goodwill is that it should be ignored when determining the value of a business. Further, goodwill will not be reflected in a net asset valuation.

In recent years, the accounting treatment for purchased goodwill has been a subject of great controversy. "Evidence that the market perceives goodwill as an asset when determining the value of a firm would provide some support for recognition as an asset on the balance sheet. If good will is recognized as an asset, then another question is raised; is goodwill perceived similarly to other assets in the valuation of a firm?" (Mark et al, 1995: 72).

"In the case of the balance sheet, the issue is whether goodwill should be capitalized or written off against owner's equity at the time of acquisition. At issue is whether there continues to be a relationship between the expected future benefits associated with the purchased goodwill and its cost beyond the date of acquisition. If such relation exists, the firm's resources may be represented better by balance sheets that reflect purchased goodwill. On the other hand, if this relation does not exist, the firm's resources may be represented better by omitting purchased goodwill from the balance" (Jennings et al, 1996: 513-514). Kasper (1997) says that the value of goodwill is recognized when there is an excess over the fair market value of an asset.

Jennings et al (1996: 530) found "strong positive cross-sectional association between equity values and recorded goodwill asset amounts, after controlling for other components of net assets." There was also evidence of "a negative association between equity values and earnings. However, this is somewhat weak, suggesting that the relation between equity values and goodwill amortization may vary substantially across firms. Thus, to the extent that equity values reflect investors' beliefs about firms' future cash flows, these results are consistent with hypothesis that purchased goodwill is viewed by

investors as an economic resource that does not decline in value for some firms" (Jennings et al, 1996: 530).

According to Glover (1987: 37), "occasionally the purchaser and vendor agree to be bound by an independent valuation of the company on net assets basis. These full-scale asset valuations are often detailed lengthy exercises, in which independent professional valuations of all properties, plant and machinery and other fixed assets are commissioned. The parties might resort to this basis of valuation because it is thought to be less subjective and therefore less contentious than earnings based valuation. But there is plenty scope for differences of opinion in an asset-based valuation. The professional valuation of fixed assets, for example, is dependent on the assumptions used in the valuation. Thus, a valuation on an existing use basis, assuming adequate profitability may be considerably different from one on actual profitability. The treatment of stocks, intangibles and potential capital gains tax on any unrealized surpluses or profits shown by the revaluation, can be extremely contentious."

It must be noted that there was no goodwill on the balance sheet of Flint Construction cc, and it was not valued.

3.7.2. Valuation Using Income Flow Methods

The value of a share is determined by the income flows that investors expect to receive in the future from its ownership. Past information is only of relevance to the extent that it contributes to an understanding of expected future performance. Income flows will occur in the future and so they will have to be discounted.

There are three types of income valuation models:

- Dividend-based models;
- Earnings-based models;
- Cash flow-based models.

3.7.2.1. Dividend Valuation Models (DVM)

No discussion of valuation methods would be complete without some reference to the dividend valuation model (DVM). It is a method that is explained or widely used in a number of textbooks, and therefore a discussion on DVM is necessary. The dividend valuation model is normally used to ascertain a market value based on the company's normal level of declared dividends. The DVM model is based on the premise that the market value of ordinary shares represents the sum of the discounted expected future dividend flows, to infinity.

"The only cash flows that investors ever receive from a company are dividends. This holds true if we include a 'liquidation dividend' upon the sale of the firm or on formal liquidation, and any share repurchases can be treated as dividends. Of course, an individual shareholder is not planning to hold a share forever to gain the dividend returns to an infinite horizon" (Arnold, 1998: 734).

The individual shareholder will expect two types of return:
- Income from dividends, and
- A capital gain resulting from appreciation of the share and its sale to another investor.

Total shareholder return = <u>Dividend + Capital gain</u>	**x**	**100**	
Original Investment			

"Many private companies do not pay dividends even though they make reasonable profits. The shareholders in such companies are usually also directors and the company is often their chief source of livelihood. For them, it may be sensible to distribute profits in the form of director's remuneration rather than dividend. In other cases, wealthy shareholders, faced with high rates of tax on unearned income, may prefer to leave their funds in the company where they will ultimately accrue, for their successors' benefit.

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How should minority shareholdings in such companies be valued? Are we to conclude that because the company pays no dividends its shares have no value?" Glover (1986: 202)

Glover (1986) says that it is necessary to dispose of a valuation technique which is occasionally encountered, but which has no claim to be taken seriously. "This is the hypothetical dividend yield method, whereby the valuer estimates the 'normal' dividend the company would declare if it were to pay dividends, and capitalizes this on the basis of a required yield derived in the ordinary way. A discount would then be applied to the resultant figure to reflect the fact that the shares do not in fact pay a dividend. The discount is a matter of individual preference. Where this technique is used in fiscal valuations, the discount is not less than 50%" Glover (1986: 202).

"Although this method of valuing shareholdings in non-dividend paying companies may be permissible for fiscal valuations, it has no place at all in the valuation of shares for commercial purposes. The fundamental objection to it is obvious. If the value of an asset is a function of its cash return, any valuation based on an imaginary cash return must itself be imaginary. The fact that there is a substantial discount merely makes it a discounted imaginary valuation. It is no more logical to value non-dividend paying shares on an imaginary profit, say, the profit it would earn if it were properly managed or if the industry prospects were different. Shares must be valued on the basis of their actual not their hypothetical prospects" Glover (1986: 202).

To make DDM analysis manageable, simplifying assumptions are usually made about the patterns of growth in dividends. DCF models can be used under assumptions of no growth, of constant normal growth in perpetuity, and of variable rates of growth.

The constant growth formula is:

$$V = D_1/(K_e - g)$$

Where: V = The value

D_1 = The expected dividend for the forthcoming period

K_e = The cost of equity

g = The expected rate of growth in perpetuity

Most managers attempt to make dividends grow in line with the firm's long-term earnings growth rate. The fact that management has the propensity to make dividend payments grow in an incremental or stepped fashion it seems that a reasonable model could be based on the assumption of a constant growth rate. Growth rates will be different for each company, but for corporations taken as a whole, dividend growth will not be significantly different from the growth in nominal gross national product (real GNP plus inflation) over the long run. Table 2 lists the advantages and disadvantages of the dividend discount model.

Advantages	Disadvantages
Simple to calculate	Very susceptible to changes in the expected growth rate.
P_o readily observable	Penalizes companies that have been performing well, since they have high growth rate. (applicable to the derivation of K_e)
D_1 can be estimated with relatively little difficulty	Takes no explicit account of risk.
g can be estimated from historic growth and adjusted for any known changes.	

Table 2: Dividend discount model (DDM)

"Since equity is riskier than say, Treasury bonds (on which you get your money back when they mature), the returns for shareholders – and thus the cost of equity for firms – normally need to be bigger. The greater the risk, the bigger the return needs to be. Shares with high P/Es (or low earnings yields) are valued more highly because investors believe that they will deliver better returns. Those returns can come from income, capital gains, or both. Firms might choose to reinvest all of their profits in their business, which means that all of the returns to shareholders will be in the form of capital gains. But eventually, to be worth anything, the equity has to deliver money to shareholders, either through dividends or share repurchases" (Cookson, 2001: 14).

Flint Construction cc does not pay dividends; therefore we will not be using the dividend valuation model to calculate a value for the firm.

3.7.2.2. Earnings-Based Valuation

This model is based on the premise that the company's value can be expressed as a multiple of its earnings. Shares in a target company may be valued by applying an appropriate multiple to its earnings, or by dividing earnings by an appropriate earnings yield. The major components of the price-earnings ratio are risk and growth.

A valuation based on earnings requires an assessment of the target firm's earnings over a representative past few periods. Some adjustments to earnings record may be necessary in order to reflect all ongoing events in the period in which they occurred. Thus, director's salaries and other transactions with owners that are not 'arms-length' should be adjusted to a fair value for each period. The objective of the earnings review is to establish a figure for maintainable earnings that is predictive of what future earnings are likely to be, and to establish an average past growth rate that can reasonably be expected to continue.

3.7.2.2.1. Price-earnings ratio (P/E)

"One way of determining the approximate value of an unquoted business is to apply the earnings multiples of unlisted companies with comparable growth prospects in the same industry sector to the adjusted earnings of the acquisition candidate. The earnings of the acquisition candidate need to be adjusted to reflect the accounting treatment and operating cost levels of the acquirer. For example, stock valuation methods or depreciation policy may be different. An acquirer may take the view that the earnings multiple used to value an unquoted company should be slightly lower than a comparable quoted one, even if the company is large enough to justify a full listing on the stock market. The reasons for this are that the disciplines on the unquoted company are less rigorous and that the shares are less easily marketable. If the unquoted company is too small even to be traded on the unlisted securities market, then a larger discount on the valuation is appropriate" (Pearson, 1983: 54).

The increase in the share price and resulting capital gain is one of the main attractions of investing in shares. The P/E ratio expresses the relationship between the current price of a listed share and its latest reported earnings. P/E ratios (often referred to as earnings multiple because it is the number by which earnings are multiplied to arrive at a price) is used in valuations on the assumption that a similar or adjusted relationship should exist between the earnings of a target firm and the price a buyer should be prepared to pay for its shares. The P/E Ratio measures the multiple of earnings for which the shares of the company are selling and is calculated as follows:

P/E Ratio = <u>Market price of the share</u>
Earnings per Share

This ratio is considered to be a yardstick for investor sentiment with regards to a share. It is a fairly crude measure, but should be included when valuing the shares of a private company. This implies that the value of the share may be determined using the following formula:

$$Vs = P/E \times EPS$$

Where: Vs   =   the value of an ordinary share

P/E   =   the price to earnings ratio

EPS   =   the earnings per share.

Shares that are expected to perform well tend to have high P/E Ratios, because investors expect the future profits to be high and are therefore prepared to pay more for the shares. A company that has poor future prospects will reflect a poor P/E Ratio.

"By definition a price earnings ratio is the price or value of the share or entity divided by the earnings or earnings per share. This equation contains three unknowns:

- The value of the company or share.

- The earnings or earnings per share.

- The price earnings ratio.

Those using the P/E Ratio method analyse and adjust the past earnings and make adjustments to arrive at maintainable and sustainable earnings. They are left with one equation and two unknowns. Without the price earnings ratio one cannot arrive at the value and without the value one cannot arrive at the price earnings ratio. So the trick is to find one or more 'similar' listed shares and make adjustments to their price earnings ratios to arrive at a price earnings ratio that is applicable to the entity or share being valued. This eliminates another unknown so that the equation: Value = PE ratio x maintainable and sustainable earnings can be solved" (http://www.accountancysa.org.za /archives/2003feb/coulumns/index.html).

"The two major problems with this methodology are: It is subjective in that there is no proven method for converting the PE ratio of a listed company to one applicable to the entity being valued. Johannesburg participants of the workshops tell me that 'three is a good number' whereas in Cape Town I am told that 'six is a good number'. There could be an arbitrage possibility here if anyone cares to investigate! The method focuses only on one aspect of the company and that is earnings. It ignores the asset values and ability of the company to generate cash flows, among other things" (http://www.accountancysa. org.za/archives/2003feb/coulumns/index.html).

"The starting point in assessing an appropriate P/E Ratio is to identify a listed firm, which is similar in as many aspects as possible to the share being valued. If this is not possible, an average P/E ratio for the industry may be used as a starting point. If there are too few companies in the industry or their classification is open to question, or they include a company whose recent profit is exceptional, then the average for all industrial and commercial companies may be appropriate. Factors that make the firm more risky than the comparable listed company would require a downward adjustment in order to arrive at an appropriate P/E Ratio" (Miller, 1990: 132).

"The following are factors that need to be considered:

- Prospects for the industry – This will require a downward adjustment if prospects for the industry in which the company operates in is bleak.
- The size of the business and its standing within the industry – A smaller firm with less market share than comparable listed companies may be at the mercy of oligopolistic competitors who effectively set prices. If so, it will be more risky, and this would require a downward adjustment to the P/E Ratio.
- The principal shareholders – If individuals of limited resources and influence hold a large proportion of the shares in the company, it may be more risky than comparable listed companies held by large and prosperous companies.
- Negotiability – If a share is not listed on the stock exchange, the market within which it can be traded in is restricted. The articles of private companies contain restrictions on the transferability of their shares, ranging from the need

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for transfers to be approved by the board of directors, to the necessity to offer the shares to other members. In the latter case the market is very severely restricted, and the downward adjustment to the P/E Ratio would be substantial

- The nature of the assets – Highly specialised assets are likely to result in high operating leverage with high fixed costs and low variable costs so that profits fluctuate sharply with sales volumes. They also confine a firm to a particular industry and reduce the flexibility to adapt assets to other uses. Thus, such firms are more risky and the P/E Ratio would need to be adjusted.

- Gearing – The use of borrowed funds introduces financial leverage and financial risk. A further adjustment downwards would thus be necessary.

- Special skills – If a firm has an unbalanced management team. It may be dependant on the technical or other skill of one or more individuals and will thus be more risky." (National Council Guide, 1970 as in Miller, 1990: 132)

The following article from the internet site ((http://www.business-valuationsoftware.com/valuationmethods. html) evidences the above, where P/E ratios are adjusted for non-listed companies. However it must be noted that there are shortcomings to using the P/E ratio for non-listed companies. "This is a popular method due to its simplicity. For non-listed companies wishing to use this method, a comparable quoted company/sector should be used. The difficulty here is in the selection of a comparable company. There could be differences in accounting methods (i.e. treatment of intangible assets like R&D) or an artificially boosted PE ratio due to an atypical drop in earnings. Among many investment professionals, use of accounting net earnings for valuation has declined in favour of cash-flow measurements which are seen as cleaner figures less influenced by the vagaries of accounting practice" (http://www.business-valuationsoftware.com/valuationmethods. html).

"Market Value (For investments in quoted companies only) is derived by multiplying the quoted share price of the company by the number of issued shares. This valuation reflects the price that the market at a point in time is prepared to pay for the shares. It is therefore influenced by the condition of the stock market, the concerns and opportunities that are seen for the company in the sector or market in which it operates, and the investor's view

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of the ability of management to deliver a return on the capital he or she is using. It may anticipate some of the synergies that the acquisition may bring, but is likely to have less of a grasp on the potential as a buyer from the same industry. For companies not listed on stock markets there is obviously no group of investors setting a value on the business on a day to day basis" (http://www.business-valuation software.com/valuation methods.html).

"P/E multiples are commonly used in valuations. Value is estimated by capitalizing earnings using a P/E multiple computed from a set of comparable firms" (Berkman et al 2000: 71). The P/E approach is implemented using industry, market, and transaction comparables. "Comparable firms are usually chosen on the basis of industry, in the expectation that firms in the same industry have similar risk, growth characteristics and accounting methods" (Alford, 1992: 94). "A minimum number of two suitable firms is required to form an industry set. When this requirement is not satisfied, we replace the industry P/E with a market P/E" (Berkman et al, 2000: 75). This rule is adopted as it "is a simple way to proxy for the way in which an investor might try to handle the lack of industry comparables" (Berkman et al, 2000: 75).

There are further pitfalls of the P/E Ratio described by Bodie et al (2002: 581-582). "Firstly, consider that the denominator in the P/E ratio is accounting earnings, which are influenced by somewhat arbitrary rules such as the use of historical cost in depreciation and inventory valuation. In times of high inflation, historic cost depreciation and inventory costs will tend to under represent true economic values, because replacement costs of both goods and capital equipment will rise with general level of prices. Another confounding factor in the use of P/E ratios is related to the business cycle. Because the market, values the entire stream of future dividends generated by the company, when earnings are temporarily depressed, the P/E ratio should tend to be high – that is, the denominator of the ratio responds more sensitively to the business cycle than the numerator" Bodie et al (2002: 581-582).

Despite there are many pitfalls of the P/E ratio, as quoted above, we will attempt to value Flint Construction using the P/E ratio of Aveng, a similar listed company, and the

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average of the construction sector, because this method does relate the value of a firm to its earning performance.

