THE RELATIONSHIP BETWEEN NET OPERATING INCOME AND THE VALUE OF FIRMS QUOTED AT THE NAIROBI STOCK EXCHANGE

BY

JOHN WATHUTA GATHUYA

A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION, FACULTY OF COMMERCE, UNIVERSITY OF NAIROBI

NOVEMBER 2005

DECLARATION

This project is my original work and has not been presented for a degree in any other university.

Signed................... Date. March 17 2006

This project has been submitted for examination with my approval as university supervisor.

Signed

Mr. M.N. Anyangu .... Date...17.3.06

Lecturer, Department of Accounting

Faculty of Commerce

University of Nairobi

DEDICATION

To my parents Loise Wambui and Peter Gathuya.

To my love; Grace Wanjiru and the unborn.

ACKNOWLEDGEMENTS

My special appreciation goes to my supervisor Mr. Moses N. Anyangu for the advice and support throughout the period of writing this project.

My thanks also go to my parents, my brother Sam and his family and my wife Grace Wanjiru for their support and understanding throughout the entire course.

Lastly I thank all my colleagues at Oakland Media Services Limited for their encouragement.

ABSTRACT

Although many business people make decisions on profitability and relate them to the value of firms quite well at a decision making level, this relationship is not clear to many of them. In Kenya, Financial managers struggle to understand the relationship but no study has been done to affirm the decisions. There is therefore a staring gap and this is the reason for which this study has been done to find out if there is any relationship between the Net Operating Income, and the value of firms quoted at the Nairobi Stock Exchange.

To achieve this objective, regression analysis was used to establish the relationship. F-ANOVA test showed that the relationship is statistically significant for all the firms under study. The study failed to reject the hypothesis that there is no significant relationship between the Net Operating Income and the value of the firm. That means that the Net Operating Income has a significant effect in the value of the firms quoted at the Nairobi Stock Exchange. The y-intercept showed a significant value of y meaning that there are other factors that significantly affect the value of the firm, other than the profit.

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CHAPTER ONE
INTRODUCTION

1.1   Background

The argument as to the relationship between net operating income and the value of a firm has remained a puzzle in Finance for many years. Some researchers believe that there is a fundamental relationship between the two parameters, yet others argue to the contrary, that other factors other than the Net Operating Income are responsible for the value of firms.

Early studies conducted by researchers like Durand (1959) indicated that the value of firms is affected by the Net Operating Income (Profitability) and not capital structure.

According to the Net Operating Income approach, the cost of equity is assumed to increase linearly with leverage. As a result, the weighted average cost of capital remains constant and the total value of the firm also remains constant, as leverage is changed.

The proponents of the Net Operating Income approach assume that investors have an entirely different reaction to corporate debt from the traditional investors. They assume that investors value Net Operating Income (or Earnings Before Interest and Tax-EBIT) at a constant rate of Weighted Average Cost