3.7.2.2.2. Discounted free cash flow method (DFCF)

The next method that will be looked at to value Flint Construction cc is the discounted free cash flow method (DFCF). Discounted cash flow valuation of a firm involves determining the value of a stream of cash flows that do not end. DFCF valuation uses a discount rate that reflects the firm's weighted average cost of capital, or the price that it must pay to suppliers of both debt and equity capital. Alternatively, it discounts residual cash flows as envisaged by Glover (1987), quoted below.

"For a company, as for a capital project, the most important, and also most difficult, task in the DCF exercise is the estimation of future cash flows. Cash flow for this purpose is not the popular conception of earnings plus non-cash expense such depreciation, but a figure that reflects all cash inflows and outflows, including receipts and expenditures that affect the balance sheet but not profit and loss account. Outflows must therefore include repayment of loans, investments in fixed assets, and additions to working capital. In addition the valuer has to decide the number of years to cover in the analysis and how the terminal value of the company is to be estimated" Glover (1987: 37).

"Most merchant banks use the free cash flow method to value shares. They analyze the past financial statements of the company and do a thorough due diligence of the company's affairs. They then construct a financial model to project the free cash flows of the company making certain assumptions about key determinants such as growth in revenue, margins, working capital levels, plant replacements, etc. They then discount these cash flows at an appropriate discount rate. This gives them the value of the operating assets of the company. To this they add the value of the non-core assets and deduct the value of the non-operating liabilities. After making some adjustments for items such as secondary tax on companies, they arrive at the value of the entity. This methodology is a conceptually sound approach to valuing an entity or share." (http://www.accountancysa.org.za/archives/2003feb/coulumns/index.html).

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"Clearly, a DCF valuation is a major exercise in which company management must participate. Estimates will have to be prepared on sales volume and sales prices, raw materials cost, operating expenses and a host of other variables" Glover (1987: 37). These estimates were derived from an interview with Mr K.G. Flint who has a detailed knowledge of the past performance of the firm, and who is best equipped to make estimates of the future.

In order to do free cash flows (DFCF's) for Flint Construction cc, one will need to calculate the cost of equity (K_e). Beta measures the systematic risk of Flint Construction cc and is used as an input to calculate the cost of equity of the company using the Capital Asset Pricing Model (CAPM). This means that if Flint Construction cc were listed, the beta would measure the sensitivity of Flint's excess return to that of the market portfolio. "Beta is an adjustment that uses historic data to measure the sensitivity of the company's cash flow, for example, through business cycles. This means that companies in highly cyclical businesses will have a high beta to reflect the volatile nature of their cash flow. The DCF method is a strong valuation tool, as it concentrates on cash generation potential of a business. However, the risk factor, measured by the beta, is impossible to measure precisely" (http://www.business-valuationsoftware.com/valuationmethods.html).

The above quotation from the internet reference is misleading with regards to the measurement of beta. Although it is true that it cannot be measured precisely, there are a number of reputable companies that provide these beta estimates of listed companies. I have been able to use one that provides beta estimates, and standard errors of the beta estimates so that the significance of the beta estimate can be derived (Cadiz Stockbroking).

The required rate of return can be derived from the return foregone by not investing in a similar listed share, or from CAPM as current interest rate and premium for risk. "CAPM which forms part of modern portfolio theory (MPT) is not used widely by South African analysts although 52.1% of analysts rated MPT as at least moderately useful" (Miller, 1990: 142). However, we must take note that it is now twelve and a half years later!

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According to Kasper (1997), cash flow models represent the most powerful method for valuing a company. He says that they are more flexible however more complicated to apply, because it requires a thorough understanding of the business, and the relationship of earnings and cash flow. He generalizes that the free cash flow model is applicable to all types of companies, even to those that have no comparable listed companies.

We will need to calculate a *terminal value* when using the free cash flow method to value Flint Construction cc. "The terminal value of the business may be estimated in a variety of ways. The most conservative is to assume liquidation of the business, unreal though this assumption may be. Book net assets attributable to equity, as shown in the pro-forma balance sheet at the end of the discounting period, or capitalized value of earnings or cash flow thereafter, may be used" Glover (1987: 37).

Johnson (1999: 115) has suggestions on finding a terminal value. DCF valuation is separated into two components:

- A forecast of free cash flows for a number of years
- A terminal value that approximates the present value of the free cash flows that occur in the years after the end of the forecast period.

Pro-forma financial statements are prepared for five to ten years and then a terminal value. Terminal value at the end of the period of cash flow forecasts may be arrived at in different ways.
Johnson (1999) suggests three of the methods, namely:
- Estimating book value at the terminal date.
- Applying a price/earnings multiple to forecasted earnings –either net income or earnings before interest and tax (EBIT)
- Equating the terminal value to the present value of a perpetual stream of cash flows that begin a year after the terminal date – assuming a constant rate of growth.

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Johnson (1999: 115) goes on to say that terminal book value is estimated by projecting the balance sheet forward to the last year of the forecast horizon and arriving at the book value of the common equity account at that time. Under this scenario, it is assumed that an interim free cash flow has been paid out.

A terminal price/earnings or EBIT multiple essentially values the firm at the end of the horizon in the same way that the stock market would value it-by capitalizing the then-current earnings. Johnson cautions that the choice of the proper multiple will have a large effect on the terminal value, and that care need to be taken to choose a multiple consistent with the characteristics of both the industry and the company at that time. One way of estimating terminal value is to equate the terminal value to the present value of a growing stream of cash flows. Johnson (1999: 116) asserts that this is slightly more complicated but is conceptually more consistent with the premises of DCF valuation.

This technique multiplies the free cash flow in the last forecasted year by a multiplier that estimates the value of the cash flows in perpetuity, as in the formula below.

Terminal Value $=$ $\textbf{FCF}_t\,[\textbf{(1+g)/(k-g)]}$

Where:

$$g \quad = \quad \text{assumed rate of infinite growth of cash flow stream into the future}$$

$$k \quad = \quad \text{weighted average cost of capital}$$

$$FCF_t \quad = \quad \text{free cash flow in year t, the last forecasted year}$$

The formula thus capitalizes a stream that is growing at g percent into the future, and the stream is discounted at k percent. The above formula was used to calculate the terminal value of Flint Construction cc.

Miller (1990: 169) describes, "as the all-equity financed firm uses only equity capital, the cost of thereof (K_e) is the rate of return required for the discounting of cash flows expected to accrue to holders of equity capital. When a firm uses debt-type finance as well as equity, there are several ways of valuing equity. One is to use the same format as

for an all-equity firm, to recognize that the free cash flow is available to the providers of both equity and debt capital, and to discount the annual cash flows during the planning period and terminal value thereof, at the weighted average cost of capital. This procedure will give an answer that represents the value of the entire firm, from which the value of liabilities is deducted to arrive at the value of equity capital."

One could use the DFCF method to calculate the value of the firm at WACC (less liabilities) or at cost of equity (K_e). We have used the latter because we are attempting to do an equity valuation of Flint Construction cc.

Once the series of free cash flows and terminal value are estimated, the present value of these two components are calculated. "The DCF method is probably the most theoretically satisfying valuation technique for business acquisitions but it is not used as often as it should be because of obvious practical difficulties. Few businessmen have much confidence in specific forecasts of results ten years, or even five years, ahead and the evidence suggests that investing institutions are skeptical about numerical profit forecasts beyond two years. Given such doubts, it is hardly likely that the detailed, time-consuming and costly investigation necessary for DCF purposes would be seen as worthwhile" Glover (1987: 37). In spite of these reservations, the discounted free cash flow method (DFCF) was applied as Mr K.G. Flint was in a position to provide these estimates.

"Furthermore, the notion of infinite life for the business is unreal, as is the notion that the value of the business ten or more years hence can be estimated with any degree of accuracy. The DCF method appears to be appears to be popular where income or profits can be estimated with some confidence. The DCF basis of valuation will not necessarily produce a market valuation. Because the discount rate is the buyer's required rate of return and not necessarily the market rate of return, the resultant figure will be the value to the particular buyer. It indicates the maximum price he should pay or, if a vendor, the minimum he should accept. The actual price realized will depend on the circumstances of the buyer i.e. on the buyer's owner value and on the bargaining and negotiating skills of the two sides" Glover (1987: 37).

3.7.2.2.3. Economic Value Added (EVA)

Economic value added "was developed and trademarked by the US consultants Stern Stewart & Co" (Arnold, 1998: 704-705).

EVA = Adjusted invested capital x (Adjusted return on capital – WACC)

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or

EVA = Adjusted operating profits after tax – (Adjusted invested capital x WACC)

Arnold (1998) asserts that EVA has the virtue of being based on familiar accounting concepts and it is arguably more accurate than taking ordinary accounting figures. However, there is criticism that the adjustments for EVA can be time-consuming and costly, and are based on subjective decisions. Bodie et al (2002) vindicates that economic value added is the spread between Return on assets (ROA) and the opportunity cost of capital multiplied by the capital invested in the firm. EVA is suitable as a check on the DFCF model, and also requires an estimate of the cost of capital.

3.8. Capital Asset Pricing Model (CAPM)

The purpose of calculating the cost of equity (using CAPM) will be to discount the free cash flows. (The weighted average cost of capital (WACC) will not be used to discount free cash flows, as the valuation of Flint construction cc is an equity valuation, but it will be used in the EVA calculation.)

"The capital asset pricing model (CAPM) is a set of predictions concerning expected returns on risky assets. Harry Markowitz laid down the foundation of modern portfolio

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management in 1952. The CAPM was developed 12 years later in articles by William Sharpe" (Bodie et al, 2002: 263). The essence of CAPM is as follows: In market equilibrium, a security will be expected to provide a return commensurate with its unavoidable risk. This is simply the risk that cannot be avoided by diversification. The greater the unavoidable risk of a security, the greater the return that investors will expect from that security.

If the historical returns of a security in excess of the risk-free rate are plotted against the excess returns of the market portfolio, the linear relationship that results is called the characteristic line. The slope of the characteristic line is called the beta coefficient which, when multiplied by the standard deviation of the returns on the market portfolio, represents the systematic (or market-related) risk of a security due to the underlying movements in security prices. This risk cannot be diversified away by investing in more stocks, as it depends on such things as changes in the economy and in the political atmosphere, which affects all stocks.

The unsystematic risk of a security is described by the dispersion of the estimates around a security's characteristic line. By diversification of securities in one's portfolio, it is possible to reduce unsystematic risk. This component of total risk is unique to a particular company, and is thus independent of factors that affect securities in a systematic manner. As a result, a security's expected return should be related to its degree of systematic risk, not to its degree of total risk.

The capital asset pricing model (CAPM), as developed by Sharpe, may be expressed mathematically as follows:

$$E(R_j) = R_f + B_j [E(R_m) - R_f]$$

Where

$E(R_j)$ = The expected return on the jth security (or portfolio)

R_f = the risk free interest rate

B_j = The beta coefficient of the jth security which, when multiplied by the standard deviation of the market returns on the market portfolio, is a measure of the systematic risk which the CAPM implies is crucial in determining the prices of risky assets.

$E(R_m)$ = The expected return on the 'market portfolio' which consists of an investment in each asset in the market in proportion to its fraction of the total value of all assets in the market.

The equation above implies that the expected return on any asset is equal to the risk-free rate plus a premium given by the product of the systematic risk of the asset and the risk premium on the market portfolio.

The CAPM is illustrated in Figure 3
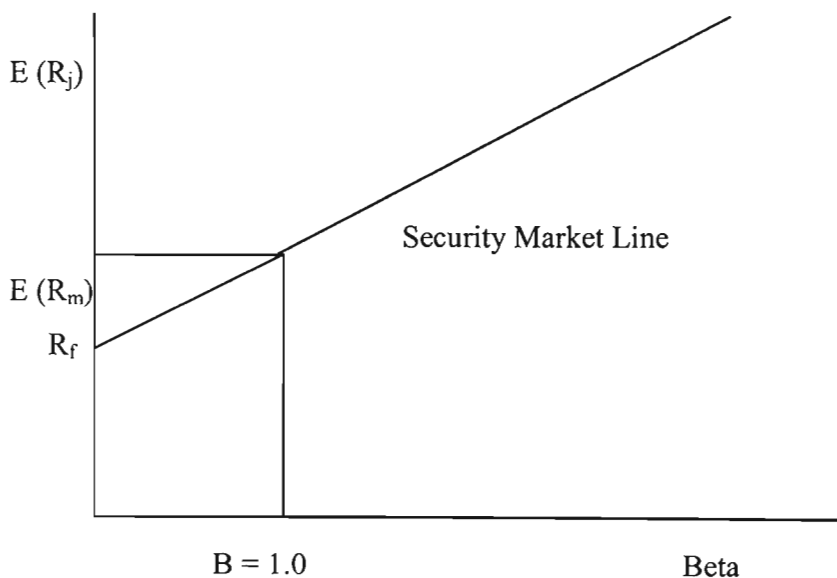
Figure 3: Illustrating CAPM and the Security Market Line

Figure 3 depicts the security market line, which, in market equilibrium, is the linear relationship between an individual security's expected rate of return and its systematic risk. Under the assumption of the capital asset pricing model, all securities lie along this line.

"CAPM offers a more rigorous approach to gauging the cost of equity. It compares the overall extra riskiness of equities and the extra riskiness of individual shares with a riskless investment (such as Treasury bonds). The overall extra riskiness is captured by the so-called equity-risk premium. The extra risk for each individual security, called its beta, is compared with the market as a whole (in a portfolio, some risks net out: one share might go up at the same time as another goes down). On this view, shares that offer higher returns than risks that investors are willing to take are cheap; those with lower returns are expensive. So the cost of equity is defined as the risk free rate plus the share's beta multiplied by the expected equity-risk premium" (Cookson, 2001: 14).

Firer (1993) says that, "to the firm, the cost of equity is the cost of attracting and retaining share capital in competitive capital markets. When appropriately weighted with the cost of borrowed funds the firm's weighted average cost of capital is established. This average cost is the discount rate, which should be applied to projects with a risk profile similar to that of the firm itself. To the investor in a firm, the cost of equity is the required rate of return on the shareholders' funds invested in the firm. The cost of equity takes into account the relative riskiness of the firm, and is used in the valuation process to discount the expected stream of future cash flows to derive an estimate of the present value of the firm."

According to Miller (1990), under CAPM, the range in risk premiums for listed shares can be established (using the lowest to the highest beta and multiplying by the market premium) and a better idea is gained on the size of the premium required for unlisted shares. The two key parameters in the pricing of capital assets are expected return and risk. The CAPM is an idealized portrayal of how financial markets price securities, and thereby determine expected returns on capital investments. The model provides a methodology for quantifying risk and translating that risk into estimates of expected return on equity. In other words, CAPM may be employed in estimating a company's cost of equity capital.

According to a discussion by Lumby (1998: 285-288) it is found that CAPM is not perfect, but is a good predictor of returns, and is certainly better than anything else that is available. "There are problems with the model, many stock market boosters argue that the equity-risk premium has fallen because investors have realised that over time, stocks are not as risky as they had thought. Another problem that exists is about how volatility should be measured" Lumby (1998: 285-288).

"Investors have to base their forecasts of a share's future volatility on its performance in the past, but they are only guessing. As the experience of the past couple of years shows, companies with hitherto fairly stable share prices can become very volatile indeed. That leads to the third problem: is volatility the same as risk? Only up to a point. One difficulty is that as shares fall, their beta generally rises. If that happens, investors will not buy then even though they are cheaper, and thus presumably less risky. But the main trouble with CAPM is that is static backward-looking theory. Investors generally want to buy in those areas that grow fastest, because they hope that the returns will be juicier. One risk for them is in not being invested in these stocks" (Cookson, 2001: 14)

3.8.1. Risk Free Rate (R_f)

The risk-free rate (R_f) will be needed in the CAPM calculation to calculate the cost of equity. "The risk-free rate of return should be selected that corresponds to the investment horizon. Investors with short-term investment horizons view 30-day U.S Treasury bills as virtually risk-free. For T-bills held for the 30-day period, the nominal returns are guaranteed, although their real return may fluctuate because of inflation" (Kasper, 1997:145).

"In the derivation of the CAPM it is necessary to consider an asset, the returns of which have zero variance and zero covariance with any other asset – i.e. an asset with no risk. Such an asset would provide investors with a small but positive real return to compensate them for their temporary illiquidity while holding the asset. Furthermore the model

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assumes that investors can both borrow and lend at this risk free rate. Harrington (1983) notes that the risk-free asset is the rate that coerces investors to choose between current or future consumption and thus represents the price of time.

For the CAPM to accurately reflect reality, an investor's choice of assets must, in essence, depend solely on expected returns and aversion of risk. In a dynamic market zero variance can only exist for a single period. In a multi-period world, if 90-day T-bills were used, as the proxy for R_f and the single period were longer than 90 days, the rate of return on the bills may change from period to period. Such a change implies uncertain return on the reinvestment – implying variance or risk" (Firer, 1993: 27).

"There are, in addition, practical problems which Harrington identifies with using T-bill rate. Firstly, such rates are influenced by the Central Bank intervention in the economy and thus rates will reflect more than investor's required compensation for illiquidity and their expectations concerning inflation. A second practical problem with using a T-bill rate is the significant variability over time, which these instruments have demonstrated. Finally, there is empirical evidence that the intercept of the security market line is consistently higher than Treasury security rates. Because of this evidence and the fact that central bank activity precludes a free market rate, many practitioners suggest the use of a long-term government bond rate or a high quality industrial bond rate as a proxy for the risk free rate. Although longer-term rates are not as volatile, their use remains an approximation and is not based on theory" (Firer, 1993: 27-28). Nevertheless, for the above reasons, and because it is a capital market instrument, a long-term government bond was used as proxy for the risk free rate (R_f) in this study.

3.8.2. The Market Return (R_m)

"Developing the estimated market return depends upon estimating the real risk-free rate, inflation and the market risk premium" (Kasper, 1997: 146). Harrington (1983) observed that many studies assume the past is an adequate mirror of the investors' expected market premium and that in seeking a way of estimating R_m, it is important to address the method of calculation, the length of the past period used and the proxy used for the

market. "Some analysts argue that the current long term risk free rate should be used for the additive portion, R_f, of CAPM, but the historical long-run risk free rate should be used to develop the market risk premium rather than the 30-day Treasury bill rates. Some argue that current risk-free rates should be used because the formulation of CAPM uses a contemporaneous estimate of R_f and market return" (Kasper, 1997: 146).

"For the South African user, perhaps the best rule of thumb that can be given is to use the T-bill to estimate the risk free rate (making an adjustment, where considered appropriate, for expected changes in inflation) and a value of the order of 9% for the market risk premium" (Firer, 1993:27-28).

In a study conducted by J.P. Morgan Equities Ltd, Busetti & Fermoyle (2003: 5-6) found the average annual rate of return before tax for the past 43 years where as follows:

- Equities   19.0%
- Bonds   10.4%
- Fixed deposits   9.9%
- Inflation   9.2%

This was taken as an indication of the market return (R_m) for this study.

3.8.3. Selecting Beta

Beta measures the covariance between the returns on a particular share with the returns on the market as a whole and is usually measured by a market index. The beta value for a share indicates the sensitivity of that share to general market movements. Arnold (1998: 299) has a discussion on calculating beta. He says that in order to make the capital asset pricing model workable for making decisions concerning the future, it is necessary to calculate the future beta. The future cannot be foreseen hence it is difficult to obtain an estimate of the likely co-movements of the returns on a share and the market portfolio. Arnold suggests that one approach is to substitute subjective probability beliefs, but acknowledges that this has obvious drawbacks. Further he cites that the most popular

method is 'ex-post' analysis, which is to observe the historic relationship between returns and assume that the covariance will persist into the future.

"Since the development of modern portfolio theory and the consequent emergence of asset pricing models, much effort in the finance literature has focused on accurate estimation of the parameters underpinning these models. The measure of systematic risk, or beta coefficient, has occupied a central role in asset pricing models and as such has been the focus of much attention in the canon of established literature in Financial Economics" (Bowie & Bradfield, 1993: 6-7). Bowie & Bradfield, (1993: 6-7) say the "major considerations that should be taken into account when estimating beta coefficients on the JSE are (i) the thinly traded nature of the JSE; (ii) the choice of appropriate market proxy; (iii) the inclusion of prior beliefs about the systematic risk measures; (iv) the distributions of security returns; and finally, (v) the time varying element of systematic risk."

I have chosen to use Cadiz stockbroking for selection of beta estimates because:
- The service provides statistically sound estimates of beta together with the standard error thereof.
- They are widely published in Accounting Journals.
- Professor David Bradfield has been an advisor to many pension fund managers.
- The financial risk service is based on an ongoing research programme at the University of Cape Town (UCT), and the American and United Kingdom experience.

Cadiz Stockbroking provides up-to-date risk measures and associated statistics of the sector indices and the stocks listed on the Johannesburg Stock Exchange (JSE). Cadiz Stockbroking implements two important refinements in their estimation process. Firstly, they implement a "**Bayesian adjustment,** which takes account of prior information on betas." Secondly, they implement a "thin-trading correction procedure, known as the **'trade-to-trade'** procedure"

3.8.4. Sensitivity analysis

The DCF is only as accurate as the assumptions underlying it, and the most direct way to delineate the margin of error is by varying the assumptions. This involves designing different operating or financial scenarios for the company and noting the results. Sensitivity analysis always focuses on the key line items that most affect the valuation. Our sensitivity analysis considers growth and cost of equity as the variables. The discount rate reflects the risk associated with the assets. The result of the sensitivity analysis is a range of values for the company or assets in question. A sensitivity analysis will be conducted using various discount rates for the adjustment of risk and the various methods of valuation i.e. P/E ratio method, DFCF method and the EVA method. A sensitivity analysis is also conducted with the various ranges of growth and K_e.

3.9. Valuing Unquoted companies

Due to Flint Construction cc being an unlisted company one would now consider the valuation of unquoted firms. According to Arnold (1998: 752) the principles of valuation are the same for companies with a quoted share price on an exchange and for unquoted firms. However, he points out some additional factors to be considered with regards to unquoted firms. They are as follows:

- "There may be a lower quality and quantity of information. The reporting statements tend to be less revealing for unquoted firms. There may also be a management reluctance to release information, or managers may release information selectively so as to influence value.
- The shares may be subject to more risk. Firms at an early stage in their life cycle are more susceptible to failure than are established firms.
- The absence of a quotation usually means that the shares are less liquid. There is a reduced ability to sell quickly without moving the price. This lack of marketability can be a severe drawback.

- When a substantial stake is purchased in an unquoted firm, in order for the existing key managers to be encouraged to stay, they may be offered financial incentives such as 'golden handcuffs', which may influence value."

"Unquoted firms' shares tend to sell at significantly lower prices than those of quoted firms. Philip Marsden, deputy managing director of corporate finance at 3i discounts the price by anything from one-third to a half and the BDO Stoy Hayward/Acquisitions Monthly Private Company Price Index shows unquoted firms being sold at an average P/E ratio of 10-11 in 1996 compared with about 17 for quoted shares" (Arnold, 1998:753)

According to Krieger (1990), nowhere in business there is a need for greater care on the part of the buyer, or for that matter on the part of the seller, than when buying or selling a business. He goes on to say that it must be noted that buying a used (second-hand) business is far more complex than buying a second-hand motorcar. Krieger (1990) cautions the buyers and sellers of a business. Many buyers have found to their regret that acquiring a business can be extremely complicated. Krieger (1990) asserts that the buyer must at all times remember the old rule of *Caveat emptor* ('let the buyer beware'). Buyers also through ignorance can omit (to their ultimate detriment) to fully investigate vital areas of the business being acquired. The seller may have held back information or he may have found some way to 'dress-up' the business and thus hide a flaw in its make-up. On the other hand the seller must be careful of disposing his interests too cheaply, and must try to get a fair price.

4. DATA ANALYSIS, RESULTS & DISCUSSION

4.1. Ratio Analysis

The ratio analysis pertinent to the valuations will now follow.

RATIO ANALYSIS FLINT CONSTRUCTION

	1998	1999	2000	2001	2002	Average
Return on average capital employed (%)	88.23	96.46	78.72	81.30	100.83	89.11
Net debt to equity (%)	1718.82	445.45	884.32	573.49	754.05	875.23
Return on net assets (%)	4.65	17.91	5.67	9.71	10.50	9.69
Current Ratio	0.84	1.01	0.88	0.88	0.79	0.88

Table 3: Ratio Analysis on the Flint Construction

RATIO ANALYSIS AVENG

	1998	1999	2000	2001	2002	Average
Return on average capital employed (%)	17.9	18.7	20.1	20.8	19.1	19.32
Net debt to equity (%)	63.1	64.6	74.5	181.2	196.1	63.1
Return on net assets (%)	17.9	18.7	20.1	20.8	19.2	19.34
Current Ratio	1.65	1.85	1.75	0.78	0.91	1.39

Table 4: Ratio Analysis Aveng

The net debt to equity ratios for Flint Construction cc is very high, with percentages ranging from 1718% in 1998 to 754% in 2002. This ratio means that for every R1 of capital provided by Mr K.G. Flint 1718.82 cents were was raised through loans in 1998, 445.45 cents in 1999, 884.32 cents in 2000, 573.49 cents in 2001 and 754.05 cents in 2002. The average net debt to equity ratio for the last five years for Flint Construction cc was 875.23%.

Aveng's net debt to equity ratios range from 63.1% in 1998 to 196.1% in 2002. The higher net debt to equity ratio in 2001 and 2002 can be explained by Aveng's acquisition of 63% of McConnell Dowell Corporation in Australia. Flint Construction cc is *very highly* geared, and can therefore be viewed to be very risky. The difference in gearing was taken into account in the beta calculation for use in the DFCF and EVA calculations.

Return on equity is the residual net profit available to shareholders, in listed companies. The return on equity for Flint Construction cc is 88.235, 96.46%, 78.72%, 81.30%and 100.83% for the years 1998,1999, 2000, 2001 and 2002 respectively. The average over the last five years is 89.11%. These returns are very high. When one compares the similar ratio to that of Aveng's, an average of 19.32% over the last five years was the return on equity. This ratio has thus been consistently high, indicating less risk than in Aveng.

The current ratio tells us that how well the assets of the company cover the liabilities of the firm. In Flint Construction cc, the current ratio averaged 0.88 over the last five years. If this ratio were over 1, then that would be an ideal situation. When considering the current ratio, the company can be viewed as being risky. The current ratio for Aveng (average for the last five years, 1.39) reveals that their assets adequately cover their current liabilities.

From the above analysis, it can be seen that while Flint Construction cc is more risky than Aveng in terms of liquidity, it is a lot less risky in terms of consistently high ROE. Thus, no adjustment was made in all valuations for liquidity.

	1998	1999	2000	2001	2002
Working Capital	1,783,396	1,347,147	2,106,932	2,092,148	1,411,818
EBIT	654,399	1,390,593	589,892	797,610	800,878
Working Capital / EBIT	272.52	96.88	357.17	262.30	176.28

Table 5: Working capital to EBIT Ratio's for Flint Construction cc

From Table 5, for every R1 of EBIT there was R272.52, R96.88, R357.17, R262.30 and R176.28 of working capital for the years 1998, 1999, 2000, 2001 and 2002 respectively. One must note that the working capital requirement is financed by the high overdraft and factoring. According to literature, there usually is a plan to reduce or diminish the high debt levels after a management buyout. However, in the projections over the next 5 years, we have not made any allowance for change in the working capital requirements. These were implicitly taken into account by Mr K. G. Flint during the structured interview.

4.2. Net Asset Value Method (NAV)

From Table 6, NAV of R464, 551 were calculated for Flint Construction cc. In the valuation of the NAV the factors of goodwill and intellectual capital has not been valued or added on. This is purely physical asset based.

Years	ACTUAL						
	1996	1997	1998	1999	2000	2001	2002
Net Asset Value	105,331	31,369	180,300	731,783	467,307	569,457	464,551
Long Term Debt	507,971	364,885	338,864	277,326	57,208	117,270	91,447
Short Term Debt	2,483,152	3,329,614	2,760,173	2,982,377	4,075,266	3,148,513	3,411,507
Asset	3,096,454	3,725,868	3,279,337	3,991,486	4,599,781	3,835,240	3,967,505

Table 6: Showing the Net Asset Value (NAV) of Flint Construction cc.
(Data Obtained from Appendix 1 Balance sheet)

The Net Asset Value method to value a firm has the following disadvantages:

- Based on historic information in the balance sheet.
- Land and buildings are often shown at cost rather than market value; thus the balance sheet can provide a significant over or under valuation of assets' current value.
- Plant and machinery is shown at purchase price less depreciation amount.
- Stock is valued at lower of cost or net realizable value which can lead to a significant under-estimate, as the market value can appreciate to a figure far higher than either of these.
- Goodwill, provisions, merger accounting, debtors, intangible brand value are a few balance sheet entries vulnerable to subjective estimation, arbitrary method and even clinical manipulation.

The valuation of intellectual capital is very subjective in nature. If a value is to be allocated for intellectual capital it will probably be the salaries of the intellectual staff of Flint Construction cc. If we had to put a value to the intellectual capital, it would

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probably be approximately eighty-five percent of the capitalized annual salary bill. The remainder fifteen percent of the salaried paid staff could probably be replaced quite easily, however the adjusted percent (85%) of salaried earners are skilled personnel who are not very easily replaceable. Further, the 85% is staff that has been with the company for a while. This crude estimation of intellectual capital is approximately R4,590,000 per annum, before discounting by the cost of capital. After adjusting for risk from Table 10 by 29.83%, the intellectual capital will be approximately R3,220,803. This is conceptually different between the economic value of the salaries and what we pay.

In order to value intellectual capital one would then need to find the premium indicating the difference between the salaries what the market would pay and what Flint Construction cc pays. However, this would be a very difficult exercise, as one would expect resistance from other companies or individuals to reveal salaries. The loyalty of individuals to a company is also a very difficult construct to value.

Further, the company definitely possesses positive goodwill, which is very difficult to quantify. However, from the above discussion it is evident that the real value of Flint Construction cc is far in excess of NAV. Based on the above disadvantages, including the difficulty in estimating goodwill and intellectual capital, we exclude this method from calculating a 'fair' value of Flint Construction cc.

4.3. Price Earnings Ratio Method (P/E ratio)

From the Business day a list of all companies in the construction industry was collected and adjusted to determine the Price earnings ratio of Flint Construction cc. The average prices earnings ratio for the industry is 7.52 (Table 7). From the questionnaire it was suggested that a total of –3.5 (Appendix 5, Questionnaire) should be used as an adjustment figure on the average P/E ratio of the industry to arrive at the P/E ratio for Flint Construction cc.

PRICE EARNINGS RATIO (PER)   **Share price / earnings per share**

BUSINESS DAY	20-Jan-03	30-Jan-03	4-Feb-03	5-Feb-03	17-Mar-03	18-Mar-03	Average	Average
P/E AVERAGE OF THE CONSTRUCTION SECTOR	7.88	7.61	7.59	7.61	6.93	6.76	Aveng Only	7.52
AGI	8.30	7.50	7.50	7.50	6.30	6.00		7.42
AVENG	9.00	8.50	8.60	8.80	7.00	7.00	8.38	8.38
BASREAD	3.20	3.00	2.90	3.00	13.20	11.40		5.06
BUILDMAX	9.40	8.90	8.90	8.90	7.80	7.80		8.78
CASHBIL	8.40	8.90	8.60	8.60	7.30	7.10		8.36
CEMENCO	2.70	2.70	2.60	2.60	2.60	2.60		2.64
CERAMIC	12.20	12.10	11.70	11.70	9.30	9.30		11.40
CONCOR	9.30	8.70	8.70	8.70	6.00	6.00		8.28
DAWN	8.80	8.80	8.80	8.80	5.90	5.60		8.22
DORBYL	5.70	5.50	5.50	5.50	4.10	3.90		5.26
ELBGROUP	4.60	4.90	4.90	4.60	4.60	4.40		4.72
GROUP5	7.40	7.10	7.20	7.30	5.90	5.80		6.98
ILIAD	7.10	6.40	6.20	6.20	5.90	5.90		6.36
ITLTILE	12.10	12.20	12.20	12.20	10.10	10.10		11.76
M&RHLD	9.00	7.80	8.10	8.20	7.70	7.80		8.16
MASNITE	5.70	5.70	5.70	5.70	5.20	5.20		5.60
PPC	11.30	10.90	11.00	11.20	9.90	9.90		10.86
WBHO	7.70	7.30	7.50	7.50	5.90	5.80		7.18
Adjustment From Questionnaire Appendix 6							-3.50	-3.50
P/E ratio for Flint Construction							4.88	4.02
% Adjustment for risk							41.77	46.52

VALUE OF FLINT CONSTRUCTION USING THE P/E METHOD

Earnings (EAIAT) for 2002 From Flint Construction cc Financials in Appendix 1	416,735	416,735
Company Value	2,033,668	1,676,665

Table 7: Showing the P/E ratio for Flint Construction and of Listed Companies

From Table 7 it can be seen that the value of Flint Construction cc is R1, 676, 665 using the industry average P/E ratio. Using Aveng's P/E ratio a company value of R2, 033,668 was derived. The average of Aveng's P/E ratio was better than the average of the sector of 7.5. The differences in profitability, gearing and liquidity (current ratio) ratios, and the risk of Flint Construction are reflected in the P/E ratio, as adjusted from the questionnaire (Appendix 5). Aveng's P/E ratio of 8.38 was adjusted for risk by −3.5 points, which is a 41.77% adjustment for risk.

Table 8 shows the range of lowest and highest values of Flint Construction based on the lowest and highest average P/E ratios for the sector, for the dates referred to in Table 7 above. Note that the lowest P/E ratio is 2.64 for Cemenco, and is considered to be an 'outlier', and is therefore excluded from this analysis. Clearly, according to this analysis, the value should be between R1, 9million and R4, 8 million. However, the gap between the ranges is too big.

	P/E Average	Company Value
Lowest for the Sector P/E (Average)	4.72	1,966,990
Highest for the Sector P/E (Average)	11.76	4,888,304

Table 8: Showing range of value for Flint construction based on P/E ratios for the construction sector

	Adjustment
Question 1 – prospects for the construction industry	-0.50
Question 2 – size of business and standing within the industry	0.00
Question 3 – the principal stakeholders	-1.00
Question 4 – negotiability of shares	-1.00
Question 5 – nature of assets	-1.00
Question 6 – gearing	-1.00
Question 7 – special skills	1.00
Total Adjustment required	**-3.50**
An adjustment made for **growth**	1.00
Adjusted points	**-2.50**

Table 9: Analysis of results of questionnaire with an adjustment for gearing

Table 9 shows the response of Mr K.G. Flint to the questionnaire (Appendix 5). From Table 9 it can be seen that after an adjustment for growth of 1, a total adjustment of −2.5 is necessary to obtain the P/E ratio of Flint Construction cc. Table 10 shows the value of Flint Construction cc after a −2.5 and −3.5 adjustments. An adjustment is made for question 6, which is with regards to gearing, because we have already taken gearing into consideration when the discounted factor is applied to the DFCF and EVA models. (This excludes the P/E ratio with regards to growth). Therefore the % adjustment for risk in the DFCF method will be 29.83%.

P/E point adjustment from Aveng	-2.50	-3.50
P/E after adjustment	5.88	4.88
Adjustment for Risk %	29.83	41.77
Company Value	2,450,403	2,033,668

Table 10: Sensitivity of value of Flint Construction with different P/E Ratios

The problems with the P/E methodology are:
- This method is subjective in that there is no proven method for converting the PE ratio of a listed company to the unlisted company being valued.
- The method focuses only on earnings of the company. It ignores the asset values and ability of the company to generate cash flows.
- There is difficulty in the selection of a listed company.
- The denominator in the P/E ratio is accounting earnings, which is influenced by arbitrary rules such as the use of historical cost in depreciation and inventory valuation.
- P/E ratios is related to the business cycle

When trying to value Flint Construction using the P/E method, I have experienced some of the above problems, specifically in selecting the P/E of the listed company, and obtaining subjective information from Mr K.G. Flint during the interview.

The following are the advantages of the P/E ratio method:
- This method is a popular method due to its simplicity.
- It takes account of the earnings performance of the firm.

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4.4. Discounted Free Cash Flow Method (DFCF)

The value of Flint Construction cc will now be calculated using the discounted free cash flow method (DFCF). This method involves determining the value of a stream of cash flows for a five-year time horizon and to perpetuity. DFCF valuation uses a discount rate that reflects the firm's cost of equity (k_e).

The last 6 years data for Flint Construction cc was used i.e. The Income Statement and Balance Sheet from years 1996 to 2002 and an interview was held with Mr K.G. Flint in order to determine the future cash flows. The pertinent results of the analysis follow.

4.4.1. Growth

Assumptions and Comments

Average Growth	Different method of growth		Actual						
		1996	1997	1998	1999	2000	2001	2002	
69	% Growth in Profit		-10.18	64.23	369.26	-63.52	42.76	11.94	
12	% Growth in Turnover		63.74	-20.69	48.18	5.13	-20.74	-3.19	
	ROE	61.90	230.29	56.84	23.05	50.79	51.61	92.36	
18	g=ROE x pb%	22.82	50.93	18.60	17.61	4.56	10.87	-2.73	
	pb%	36.86	22.12	32.72	76.41	8.98	21.05	-2.96	

Retained Earnings Method = EPS / NAV x pb% x 100

g = ROE x pb%

ROE = Net profit to ordinary shareholders / Shareholders' equity x 100

Pb% = Retained earnings or plough back

EPS = Earnings per share

Assumption: The payout ratio is calculated from director's annual remuneration.

Table 11: Showing different growth rates

The method of calculating growth using Return on equity and plough back percentage will be painting an incorrect picture, because the company had a very high ROE in 1997 of 230.29%. The director's annual remuneration was assumed to be the dividend payout

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and was adjusted for a fair salary to the director in each year. Using the ROE = b (1 − g) method to calculate growth, an average growth rate of 18% (Table 11) was calculated for the last 6 years. Due to the abnormal ROE in 1997, using this method of growth is flawed. Over the last 6 years an average of 12% growth on annual turnover was achieved and a 69% growth in net profit after taxation. Upon analysis of the growth rate in net profit, on a year on year basis, it can be seen that in 1999 Flint Construction cc had an astronomical growth of 369.26%. The reason for this being is that the company had a major growth spurt in terms of new jobs both nationally and across the borders of South Africa. Therefore, we will use the % growth in turnover of 12% in the terminal value calculation (Appendix 8)

4.4.2. Beta

The construction industry list on the JSE was researched. Aveng was the only company that had similar operations and business as Flint Construction cc i.e. railway construction. The current Beta for Flint Construction cc was calculated by taking the average Betas for Aveng then unlevering Beta at Aveng's average Debt to Equity ratio over the past 5 years; then relevering Beta at Flint Construction's average Debt to Equity ratio.

Table 12 shows the Beta for Aveng where the Beta's were from Cadiz as explained in section 3.8.3 of the literature review, using the FTSE/JSE all share index (J203) as the market proxy. A Beta of 0.45 (Table 12 below) was used for Aveng. From Cadiz the Beta for Aveng 2001 was 0.50 and for 2003 was 0.45 (Table 12). This shows that beta has remained reasonably stable. From the Cadiz 2003 report, the standard error was 0.21 for Aveng, so the beta is significant at the 95% level, and from the Cadiz 2001 report, with a standard error of 0.27 it is significant at the 90% level.

Sector	Security	Code	Beta
Other Construction	AVENG LTD	AEG	0.45
From Appendix 4: Tables 1 : # FTSE / JSE All Share Index (J203) as market proxy.			

Table 12: Showing the Beta for Aveng: Appendix 4: Source from Cadiz Stockbroking

Table 13 below shows the average debt to equity ratio for Aveng over the last 5 years. This average debt to equity ratio was used to un-lever Beta.

		1998	1999	2000	2001	2002
Total liabilities as a % of total shareholders' equity (%)		63.10	64.60	74.50	181.20	196.10
Average D/E Ratio Aveng	1.16	0.63	0.65	0.75	1.81	1.96

Table13: Showing the average debt to equity of Aveng. Source: Annual Financial Statements of Aveng

The un-levered Beta for Aveng was calculated to be 0.17 (Table 14). The un-levered Beta was then re-levered at the average debt to equity ratio (for the past 5 years) of Flint Construction cc to obtain the re-levered Beta of 1.14 (Table 14) for Flint Construction cc.

De-levering & Re-levering of Beta (B)

$B_l = B_u \times [1 + D/E(1-t)]$	0.45	For Aveng
$B_u = B_l / [1+D/E(1-t)]$	0.17	Of Aveng, average over the last five years
Where D/E = book value for Aveng =	1.16	From Table 5
t = tax rate % =	30.00	

	1998	1999	2000	2001	2002
Average debt to equity ratio	17.19	4.45	8.84	5.73	4.82
$B_l = B_u * [1 + D/E(1-t)]$	2.21	0.70	1.22	0.85	0.74

B_l average   1.14

Table 14: Showing the De-levering and re-levering of Beta for Flint Construction cc

4.4.3. Cost of Equity (CAPM)

The calculation of the cost of equity (using CAPM) will now follow.

The R_{153} stock was used as proxy for Risk free rate (R_f) from the Business Report. The R_{153} stock on the JSE is:

- Widely traded
- Long dating
- It was a big issue

and therefore is used as a proxy for the risk-free rate, R_f, as opposed to using other capital market instruments such as the short-term treasury bill (T-Bill). From the Business Report the R_{153} stock was used as proxy for the R_f (10.5%) (Business Times: 23 January 2003). There is a 0.1 % difference between the 20-year bond and the R_{153} stock.

The average rate of return of 20-year bonds is 10.4% (JPMorgan, 2003) and this can be used as a proxy for the risk-free rate. JPMorgan (2003) conducted a 43-year study on bonds annual rates of return from 1960 to 2002. I will use a rate of 19.0% from JP Morgan (2003) as a proxy for the market return, R_m, in our CAPM calculation. The rate of 19.0% was the annual rate of return on the ALSI (All Share Index on the JSE) over the last 43 years.

COST OF EQUITY			
CAPM, $R_i = R_f + B[R_m - R_f]$			
K_e	= Cost of Equity	20.21	%
R_f	= Risk Free Rate	10.50	R153- Stock "23 January 2003, Business Report
Beta (B)	= Beta, systematic risk	1.14	For Flint Construction cc
R_m	= Expected return on overall market	19.00	Appendix 5: From JP Morgan (2003:8) - AL SI Combined average for 43 years.
$(R_m - R_f)$	= Market risk premium	8.50	

Table15: Showing the calculation of Cost of Equity using CAPM

The cost of equity derived by CAPM is shown in Table 15 and is calculated to be **20.21%** for Flint Construction cc.

4.4.4. Calculation of Discounted Free Cash Flows (DFCF's)

This value was calculated from 2007 to infinity and on the assumption of a constant growth of 12% in turnover and the cost of equity as calculated by CAPM in Table 7 to 20.21%. At a 12% growth rate on future cash flow of 2007 (from Table 11) and a K_e of 20.21% to used to calculate future cash flows. A terminal value of R7,469,077 for Flint Construction is obtained. The assumptions and factors affecting the free cash flow forecasts are listed in Table 16. Discounting free cash flows was used to determine the net present value of the company. The value of Flint Construction cc using the above method was R4,178,913.

DISCOUNTED FREE CASH FLOW BASED VALUATION

	7	1	2	3	4	5	
	Actual			**Forecast**			**Terminal Value**
	2002	2003	2004	2005	2006	2007	2007 +
EBIT	**800,878**	**850,000**	**800,000**	**875,000**	**965,000**	**988,000**	
Add: Depreciation	220,000	263,277	208,113	164,873	130,868	104,048	
Working Capital Requirements	1,411,818	1,498,412	1,410,270	1,542,483	1,701,138	1,741,684	
Less: Increase (-)		-86,594		-132,213	-158,655	-40,545	
Add: Decrease (+)			88,142				
Less: Tax	-160,555	-178,581	-168,076	-183,833	-202,742	-207,574	
Less: Interest -Overdraft	-207,963	-254,730	-239,746	-262,222	-289,194	-296,086	
Fixed Capital Investment		-350,000		-300,000			
Cash Flow	652,360	243,372	688,432	161,605	445,277	547,842	**7,469,077**
Add: Terminal Value						7,469,077	
Total Cash Flow		243,372	688,432	161,605	445,277	8,016,918	
NPV of Cash Flows	**4,178,913**						
Value of Flint Construction cc	**4,178,913**						

Assumptions & Factors

1. Growth at 12% used in the Calculation of Terminal Value, 12% on Growth in Turnover.
2. Factoring and overdraft changes with the requirements in working capital
3. Interest charged at 17% - fixed for the next five years
4. Working Capital Requirements calculated with the % increase or decrease in EBIT
5. Tax rate of 30 % -From the Practical Tax Handbook for SMME's, 2003:T04/010
6. Purchase of Property in 2005 for the value R300, 000
7. Purchase of Vehicles in 2003 for the value of R350, 000
8. No. of Shares issued = 100
9. Ke - Cost of Equity = 20.21% - Table 7
10. Depreciation from the Depreciation Schedule - Appendix 6
11. EBIT also adjusted for the Gross Remuneration for Mr K.G.Flint
12. Terminal Value = FCFt $[(1+g)/(k-g)]$ - Appendix 8

  Where :   g = Assumed rate of growth of cash flow stream into the future

          k = Weighted average cost of capital = WACC

        FCFt = Free cash flow in year t, the last forecasted year
13. The Cost of Equity (Ke) was used instead of k (weighted average cost of capital)
14. No anticipated changes in Long-term debt.
15. EBIT figures obtained from Appendix 7 Income Statement Forecasts

Table 16: Discounted Free Cash Flow (DFCF) Calculation for Value of Flint Construction cc

Based on an assumption of growth of 12% (growth in turnover), the terminal value for Flint Construction cc is calculated (Appendix 8). This may be high for growth in perpetuity. On the other hand, inflation would be expected to be 7.70% (CPIX) (http://resbank.co.za), and thus real growth would be approximately 4.40% for Flint Construction cc.

The DFCF valuation is a major exercise in which estimates will have to be prepared on sales volume and sales prices, raw materials cost, operating expenses and a host of other variables. From the literature review cash flow models represented the most powerful method for valuing a company. This model is complicated to apply, because it requires a thorough understanding of the business, and the relationship of earnings and cash flow.

The disadvantage highlighted in the literature review was that DFCF basis of valuation will not necessarily produce a market valuation as the discount rate is the buyer's or seller's required rate of return and not necessarily the market rate of return. The main trouble with CAPM is that it is a static backward-looking theory.

4.5. Economic Value Added

The EVA calculation will follow, which will be used as a check on the DFCF method. Firstly, the historic EVA will be calculated followed by a forecasted EVA calculation. The reason for calculating historic EVA is to see if the company was providing value for the owner in the past, before looking into the future.

ECONOMIC VALUE ADDED (EVA)
EVA = ADJUSTED INVESTED CAPITAL X (ADJUSTED RETURN ON CAPITAL - WACC)

Return on Capital

	1996	1997	1998	1999	2000	2001	2002
+ Shareholders Equity (or NAV)	105,331	31,369	180,300	731,783	467,307	569,457	464,551
+ Total Debt	2,991,123	3,694,499	3,099,037	3,259,703	4,132,474	3,265,783	3,502,954
TOTAL	3,096,454	3,725,868	3,279,337	3,991,486	4,599,781	3,835,240	3,967,505
EBIT	306,991	482,456	654,399	1,390,593	589,892	797,610	800,878
- Tax	44,257	39,751	65,285	306,356	111,761	159,552	178,601
TOTAL	351,248	522,207	719,684	1,696,949	701,653	957,162	979,479
Return on Capital =	11.34	14.02	21.95	42.51	15.25	24.96	24.69
	Average	22.10					

Cost of Debt

Rd	= YTM (1-Tc)							
Kd	= Cost of Debt	=	11.90	%				
	= Yield to Maturity before tax- interest on							
YTM	long term	=	17					
Tc	= Tax rate	=	30					

Total Value of Long term debt	507,971	364,885	338,864	277,326	57,208	117,270	91,447
Wd Weighted Value of Debt	0.83	0.92	0.65	0.27	0.11	0.17	0.16

Cost of Equity

Ke	= Cost of Equity	=	20.21	%	From Table on CAPM Calculation			
Total Value of Equity		105,331	31,369	180,300	731,783	467,307	569,457	464,551
We Weighted Value Equity		0.17	0.08	0.35	0.73	0.89	0.83	0.84

Weighted Average Cost of Capital (WACC)

WACC	= Ke We + Kd Wd	13.33	12.56	14.79	17.93	19.30	18.79	18.84
		Average	16.51					

EVA =	Return on Capital - WACC	2002 =	5.84		Average =	5.60

Table 17: Showing Historic EVA (1996-2002)

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From Table 17 the WACC for Flint Construction cc was 5.84 % less than the return on capital, therefore for the year 2002 the company succeeded in creating value for the shareholder or owner.

ECONOMIC VALUE ADDED (EVA) ON FORECAST TILL 2007

Return on Capital

	2002	2003	2004	2005	2006	2007	Average
+ Shareholders Equity (or NAV)	464,551	432,460	416,789	392,278	429,045	473,165	428,747
+ Total Debt	3,502,954	3,519,771	3,302,950	3,612,602	3,984,184	4,079,144	3,699,730
TOTAL	3,967,505	3,952,230	3,719,740	4,004,880	4,413,228	4,552,308	4,128,477
EBIT	800,878	850,000	800,000	875,000	965,000	988,000	895,600
- Tax	178,601	160,555	178,581	168,076	183,833	202,742	178,758
TOTAL	979,479	1,010,555	978,581	1,043,076	1,148,833	1,190,742	1,074,358
Return on Capital =	24.69	25.57	26.31	26.05	26.03	26.16	**26.02**

Cost of Debt

Rd   =YTM (1-Tc)

Kd   = Cost of Debt   =   11.90   %

           = Yield to Maturity before tax- interest on

YTM   long term   =   17

Tc   = Tax rate   =   30

Total Value of Long term debt	507,971	89,290	84,038	91,917	101,371	103,787	**94,081**
Wd Weighted Value of Debt	0.83	0.17	0.17	0.19	0.19	0.18	**0.18**

Cost of Equity

Ke   = Cost of Equity   =   20.21   %   From Table 7 on CAPM Calculation

Total Value of Equity	105,331	432,460	416,789	392,278	429,045	473,165	**428,747**
We Weighted Value Equity	0.17	0.83	0.83	0.81	0.81	0.82	**0.82**

Weighted Average Cost of Capital (WACC)

WACC   = Ke We + Kd Wd   =   18.71   %

EVA =   Return on Capital - WACC   =   1.31

Only average figure 2003-2007 were used to calculate the EVA

Table 18: Showing Forecast EVA (2003-2007)

The figures from Table 18 are used to calculate the spread in Table 19.

		Actual	Forecast	Forecast	Forecast	Forecast	Forecast
		2002	**2003**	**2004**	**2005**	**2006**	**2007**
1	Asset value at the end of each Year	3,967,505	3,952,230	3,719,740	4,004,880	4,413,228	4,552,308
2	Asset Value at the beginning of each Year		3,967,505	3,952,230	3,719,740	4,004,880	4,413,228
3	ROA	24.69	25.57	26.31	26.05	26.03	26.16
4	WACC(from Table 13)	18.71	18.71	18.71	18.71	18.71	18.71
5	% Spread	5.97	6.85	7.59	7.33	7.32	7.44
6	%Spread x Asset Value at Beginning of each year (Line 2 x Line 5)		271,959	300,101	272,678	293,038	
7	**Beginning Capital of 2007**	**4,413,228**					
8	**NPV @ WACC (18.71%) (2003-2006) (Line 6)**	**14,604**					
	Value of Flint Construction cc (Line 7 + Line 8)	**4,427,833**					

Assumptions and Comments

WACC remains constant over the next five years (18.71%) - From Table 13
NAV From Table13, Appendix 7
ROC from table 13

Table 19: Showing the Valuation of Flint Construction cc using the EVA Method

From Table 19, the value of Flint Construction cc before adjustment for risk is R4,427,833. The adjustment for risk will be conducted later under the section of the sensitivity analysis of various risk adjustment percentages.

The literature review reveals that EVA is arguably more accurate than taking ordinary accounting figures. The adjustments for EVA have been criticised to be time-consuming and costly, and are based on subjective decisions.

4.6. Sensitivity Analysis DFCF Sensitivity to Growth in terminal value and Ke

METHOD OF VALUATION			% ADJUSTMENT FOR RISK		
DFCF Analysis Sensitivity to Growth in terminal value and Ke			**29.83**	**41.77**	**50.00**
@15% K_e	5%	3,245,083	2,276,979	1,889,738	1,622,541
	10%	4,298,465	3,016,107	2,503,163	2,149,232
	12%	5,078,853	3,563,682	2,957,614	2,539,427
	15%	7,371,764	5,172,550	4,292,865	3,685,882
@20% K_e	5%	2,728,693	1,914,644	1,589,024	1,364,347
	10%	3,580,162	2,512,095	2,084,868	1,790,081
	12%	4,210,965	2,954,711	2,452,209	2,105,483
	15%	6,064,369	4,255,190	3,531,518	3,032,185
@20.21% K_e	5%	2,709,543	1,901,206	1,577,872	1,354,771
	10%	3,553,600	2,493,457	2,069,400	1,776,800
	12%	4,178,913	2,932,220	2,433,543	2,089,456
	15%	6,016,184	4,221,380	3,503,458	3,008,092
@25% K_e	5%	2,318,801	1,627,035	1,350,328	1,159,400
	10%	3,013,066	2,114,180	1,754,625	1,506,533
	12%	3,527,405	2,475,077	2,054,145	1,763,703
	15%	5,038,620	3,535,452	2,934,185	2,519,310
P/E Ratio Method			2,450,403	2,033,668	1,746,120
EVA Method		4,427,833	3,106,880	2,578,499	2,213,916

Table 20: Showing the sensitivity of firm value with the various adjustments for risk and the different valuation methods.

From Table 20 it can be seen that as the adjustment for risk gets higher the value of the firm decreases e.g. with the P/E ratio method the value of Flint Construction cc moves from **R 2,450,403** (at adjusted risk of 29.83%) to R 1,746,120 (at adjusted risk of 50%). The effect of growth on the DFCF method of valuation can be seen in Figure 4 on the next page, where as the growth rate of the firm increases so does the value of the firm with the K_e remaining constant. But as growth remains constant and the K_e increases the value of the firm decreases.

At a k_e of 20.21% and a 29.83% adjustment for risk, the value of Flint Construction cc using 12% in terminal value calculation is **R2, 932,220.** Using the EVA method, the value of Flint Construction cc is **R3, 106,880.** Clearly, the range for the value of Flint

Construction cc based on the calculations and different methods presented herein, should be between R2, 450,403 and R3, 106,880.

SENSITIVITY ANALYSIS
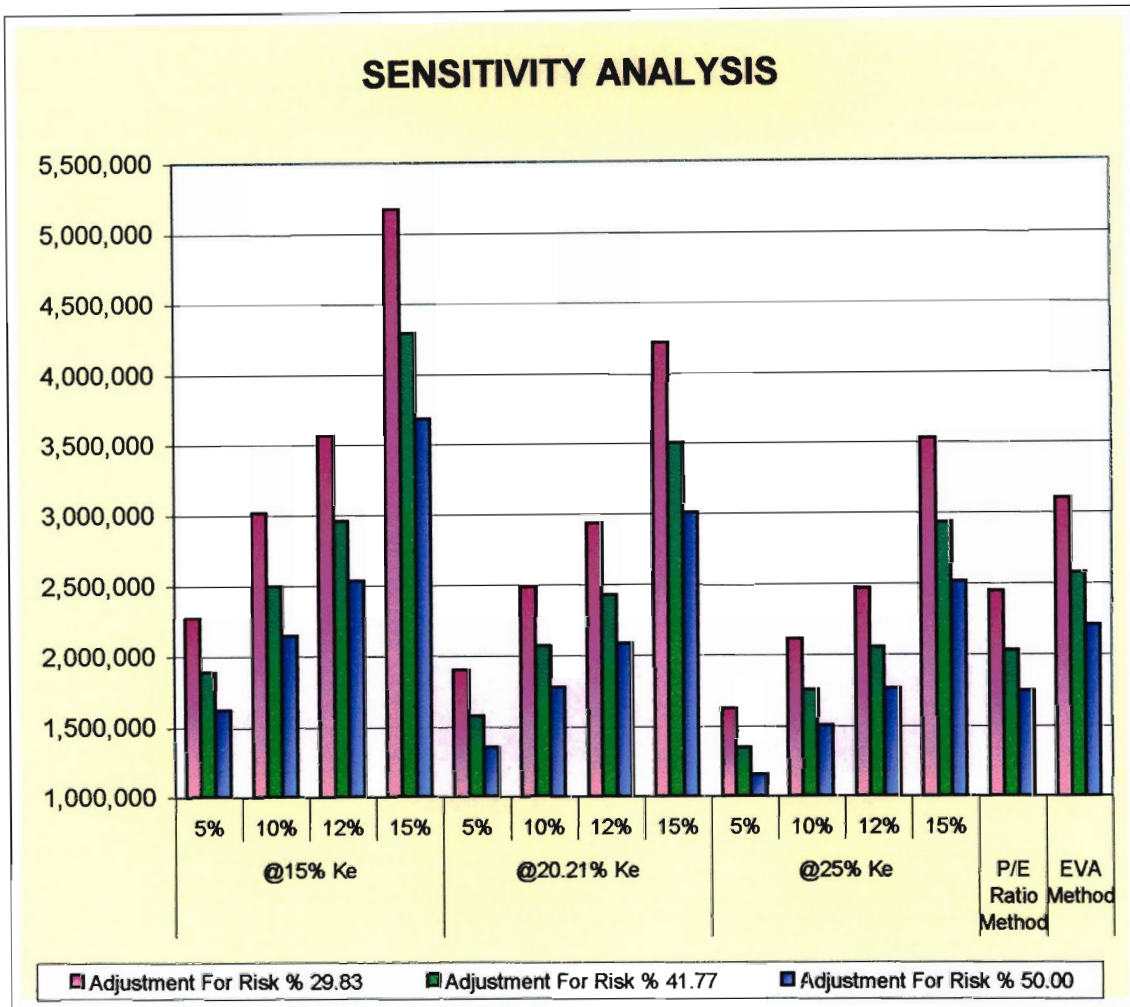
Figure 4: Sensitivity of the value of Flint Construction cc with the various percentages for risk adjustment, growth rates (in terminal value) and Kₑ and the Valuation methods.

As k_e increases from 15% to 25%, assuming the adjustment for risk and constant growth rates for terminal value calculations, the value of the firm decreases. Further, as the growth rates increases, so too does firm value. This could mean that a firm that is in a high growth rate sector, or a firm that has more future potential growth will be more highly valued.

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5. CONCLUSIONS and RECOMMENDATIONS

Figure 5 shows the valuation of Flint Construction cc discounted for risk at 29.83% for the various methods. It can be seen that after the adjustment for risk the value of Flint Construction cc ranges from R2,450,403 to R3,106,880. The P/E ratio method uses the average P/E ratio for Aveng and value of Flint Construction cc derived from this method is R2,450,403. By discounting (at a value of 29.83%) the value of Flint Construction cc obtained from the DFCF method at a 12% constant growth rate in the calculation of terminal value and at a K_e of 20.21% (the cost of equity derived from CAPM) the value of Flint Construction cc is R2,932,220. The EVA method discounted at 29.83% demonstrates a value of Flint Construction cc of R3,106,880. The average of the three methods provided a value of R2, 829,835.

Value of Flint Construction cc.
Using Different Valuation Methods

	DFCF @ g =	P/E Ratio	EVA Method	Average
Value	2,932,220	2,450,403	3,106,880	2,829,835

Company Value (R): 3,100,000 / 2,900,000 / 2,700,000 / 2,500,000 / 2,300,000

Different Valuation Methods
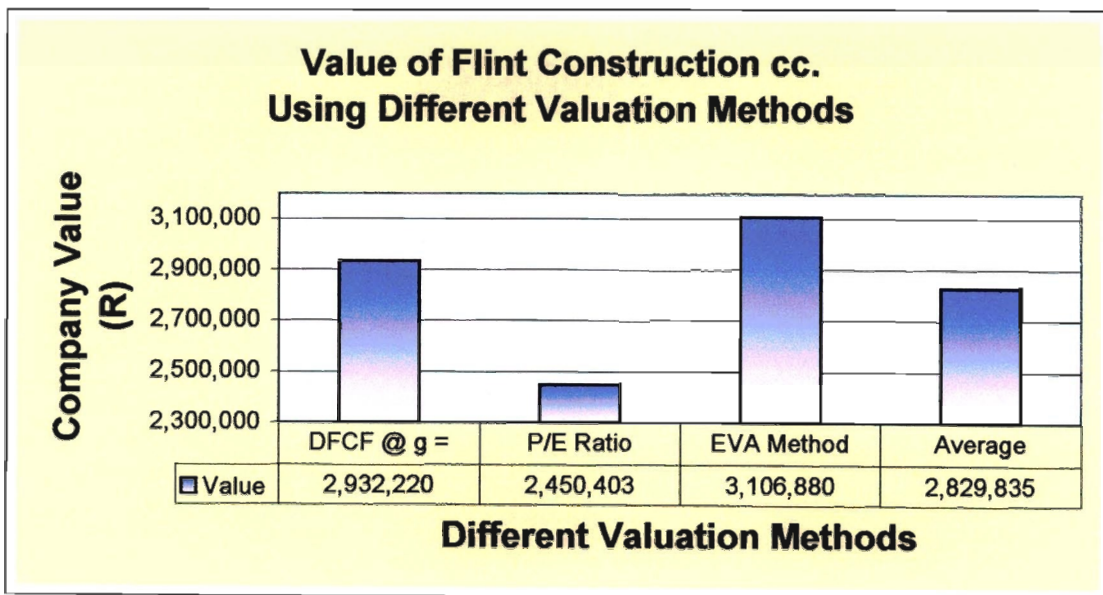
Figure 5: Shows a comparison of the different valuation methods after adjustment for risk at 29.83% and P/E ratio adjusted for the points from the questionnaire.

Flint Construction cc was actually sold at a value of R3, 000,000. The range for the Flint Construction cc obtained from the different valuation methods excluding the net asset value method was R2, 450, 403 to R3, 106, 880. The EVA method provided the closest estimate followed by the DFCF method and then the P/E ratio method. The average value of Flint Construction cc obtained using the EVA, DFCF and P/E method was R2, 829,835.

The price paid to Mr K.G. Flint was reasonable or 'fair', in light of the valuation performed. In light of the theoretical literature based on perfect markets and perfect information, although there are imperfections in the real world, there is no substantial difference in the valuation methods used when valuing Flint Construction cc. It can be concluded that Mr K.G.Flint has obtained a fair value for Flint Construction cc.

This dissertation was based on a case study and cannot be generalized. The recommendation would be to conduct a similar study on a number of companies to ascertain whether the Directors or owners obtained a fair value for their companies and which valuation technique provided the best estimate for company sale value. One could also test for significant differences between the various methods of valuation in order to determine if any one method significantly provided a better estimate of company value. Further, a study can be undertaken to see what happens to company value after a buyout. In other words, does MBO's create shareholder wealth, especially in unlisted companies? This study can be undertaken to include other companies and provide comparisons of valuation techniques used in unlisted companies.

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APPENDICES

Appendix 1: Financials Statements for Flint Construction cc for the past 7 years.

Income Statement

	1	2	3	4	5	6	7
				ACTUAL			
	1996	1997	1998	1999	2000	2001	2002
Net Sales	9,737,356	15,943,945	12,645,287	18,737,952	19,699,729	15,614,365	15,115,886
Cost of Sales	8,056,408	12,571,637	9,559,407	14,925,090	16,151,146	12,469,115	11,931,153
Opening Stock	204,187	96,000	28,000	356,204	430,275	396,352	224,636
Purchases	7,948,221	12,503,637	9,887,611	14,999,161	16,117,223	12,297,399	11,922,074
Closing Stock	96,000	28,000	356,204	430,275	396,352	224,636	215,558
Gross Profit	1,680,948	3,372,308	3,085,880	3,812,862	3,548,583	3,145,250	3,184,733
Gross Profit %	17.26%	21.15%	24.40%	20.35%	18.01%	20.14%	21.07%
Other Income	23,041	20,878	49,397	109,231	111,993	135,508	71,292
Overheads	1,396,998	2,910,730	2,480,878	2,531,500	3,070,684	2,483,148	2,455,147
Accounting Fees	1,750	1,668	2,868	15,095	38,034	19,342	15,140
Advertising & Marketing	8,896	14,479	9,254	16,703	2,204	1,618	10,811
Bank & Credit Card Charges	23,119	52,872	67,504	49,602	81,468	82,251	80,233
Consult Fees	2,700	19,800	2,698	0	0	0	0
Donations	870	20	3,073	5,900	1,439	200	1,860
Electricity & Water	11,303	14,255	15,662	31,578	16,264	22,250	13,751
Entertainment	3,834	24,352	22,687	28,919	5,356	10,357	41,880
Fuel & Maintenance	711,405	1,889,837	1,305,326	1,352,633	1,774,226	1,444,795	1,235,841
Insurance	87,428	142,061	145,042	98,766	94,122	75,239	126,011
JSB's	22,648	15,982	27,671	48,987	50,200	39,341	39,747
Legal Costs	6,600	636	4,523	15,726	37,172	2,845	0
Other	6,254	20,071	29,883	31,997	121,434	42,671	113,124
Owner's Remuneration	65,200	72,240	102,486	168,664	237,362	273,912	429,071
Postage & Telephone	156,509	253,554	266,039	279,907	464,927	389,928	336,379
Printing & Stationery	46,388	14,029	22,567	86,299	52,690	55,036	60,804
Rental & Rates	1,771	1,599	2,564	30,000	121,894	73,094	54,276
Repairs & Maintenance	52,358	162,944	28,170	40,557	9,974	32,981	27,232
Travel & Accommodation	80,481	108,219	192,501	187,804	11,744	10,506	52,427
Bad Debts			102,587	16,074	3,260	14,371	22,570
Loss on Sale of Assets			61,690	20,715	8,327	21,921	22,648
Depreciation	172,684	174,352	168,569	174,238	175,949	164,402	200,413

Appendix 1: Financials Statements for Flint Construction cc for the past 7 years (continued)

	1	2	3	4	5	6	7
	ACTUAL						
	1996	1997	1998	1999	2000	2001	2002
Adjustments	65,200	72,240	102,486	168,664	237,362	293,912	429,071
EBIT	**306,991**	**482,456**	**654,399**	**1,390,593**	**589,892**	**797,610**	**800,878**
Interest	65,170	54,898					
- Overdraft	94,297	295,054	436,782	369,408	217,357	265,769	205,542
EBT	**147,524**	**132,504**	**217,617**	**1,021,185**	**372,535**	**531,841**	**595,336**
Taxation	44,257	39,751	65,285	306,356	111,761	159,552	178,601
EAIAT	**103,267**	**92,753**	**152,332**	**714,830**	**260,775**	**372,289**	**416,735**

Summarized Balance Sheet for Flint Construction cc

	1996	1997	1998	1999	2000	2001	2002
Assets							
NON-CURRENT ASSETS	**938,470**	**1,128,773**	**949,198**	**975,759**	**1,011,066**	**1,064,761**	**1,274,044**
Property, plant and equipment	828,990	1,019,345	837,357	861,847	907,399	919,695	1,105,151
Investments	109,480	109,428	111,841	113,912	103,667	145,066	168,893
CURRENT ASSETS	**2,157,984**	**2,706,523**	**2,330,139**	**3,015,727**	**3,588,715**	**2,770,579**	**2,693,461**
Work in Progress	96,000	28,000	356,204	430,275	396,352	224,636	215,558
Accounts Receivable	2,024,694	2,586,291	1,870,952	2,440,207	3,140,729	2,525,832	2,196,248
Tax refundable						20,111	
Cash resources and deposits	37,290	92,232	102,983	145,245	51,634		281,655
TOTAL ASSETS	**3,096,454**	**3,835,296**	**3,279,337**	**3,991,486**	**4,599,781**	**3,835,340**	**3,967,505**
Equity and Liabilities							
CAPITAL AND RESERVES	**105,331**	**140,797**	**180,300**	**731,783**	**467,307**	**569,457**	**464,551**
Members contribution	100	100	100	100	100	100	100
Accumulated profits	105,231	140,697	180,200	731,683	467,207	569,357	464,451
NON-CURRENT LIABILITIES	**507,971**	**364,885**	**338,864**	**277,326**	**57,208**	**117,270**	**91,447**
Loans from member			256,380	145,716		35,739	
Long term liabilities	507,971	364,885	82,484	40,454			10,386
Deferred taxation				91,156	57,208	81,531	81,061
CURRENT LIABILTIES	**2,483,152**	**3,329,614**	**2,760,173**	**2,982,377**	**4,075,266**	**3,148,513**	**3,411,507**
Accounts payable	1,403,858	1,701,140	837,494	1,325,424	1,730,071	961,921	1,810,627
Taxation payable	147,769	33,150	52,763	215,491	238,263	19,373	42,323
Bank overdraft	895,286	1,406,714	1,783,396	1,347,147	2,106,932	2,092,148	1,411,818
Short term portion of Installment sale creditors	36,239	188,610	86,520	94,315		75,071	146,739
TOTAL EQUITY AND LIABILITIES	**3,096,454**	**3,835,296**	**3,279,337**	**3,991,486**	**4,599,781**	**3,835,240**	**3,967,505**

CONSOLIDATED BALANCE SHEET	1998 Rm	1999 Rm	2000 Rm	2001 Rm	2002 Rm
Property, plant and equipment	505.2	527.5	505.1	1464.4	**1770**
Goodwill				1050.5	**1075.7**
Investments	740.7	438.7	440.3	618.5	**507.9**
Inventories and receivables	1434	1430	1575.4	2647.6	**4270.1**
Cash and cash equivalents	523.3	693.6	755.6	368	**678.6**
Total Current Assets	1957.3	2123.6	2331	3015.6	4948.7
Total assets	3203.2	3089.6	3276.4	6149	**8302.3**
Deferred taxation	51.2	61.7	64.1	76.5	**66.9**
Payables	983.2	957.8	1209.4	2323.3	**3563.5**
Interest-bearing borrowings	205.1	193	125.1	1562.6	**1868.3**
Total Current Liabilities	1188.3	1150.8	1334.5	3885.9	5431.8
Total liabilities	1239.5	1212.5	1398.6	3962.4	**5498.6**
Net assets	1963.7	1877.3	1877.8	2186.6	**2803.7**
Equity	1549.9	1468.2	1616.3	1841.7	**2555**
Convertible debentures	177.7	177.7	171.2	171.2	
Total ordinary shareholders' funds	1727.6	1645.9	1787.5	2012.9	**2555**
Minority interests	236.1	231.4	90.3	173.7	**248.7**
Total shareholders' funds	1963.7	1877.3	1877.6	2186.6	**2803.7**

CONSOLIDATED INCOME STATEMENT

	1998	1999	2000	2001	2002
	Rm	**Rm**	**Rm**	**Rm**	**Rm**
Revenue	4342.9	4392.8	4926.1	10317.1	**13185.2**
Operating income before depreciation	316.5	298.7	332.5	722.9	**1008.3**
Depreciation	73	77.5	81.4	292.1	**364.2**
Operating income	243.5	221.2	251.1	430.8	**644.1**
Net financing costs	28.9	39.6	54.3	-111.3	**-194**
Income from associates	54.2	79.5	74.9	99.9	**113.8**
Amortisation of goodwill		-38.9	-10	-65.9	**-53.8**
Non-trading items	16	-4.5	-11.4	7.3	**-4.6**
Interest Paid	42.5	78.7	42.6	178.5	242.6
Income before taxation	342.6	296.9	358.9	360.8	**505.5**
Taxation	-85.9	-52.4	-78.8	-78.6	**-119.7**
Minorities	-44.7	-33.8	-16.4	-14.3	**-23.3**
Earnings	212	210.7	263.7	**267.9**	**362.5**
Headline earnings adjustment	-16.7	59.6	13.9	**58.6**	**58.4**
Headline earnings	195.3	270.3	277.6	326.5	**420.9**

CONSOLIDATED CASH FLOW STATEMENT

	1998 Rm	1999 Rm	2000 Rm	2001 Rm	2002 Rm
Cash available from operations	164.2	358.9	406.3	378.9	**296.1**
Dividends paid	-48.8	-91.8	-4.8	-63.3	**-79.3**
Net cash from operating activities	115.4	267.1	401.5	315.6	**216.8**
Net cash (used in)/from investing activities	-154	-395.8	-83.8	-2024.7	**-211.4**
Net cash from /(used in) financing activities	58.6	-64	23.6	529	**48.9**
Net increase/(decrease) in cash and cash equivalents	20	-192.7	341.3	-1180.1	**54.3**
SHARE PERFORMANCE (cents per share)					
Headline earnings	57.9	80.2	79.3	99.4	**111.2**
Diluted headline earnings	53.3	70.1	72.4	86.8	**107.3**
Earnings	62.9	62.5	75.4	81.6	**95.7**
Diluted earnings	56.2	53.4	67.3	71.5	**92.4**
Cash flow	48.7	106.5	114.1	106.4	**74.8**
Net asset value	459.9	435.7	453.9	517.1	**645**
Dividend			18.5	22.5	**27**
Closing share price			595	765	**800**

RETURNS AND PRODUCTIVITY	1998	1999	2000	2001	2002
	Rm	Rm	Rm	Rm	Rm
Return on average equity (%)	12.1	16	16.2	17.2	18.4
Return on average capital employed (%)	17.9	18.7	20.1	20.8	19.1
Total shareholders' funds to total assets (%)	61.3	60.8	57.3	35.6	33.8
Net debt to equity (%)	-16.2	-26.7	-33.6	54.6	42.4
Total liabilities as a % of total shareholders' equity (%)	63.1	64.6	74.5	181.2	196.1
Gross Margin (%)	16.4	16.8	16.4	16.1	15.7
Ebitda margin (%)	7.3	6.8	6.7	7	7.6
Ebit margin (%)	5.6	5	5.1	4.2	4.9
Revenue per employee (R'000)	324.8	335.8	399.2	462.8	550.8
Net interest cover	-10.3	-7.6	-6	4.8	3.9
Increase (decrease) in net borrowings	38	182	130	-1825.1	5
Return on net assets (%)	17.9	18.7	20.1	20.8	19.2
Fixed assets - expansion	45.3	72.9	87.2	324.8	315.6
Fixed assets - maintenance	80.7	92.9	45.4	211.3	387.5
Effective tax rate (%)	31.5	20.1	27.3	24.6	26.6
Dividend cover			4.3	4.4	4.1
Number of employees	13371	13080	12340	22291	23939
Number of shares (million)					
In issue	337	337	356.1	356.1	396.1
Weighted average	337	337	349.9	328.5	378.6
Diluted weighted average	377	394.6	392	383.4	392.3

STOCK EXCHANGE PERFORMANCE (cents per share)	1998 Rm	1999 Rm	2000 Rm	2001 Rm	2002 Rm
Market value per share					
– at year end			595	765	**800**
– highest			890	869	**880**
– lowest			420	570	**615**
- volume weighted average price			649	685	**779**
Earnings yield (%)			13.7	11.2	**11.4**
Dividend yield (%)			3.1	2.9	**3.4**
Market capitalisation at closing prices (Rm)			2118.9	2724.4	**3169.2**
Price earnings ratio at year end			7.3	8.9	**8.7**
Values of shares traded (Rm)			1464.3	879.5	**1465.9**
Number of shares traded (million)			207.5	135.5	**189.9**
Average price per share traded (cents)			706	649	**772**
Percentage of market capitalisation traded (%)			69.1	32.3	**46.3**
Liquidity (%)			58.3	38	**47.9**
Weekly rand volume (Rm)			28	18	**28**

Appendix 3: Ratio Analysis Flint Construction cc

		1998	1999	2000	2001	2002
ASSETS						
Total Current Assets		2,330,139	3,015,727	3,588,715	2,770,579	2,693,461
TOTAL ASSETS		3,279,337	3,991,486	4,599,781	3,835,340	3,967,505
Inventory		356,204	430,275	396,352	224,636	215,558
TAX RATE		30%				
LIABILITIES						
Total Current Liabilities		2,760,173	2,982,377	4,075,266	3,148,513	3,411,507
Total Liabilities		3,099,037	3,259,703	4,132,474	3,265,783	3,502,954
TOTAL LONG-TERM Liabilities		338,864	277,326	57,208	117,270	91,447
OWNERS EQUITY						
Total Shareholders Equity		180,300	731,783	467,307	569,457	464,551
Interest Cover						
EBIT		**654,399**	**1,390,593**	**589,892**	**797,610**	**800,878**
Interest		436,782	369,408	217,357	265,769	205,542
EAIAT		**152,332**	**714,830**	**260,775**	**372,289**	**416,735**
Gross Margin		**3,085,880**	**3,812,862**	**3,548,583**	**3,145,250**	**3,184,733**
Sales		12,645,287	18,737,952	19,699,729	15,614,365	15,115,886
Taxes		**65,285**	**306,356**	**111,761**	**159,552**	**178,601**
Return on average equity (%)	=(Net Profit to ordinary shareholders/Shareholder's Equity) x 100	84.49	97.68	55.80	65.38	89.71
Return on average capital employed (%)	=(Net profit + Interest x (1-Tax rate)/Capital Employed) x 100	88.23	96.46	78.72	81.30	100.83
Net debt to equity (%)	=(Short-term loans +Long-term loans / Shareholders equity) x 100	1718.82	445.45	884.32	573.49	754.05
Total liabilities as a % of total shareholders' equity (%)	=(Total Liabilities / Total shareholders equity) x 100	1718.82	445.45	884.32	573.49	754.05
Gross Margin (%)	=(Gross Margin / Sales) x 100	24.40	20.35	18.01	20.14	21.07
Net interest cover	=(Net Income + Interest expense + Tax expense)/ Interest Expense	1.50	3.76	2.71	3.00	3.90
Return on net assets (%)	=(Net Income / Total assets) x 100	4.65	17.91	5.67	9.71	10.50
Net Profit Margin %	=(Net Profit / Sales) x 100	1.20	3.81	1.32	2.38	2.76
Quick Ratio	=(Cash + Short-term investments + Accounts Receivables) / Current Liabilities	0.72	0.87	0.78	0.81	0.73
Current Ratio	= Current assets / current liabilities	0.84	1.01	0.88	0.88	0.79

Appendix 4: Beta's from Cadiz For the Construction Industry: 2003

Sector	Security	Code	No. Of months	Alpha	Beta	Std error	Total risk	Unique Risk
Other Construction	AVENG LTD	AEG	45.00	0.01	0.45	0.21	8.78	8.32
Other Construction	BASIL READ HLDGS LTD	BSR	60.00	0.00	0.60	0.39	22.77	22.30
Other Construction	CEMENTATION CO AFR LTD	CMT	46.00	0.04	0.65	0.50	24.29	23.80
Other Construction	CONCOR LTD RCON	CNC	60.00	0.00	0.66	0.34	20.06	19.40
Other Construction	ELB GROUP LTD ORD	ELR	60.00	0.01	0.19	0.18	10.58	10.48
Other Construction	GROUP FIVE LTD ORD	GRF	60.00	0.02	0.65	0.28	16.60	15.84
Other Construction	MURRAY AND ROBERTS H ORD	MUR	60.00	0.01	0.76	0.24	14.98	13.77
Other Construction	WILSON BAYLY HLM-OVC ORD	WBO	60.00	0.02	0.55	0.28	15.67	15.16

Tables 1.#   FTSE/JSE All Share index (J203) as market proxy

University of Natal - Durban

Questionnaire - Valuations of business prior to Management Buy-out

TO ANSWER THE QUESTIONS PLEASE TICK☑ THE APPROPRIATE BOX OR GIVE A WRITTEN RESPONSE WHERE APPLICABLE.

One method of calculating the value of a firm is by using the price-earnings ratio of a listed company and adjusting as necessary for an unlisted company. Your time and input herein to ascertain views concerning the company will be highly appreciated.

A By how much would you adjust the price-earnings ratio for the following factors?

1 Prospects for the construction industry.

-1	
-0.5	☑
0	
0.5	
1	

2 The size of the business and its standing within the industry.

-1	
-0.5	
0	☑
0.5	
1	

3 The principal shareholders – If individuals of limited resources and influence hold a large proportion of the shares in the company, it may be more risky than comparable listed companies held by large and prosperous companies.

-1	☑
-0.5	
0	
0.5	
1	

4 Negotiability – If a share is not listed on the stock exchange, the market within which it can be traded in is restricted.

-1	✔
-0.5	
0	
0.5	
1	

5 The nature of the assets – Highly specialised assets are likely to result in high operating leverage with high fixed costs and low variable costs so that profits fluctuate sharply with sales volumes. They also confine a firm to a particular industry.

-1	✔
-0.5	
0	
0.5	
1	

6 Gearing – The use of borrowed funds introduces financial leverage and financial risk.

-1	✔
-0.5	
0	
0.5	
1	

7 Special skills – If a firm has an unbalanced management team. It may be dependant on the technical or other skill of one or more individuals and will thus be more risky.

-1	
-0.5	
0	
0.5	
1	✔

8 What do you think the price-earnings ratio for Flint Construction should be?

1	
2	
3	✔
4	
>5	

9 What do you expect the growth rate In Turnover for the company to be for the following time horizons?

2003	2004	2005	2006	2007
15%	11%	12%	12%	11%

10 What are the current opportunities and strengths for Flint Construction?

Niche Market

Off shore projects

Not highly Unionized

11 What do you think are major weaknesses or threats for Flint Construction?

Highly labour intensive

Plant and equipment not very good

Susceptible to movements in gold and other metal price's

Appendix 6: Depreciation Schedule For 2003 To 2007 for Flint Construction cc

DEPRECIATION SCHEDULE OF FIXED ASSETS

| DESCRIPTION | C/F | C/F | C/F | C/F | C/F | C/F | Depreciation | | | | |
	2002	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
LAND AND BUILDINGS	170818	170818	470818	470818	470818	470818					
MOTOR VEHICLES	621154	496923	397538	318031	254425	203540	124231	99385	79508	63606	50885
MACHINERY AND PLANT	209186	167349	133879	107103	85683	68546	41837	33470	26776	21421	17137
FURNITURE AND FITTINGS	40650	34553	29370	24964	21220	18037	6098	5183	4405	3745	3183
COMPUTER EQUIPMENT	63342	42230	28155	18771	12514	8343	21112	14075	9384	6256	4171
	1105150	911873	1059760	939687	844660	769284	193277	152113	120073	95028	75376

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Appendix 6: Depreciation Schedule For 2003 To 2007 for Flint Construction cc (continued)

MOTOR VEHICLES

DESCRIPTION	COST 28/02/2002	ACCUM DEPR in 2002	C/F 2002	C/F 2003	C/F 2004	C/F 2005	C/F 2006	C/F 2007	Depreciation 2003	2004	2005	2006	2007
Detroit Box Trailor	800	734	66	53	42	34	27	22	13	11	8	7	5
Toyota Dyna	44732	37482	7250	5800	4640	3712	2970	2376	1450	1160	928	742	594
Nissen UG 780	83333	65856	17477	13982	11185	8948	7159	5727	3495	2796	2237	1790	1432
Nissen Diesel	34211	27037	7174	5739	4591	3673	2938	2351	1435	1148	918	735	588
4 Ton AMC	133275	95289	37986	30389	24311	19449	15559	12447	7597	6078	4862	3890	3112
Mercedes 230 E	132000	90188	41812	33450	26760	21408	17126	13701	8362	6690	5352	4282	3425
Mazda 2200	0	0	0	0	0	0	0	0	0	0	0	0	0
Sprite Muskateer	13000	8798	4202	3362	2689	2151	1721	1377	840	672	538	430	344
AMC 4 Ton Truck	117500	77393	40107	32086	25668	20535	16428	13142	8021	6417	5134	4107	3286
Ford Bantam	19298	12448	6850	5480	4384	3507	2806	2245	1370	1096	877	701	561
Canopy for NMR 6709	2632	1698	934	747	598	478	383	306	187	149	120	96	77
Trailor	2193	1355	838	670	536	429	343	275	168	134	107	86	69
Mitsubishi Colt 1996	0	0	0	0	0	0	0	0	0	0	0	0	0
Audi Executive	86000	47105	38895	31116	24893	19914	15931	12745	7779	6223	4979	3983	3186
Ford Courier	0	0	0	0	0	0	0	0	0	0	0	0	0
Toyota Dyna 1994 2.5 ton	0	0	0	0	0	0	0	0	0	0	0	0	0
Sprite Caravan	5263	2400	2863	2290	1832	1466	1173	938	573	458	366	293	235
Canopy for NMR 6711	2456	976	1480	1184	947	758	606	485	296	237	189	152	121
Caravan	7456	2684	4772	3818	3054	2443	1955	1564	954	764	611	489	391
1994 Toyota Hilux 1800 SR	66667	22223	44444	35555	28444	22755	18204	14563	8889	7111	5689	4551	3641
Canopy & Bin NMR 5424	5500	1686	3814	3051	2441	1953	1562	1250	763	610	488	391	312
1998 Isuzu KB 200 Series	47000	11906	35094	28075	22460	17968	14375	11500	7019	5615	4492	3594	2875
1999 Isuzu KB 2000 Series	56974	13674	43300	34640	27712	22170	17736	14189	8660	6928	5542	4434	3547
1993 Opel Kadett	0	0	0	0	0	0	0	0	0	0	0	0	0
2000 Nissan G02 2.0 LWB	57018	9503	47515	38012	30409	24327	19462	15570	9503	7602	6082	4865	3892
2000 Nissan G02 2.0 LWB - Canopy	2632	351	2281	1824	1460	1168	934	747	456	365	292	234	187
2000 Nissan G02 2.0 LWB	54386	8158	46228	36982	29586	23669	18935	15148	9246	7396	5917	4734	3787
2001 Tata LPT 713S Freight Carrier	169800	16980	152820	122256	97805	78244	62595	50076	30564	24451	19561	15649	12519
Mazda Rustler Drifter	30702	1535	29167	23333	18667	14933	11947	9557	5833	4667	3733	2987	2389
Canopy for Isuzu	3850	64	3786	3029	2423	1938	1551	1241	757	606	485	388	310
New Vehicles		0	0	0	0	0	0	0	0	0	0	0	0
	1178677	557523	621154	496923	397538	318031	254425		124231	99385	79508	63606	50885

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MACHINERY AND PLANT													
	COST	ACCUM	C/F	C/F	C/F	C/F	C/F	C/F	Depreciation				
DESCRIPTION		DEPR in											
	28/02/2002	2002	2002	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
Balance	73786	60229	13557	10846	8676	6941	5553	4442	2711	2169	1735	1388	1111
Fibre cabana toilet	3365	2464	901	721	577	461	369	295	180	144	115	92	74
Welding machine	10000	7324	2676	2141	1713	1370	1096	877	535	428	343	274	219
Trolly ramp	1969	1420	549	439	351	281	225	180	110	88	70	56	45
Impact wrench drill	15380	10929	4451	3561	2849	2279	1823	1459	890	712	570	456	365
Generweld welding machine	12000	8461	3539	2831	2265	1812	1450	1160	708	566	453	362	290
Stihl TS5760 Quick Act	4900	3060	1840	1472	1178	942	754	603	368	294	236	188	151
Bernard engine 6HP	4071	2542	1529	1223	979	783	626	501	306	245	196	157	125
9 OHP Vanguard engine	2246	1403	843	674	540	432	345	276	169	135	108	86	69
Cheetah 9" grinder	2750	1600	1150	920	736	589	471	377	230	184	147	118	94
3 x Stihl TS 760 cut-off machines	13785	7904	5881	4705	3764	3011	2409	1927	1176	941	753	602	482
2 x MTX Wheel support sub ass	4038	2315	1723	1378	1103	882	706	565	345	276	221	176	141
1 x CVG9-2 9" Grinder	2450	1404	1046	837	669	536	428	343	209	167	134	107	86
1 x 9" Grinder model BV230	2350	1328	1022	818	654	523	419	335	204	164	131	105	84
Ruggerini RD 240 welding machine	5730	2992	2738	2190	1752	1402	1121	897	548	438	350	280	224
400 AMP Diesel welding machine	50000	23333	26667	21334	17067	13654	10923	8738	5333	4267	3413	2731	2185
300 AMP Mosa welding machine	35088	15626	19462	15570	12456	9965	7972	6377	3892	3114	2491	1993	1594
Drilling machine 1756 Bosch	1462	590	872	698	558	446	357	286	174	140	112	89	71
Rail Drilling Machine	8772	3439	5333	4266	3413	2730	2184	1748	1067	853	683	546	437
Rail Drilling Machine	12000	4000	8000	6400	5120	4096	3277	2621	1600	1280	1024	819	655
Makata Rauter	1658	531	1127	902	721	577	462	369	225	180	144	115	92
Ford Tractor & Carriage	14500	2417	12083	9666	7733	6186	4949	3959	2417	1933	1547	1237	990
2 x 10 Ton Rail Jacks	7000	1167	5833	4666	3733	2986	2389	1911	1167	933	747	597	478
ABAC Compressor 50LT 10mx6mm Air	1683	224	1459	1167	934	747	598	478	292	233	187	149	120
100L 2AP Compressor	2745	320	2425	1940	1552	1242	993	795	485	388	310	248	199
Two Wheel Grinder	3750	438	3312	2650	2120	1696	1357	1085	662	530	424	339	271
Hraulic Stipper - Motorised	3750	438	3312	2650	2120	1696	1357	1085	662	530	424	339	271
3 Hydraulic Strippers - Manual	4000	467	3533	2826	2261	1809	1447	1158	707	565	452	362	289
4 Wheel Grinder	2500	458	2042	1634	1307	1046	836	669	408	327	261	209	167
TS760 Stihl Cutter	6500	650	5850	4680	3744	2995	2396	1917	1170	936	749	599	479
CP 117 Jack Hammer	3600	420	3180	2544	2035	1628	1303	1042	636	509	407	326	261
Harris Cutting Ootfit LPG/OXY	2827	330	2497	1997	1598	1278	1023	818	499	399	320	256	205
Rail Inspection Trolley	18750	1563	17187	13750	11000	8800	7040	5632	3437	2750	2200	1760	1408
2 Cutting Torch Attachment Harris	7532	628	6904	5524	4419	3535	2828	2262	1381	1105	884	707	566
2 Harris 49-2 Cut Attachment	6927	577	6350	5080	4064	3251	2601	2081	1270	1016	813	650	520
TS760 Disc Cutter	7531	502	7029	5623	4499	3599	2879	2303	1406	1125	900	720	576
C/Block Tralift 3T Unchain x 2	4250	354	3896	3117	2493	1995	1596	1277	779	623	499	399	319
86A Mechanical Jack 5Ton x 2	3978	265	3713	2970	2376	1901	1521	1217	743	594	475	380	304
86A Mechanical Jack 5Ton x 2	3978	265	3713	2970	2376	1901	1521	1217	743	594	475	380	304
Bosch A Grinder 230mm 2300Watt	1025	51	974	779	623	499	399	319	195	156	125	100	80
Big Toe Model 22 10 Ton Jack 300	2530	42	2488	1990	1592	1274	1019	815	498	398	318	255	204
5 KVA Honda Generator	6500	0	6500	5200	4160	3328	2662	2130	1300	1040	832	666	532
	383657	174471	209186	167349	133879	107103	85683	68546	41837	33470	26776	21421	17137

Appendix 6: Depreciation Schedule For 2003 To 2007 for Flint Construction cc (continued)

OFFICE EQUIPMENT DESCRIPTION	COST 28/02/2002	ACCUM DEPR in 2002	C/F 2002	C/F 2003	C/F 2004	C/F 2005	C/F 2006	C/F 2007	Depreciation 2003	2004	2005	2006	2007
Balance brought forward	32305	22255	10050	8543	7261	6172	5246	4459	1508	1281	1089	926	787
Cellphones x 3	2413	1476	937	796	677	575	489	416	141	119	102	86	73
Heater	525	321	204	173	147	125	106	91	31	26	22	19	16
Photocopier	12819	7486	5333	4533	3853	3275	2784	2366	800	680	578	491	418
Lawn mower	876	506	370	315	267	227	193	164	56	47	40	34	29
Stationery cubboard & stack chairs	1623	764	859	730	621	528	448	381	129	110	93	79	67
Computor chairs	1711	982	729	620	527	448	381	323	109	93	79	67	57
Kelvinator fridge	1184	539	645	548	466	396	337	286	97	82	70	59	51
Combination desk & chair	4833	2124	2709	2303	1957	1664	1414	1202	406	345	294	250	212
Stationery cupboards	837	362	475	404	343	292	248	211	71	61	51	44	37
Trenline desk & chairs boardroom	3903	1626	2277	1935	1645	1398	1189	1010	342	290	247	210	178
6 X Chairs for boardroom	3568	1248	2320	1972	1676	1425	1211	1029	348	296	251	214	182
Boardroom table, bookcase	2110	681	1429	1215	1032	878	746	634	214	182	155	132	112
Service star work centre	2316	594	1722	1464	1244	1058	899	764	258	220	187	159	135
Nokia 6210 Cellphone	2298	259	2039	1733	1473	1252	1065	905	306	260	221	188	160
Pentax MZ-50SLR Zoom Camera	2192	55	2137	1817	1544	1312	1116	948	321	272	232	197	167
EFCO 8400-Brush Cutter	3364	42	3322	2824	2400	2040	1734	1474	498	424	360	306	260
Panasonic KXFP 85 P/P Fax	2015	0	2015	1713	1456	1237	1052	894	302	257	218	186	158
1200 Study Unit	1092	14	1078	916	779	662	563	478	162	137	117	99	84
	81984	41333	40650	34553	29370	24964	21220	18037	6098	5183	4405	3745	3183

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COMPUTER EQUIPMENT

DESCRIPTION	COST 28/02/2002	ACCUM DEPR in 2002	C/F 2002	C/F 2003	C/F 2004	C/F 2005	C/F 2006	C/F 2007	Depreciation 2003	2004	2005	2006	2007
Balance	10296	9879	417	278	185	124	82	55	139	93	62	41	27
Pentium Olive Computor	5403	4889	514	343	228	152	102	68	171	114	76	51	34
Lexmark Inkjet printer	2109	1908	201	134	89	60	40	26	67	45	30	20	13
Modem	600	532	68	45	30	20	13	9	23	15	10	7	4
HP Laser Jet 6L UPS	4038	3307	731	487	325	217	144	96	244	162	108	72	48
DTK Computor	3772	3089	683	455	304	202	135	90	228	152	101	67	45
I x HP 690C & Deskfit printer	2175	1602	573	382	255	170	113	75	191	127	85	57	38
Epson LX 1050 printer	1828	1567	261	174	116	77	52	34	87	58	39	26	17
Pentium 11. Motherboard,keyboard	9956	7005	2951	1967	1312	875	583	389	984	656	437	291	194
Xylo 430 monitor,cd rom, modem	6120	4307	1813	1209	806	537	358	239	604	403	269	179	119
Pentium notebook	13535	10304	3231	2154	1436	957	638	426	1077	718	479	319	213
Pentium 11 400MMX, 32MB ED	8820	5661	3159	2106	1404	936	624	416	1053	702	468	312	208
Pentium 111 450 motherboard	11689	7504	4185	2790	1860	1240	827	551	1395	930	620	413	276
HP Ink jet priNter	697	422	275	183	122	81	54	36	92	61	41	27	18
Oki 8p laser printer	2605	1576	1029	686	457	305	203	136	343	229	152	102	68
Intel Pentium celeron 400 MMX	3123	1928	1195	797	531	354	236	157	398	266	177	118	79
Intel Pentium celeron 333MMX	4018	2728	1290	860	573	382	255	170	430	287	191	127	85
AMD K6 11 500 Mhz & printer	4732	2279	2453	1635	1090	727	485	323	818	545	363	242	162
Mecer A450 Pentium 111 Laptop	16711	6190	10521	7014	4676	3118	2079	1386	3507	2338	1559	1039	693
Compaq 1200XL 700MHZ Laptop Computer	10351	2588	7763	5175	3451	2300	1534	1023	2587	1725	1150	767	511
Intel Coppermine Pentium III 800MHZCP	1754	487	1267	844	563	375	250	167	422	281	188	125	83
PR-Eprson Colour	916	229	687	458	305	204	136	90	229	153	102	68	45
Sony MVC-FD75 D/Camera	4385	731	3654	2436	1624	1083	722	481	1218	812	541	361	241
Mon-Samsumng 450 Ser No 16098	877	97	780	520	347	231	154	103	260	173	116	77	51
HP-CD Writer 9510I	1315	73	1242	828	552	368	245	164	414	276	184	123	82
Genius HRG Parallel Scanner	868	217	651	434	289	193	129	86	217	145	96	64	43
Toshiba Notbook - CD Rom Laptop	3800	844	2956	1971	1314	876	584	389	985	657	438	292	195
Motherboard	1525	212	1313	875	584	389	259	173	438	292	195	130	86
Pentium 4 Mercer 1.5GHz CPU 400MHz	8687	1207	7480	4987	3325	2217	1478	985	2493	1662	1108	739	493
	146704	83362	63342	42230	28155	18771	12514	8343	21112	14075	9384	6256	4171

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Assumptions & Comments for the Depreciation Schedules

1. DV = diminishing value

2. C/F for each year are the closing stocks for the previous years fixed asset values.

3. Purchase of Property in 2005 for the value R300, 000

4. Purchase of Vehicles in 2003 for the value of R350, 000

5. No Depreciation on Land and Buildings

6. MOTOR VEHICLES depreciated at 20% DV

7. MACHINERY AND PLANT depreciated at 20% DV

8. OFFICE EQUIPMENT depreciated at 15% DV

9. COMPUTER EQUIPMENT depreciated at 33.33% DV

Appendix 7: Forecast Financial Statement For 2003 to 2007 for Flint Construction cc

Forecast Income Statement for Flint Construction cc from 2003 to 2007						
	7	1	2	3	4	5
	Actual	Forecast				
	2002	2003	2004	2005	2006	2007
Net Sales	15,115,886	17,427,831	19,294,396	21,520,530	24,017,640	26,728,311
Less: Cost of Sales	11,931,153	13,464,063	15,176,254	17,087,581	19,220,018	21,597,886
Opening Stock	224,636	302,318	348,557	385,888	430,411	480,353
Add: Purchases	11,922,074	13,352,723	14,955,050	16,749,656	18,759,614	21,010,768
Less: Closing Stock	215,558	348,557	385,888	430,411	480,353	534,566
Gross Profit	3,184,733	3,963,769	4,118,142	4,432,949	4,797,622	5,130,425
Gross Profit %	21.07%	22.74%	21.34%	20.60%	19.98%	19.19%
Add: Other Income	71,292	74,857	78,599	82,529	86,656	90,989
Less;: Overheads	2,455,147	3,188,625	3,396,741	3,640,478	3,919,278	4,233,414
Accounting Fees	15,140	16,503	17,988	19,607	21,371	23,295
Advertising & Marketing	10,811	11,784	12,845	14,001	15,261	16,634
Bank & Credit Card Charges	80,233	87,454	95,325	103,904	113,255	123,448
Consult Fees	0	0	0	0	0	0
Donations	1,860	2,027	2,210	2,409	2,626	2,862
Electricity & Water	13,751	14,989	16,338	17,808	19,411	21,158
Entertainment	41,880	45,649	49,758	54,236	59,117	64,438
Fuel & Maintenance	1,235,841	1,347,067	1,468,303	1,600,450	1,744,490	1,901,495
Insurance	126,011	137,352	149,714	163,188	177,875	193,884
JSB's	39,747	43,324	47,223	51,474	56,106	61,156
Legal Costs	0	0	0	0	0	0
Other	113,124	123,305	134,403	146,499	159,684	174,055
Owner's Remuneration	429,071	467,687	509,779	555,659	605,669	660,179
Postage & Telephone	336,379	366,653	399,652	435,621	474,826	517,561
Printing & Stationery	60,804	66,276	72,241	78,743	85,830	93,554
Rental & Rates	54,276	59,161	64,485	70,289	76,615	83,510
Repairs & Maintenance	27,232	29,683	32,354	35,266	38,440	41,900
Travel & Accommodation	52,427	57,145	62,289	67,894	74,005	80,665
Bad Debts	22,570	24,601	26,815	29,229	31,859	34,727
Loss on Sale of Assets	22,648	24,686	26,908	29,330	31,970	34,847
Depreciation	200,413	263,277	208,113	164,873	130,868	104,048
Less: Adjustments	429,071					
EBIT	800,878	850,000	800,000	875,000	965,000	988,000

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Assumptions and comments for the prediction of the income statement

Sales	Turnover increases year on year as follows: 2003: 15%, 2004: 11%, 2005:12%, 2006: 12% and 2007: 11% (An average of 12% growth in turnover) – From Appendix 5- Questionnaire
Cost of Sales	9% Inflation and Adjusted for Owners Remuneration (which increased at 7%)
Opening Stock	2% of previous years turnover or jobs
Purchases	Increased at 12% as the turnover
Closing Stock	2% of this years turnover
Other Income	Expected to increase at 5% of previous years income
Other Expenses	Costs increase at 9%
Depreciation	Depreciation from the Depreciation Schedule: Appendix 6

Appendix 7: Forecast Financial Statement For 2003 to 2007 for Flint Construction cc (continued)

	Actual 2002	Forecast 2003	Forecast 2004	Forecast 2005	Forecast 2006	Forecast 2007
Assets						
NON-CURRENT ASSETS	**1,274,044**	1,095,966	1,243,854	1,140,349	1,045,321	988,005
Property, plant and equipment	1,105,151	911873	1059760	939687	844660	769284
Investments	168,893	184,093	184,093	200,662	200,662	218,721
CURRENT ASSETS	**2,693,461**	2,856,264	2,475,886	2,864,531	3,367,907	3,564,303
Work in Progress	215,558	220,000	205,000	215,000	225,000	250,000
Accounts Receivable	2,196,248	2,486,264	2,120,886	2,499,531	2,992,907	3,164,303
Tax refundable						
Cash resources and deposits	281,655	150,000	150,000	150,000	150,000	150,000
TOTAL ASSETS	**3,967,505**	3,952,230	3,719,740	4,004,880	4,413,228	4,552,308
Equity and Liabilities						
CAPITAL AND RESERVES	**464,551**	432,460	416,789	392,278	429,045	473,165
Members contribution	100	100	100	100	100	100
Accumulated profits	464,451	432,360	416,689	392,178	428,945	473,065
NON-CURRENT LIABILITIES	**91,447**	89,290	84,038	91,917	101,371	103,787
Loans from member		0	0	0	0	0
Long term liabilities	10,386	0	0	0	0	0
Deferred taxation	81,061	89,290	84,038	91,917	101,371	103,787
CURRENT LIABILITIES	**3,411,507**	3,430,480	3,218,912	3,520,685	3,882,813	3,975,357
Accounts payable	1,810,627	1,921,682	1,808,642	1,978,202	2,181,674	2,233,673
Taxation payable	42,323	0	0	0	0	0
Bank overdraft	1,411,818	1,498,412	1,410,270	1,542,483	1,701,138	1,741,684
Short term portion of installment sale creditors	146,739	10,386				
TOTAL EQUITY AND LIABILITIES	3,967,505	3,952,231	3,719,739	4,004,880	4,413,228	4,552,308

Assumptions and Comments for Forecast Balance Sheet 2003-2007 for Flint Construction cc

1. Fixed assets from depreciation schedule Appendix 6.

2. Investments expected to increase by 9% every second year, using 2002 as the base year.

3. Work in progress was calculated on expected work to be completed at the end of each financial year.

4. Accounts receivable approximated from historic levels of receivables.

5. Cash Resources, based on the level that Mr K.G. Flint forecasts to maintain at the end of each year.

6. Members contribution is constant.

7. Accumulated profits calculated from Cash Flow analysis, Table 8. , EBIT subtract Interest and Taxes

8. No loans to be taken out from the Member.

9. No long-term liabilities are expected to be incurred.

10. Half of the tax liabilities in each of the financial years were deferred.

11. Accounts payable calculated with the % increase or decrease in EBIT (from FCF Table 8)

12. Expected to have no tax payable at the end of each financial year.

13. Bank overdraft calculated with the % increase or decrease in EBIT (from FCF Table 8)

14. No future short-term installments.

15. The company does not want further their long-term debt levels.

Appendix 8: Calculation of the Terminal Value

Terminal Value = FCFt [(1+g)/(k-g)]	= 547841 x [(1+12%) / (20.21%-12%)]	
	= 7,469,077	
Where: Assumed rate of growth of cash flow stream g = into the future	= **12%**	Average growth in turnover
k = Weighted average cost of capital = WACC	= **20.21**	From CAPM calculation Table 7
FCFt = Free cash flow in year t, the last forecasted year	**547,842**	Free Cash Flow Calculation - Table 8
The Cost of Equity (Ke) was used instead of k (weighted average cost of capital)		

Costs of Listing

The listing fees (excluding VAT of 14%) of the JSE, which are extremely low by international standards, are as follows:

Monetary value of securities listed		Listing Fee (excl. VAT)
Not exceeding	**Rands**	**Rands**
ditto	500 000	752-40
"	2 500 000	3 980-88
"	5 000 000	7 746-30
"	25 000 000	23 993-58
"	50 000 000	32 707-74
"	125 000 000	49 169-34
"	250 000 000	71 979-60
"	375 000 000	89 410-20
"	500 000 000	111 681-24
"	750 000 000	138 365-22
"	1 000 000 000	167 630-16
"	1 250 000 000	200 553-36
"	2 500 000 000	240 578-76
"	3 750 000 000	284 261-28
"	5 000 000 000	328 050-96
exceeding	7 500 000 000	349 569-60
	10 000 000 000	415 632-60
	10 000 000 000	503 321-40

The   JSE   documentation   fees   (excluding   VAT)   are   as   follows:

Prescribed inspection fees:				Rand (excluding VAT)	Rand (Including VAT)
Articles of Association					
per new company listed				1 858	2 118-12
per subsidiary of a	listed	company		937	1 068-18
re-examination fee	per	company		937	1 068-18
minor amendments				187	213-18
Debenture Trust Deed					
per trust deed				1858	2 118-12
re-examination fee per deed				937	1 068-18
minor amendments				937	213-18

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Share incentive/option scheme		
Salient features circular	1 858	2 118-12
re-examination fee per deed	937	1 068-18
minor amendments	187	213-18
Main Board listing		
Includes pre-listing statement and Part II documentation. Excludes articles of association, debenture trust deeds and share incentive/option schemes.	27 000	30 780-00
DCM and VCM listing		
Includes circular or pre-listing statement, letter of allocation and underwriting agreement; if offer is in conjunction with a listing of a new company by way of renounceable offer, the fees payable as per above will be in addition to this fee.	27 000	30 780-00
Rights offers, clay-back offers and specific share buy-backs		
Includes circular or pre-listing statement, letter of allocation and underwriting agreement; if offer is in conjunction with a listing of a new company by way of renounceable offer, the fees payable as per above will be in addition to this fee.	9 362	10 672-68
Company reconstruction		
Includes circular and pre-listing statement; excludes re-examination for articles of association, debenture trust deeds, share incentive/option schemes	27 000	30 780-00
Acquisition/disposal/unbundling/schemes and offer documents Circular	4 666	5 319-24
Capital restructure Circular	4 666	5 319-24
Issue for cash and general share buy backs Circular	1 858	2 118-12
Odd lot offer Circular	1 858	2 118-12

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Transfer of section	1 858	2 118-12
Consolidation/sub-division Circular	1 858	2 118-12
Change of name Circular	1 858	2 118-12
Capitalization issues (including scrip dividends) circular (capitalization issue) circular (scrip dividend)	937 1 858	1 068-18 2 118-12
Competent persons report	550 per hour, per reader	627 per hour, per reader

Professional Advisors' and other Fees:
- Sponsor:
  Negotiable, depending on the size and complexity of the listing.

- Corporate advisor:
  Negotiable, depending on the size and complexity of the listing and the amount of work required.

- Legal Advisor:
  Fees based on time.

- Accountant:
  Fees based on time.

- Transfer Secretary:
  Variable

- Public Relations Consultant:
  Variable

- Printers:
  Variable

Other Costs Attached to the Listing:
- Creation duty:
  On the increase in share capital (5c per R20)

- Issue duty:
  0,25% on issue price

- MST/stamp duty on transfer of shares (if applicable):
  0,5% on consideration

- Underwriting fees (if required):
  Negotiable (approximately 2,5% of value underwritten).

- Bank Charges:
  Variable.

- Brokerage:
  Variable.

In addition, after listing, the company will also have to pay an annual listing fee (in February of each year except the year of listing) calculated as follows:

(a)   in respect of equity securities listed, an amount equal to 0.04% of the market value of all the equity securities in the company listed calculated at the average of the middle market price of such securities on the last business day before the end of March, June, September and December of the previous year on which such securities were dealt in, subject to a minimum fee of R21 000 (excluding VAT) and a maximum fee of R97 000 (excluding VAT) in each year and calculated to the nearest R50;

(b)   in respect of issuers with preference shares listed, an amount of R6 000 (excluding VAT); and

(c)   in respect of issuers with debentures or loan stock listed, an amount of R3 000 (excluding VAT).

Appendix 10: Differences between the old and the new listings requirements for JSE
(Source: http://www.jse.co.za)

What are the fundamental differences between the old and the new listings requirements?	• Eligibility to become a sponsor has been extended to corporate, legal and other advisers. Fees for application have been introduced.
	• Subscribed capital for Main Board and Development Stage Sector (DSS) listing has been increased from R2 000 000 to R25 000 000 and R20 000 000 to R100 000 000 respectively.
	• A Profit history of R1000 000 has been raised to R25 000 000.
	• 10 % Shareholder spread and 300 public shareholders have been increased to 20% and 500 respectively.
	• Conditions for repurchase of Securities and Reduction of Capital sections have been included in section 5.
	• Companies no longer need to offer a portion of their securities to the sponsor when placing shares.
	• Adoption of South African Mineral Resource Committee (SAMREC) for mineral companies to ensure consistency with internationally accepted principles.
	• Discontinuation of listing of pyramid and low and high voting shares.
	• Financial Information must be prepared in accordance with South African Statements of Generally Accepted Accounting Practice ("SA GAP") or IAS.
	• In addition to complying with Schedule 4 of the Companies Act, listed companies are to disclose the following:
	Borrowings, Headline Earnings per share, Shareholder spread, Major Shareholders, Share Incentive schemes, Profit Forecasts, Unlisted Securities, special resolutions, Issues for cash, Director's Interests and emoluments and Code of corporate practice and conduct.

Appendix 11: Criteria in terms of capital and percentage holding for listing on the JSE (Source: http://www.jse.co.za)

CRITERIA	MB	DCM	VCM
Minimum subscribed capital	R25 000 000	R1 000 000	R500 000
Minimum no. shares in issue	R25 000 000	R1 000 000	R1 000 000
Minimum Audit Profit before tax	R 8 000 000	R500 000	Not necessary
% held by the Public	20%		
No. of Public Shareholders: Equity Shares Preference Shares Debentures	500 50 25	75 25 10	75 25 10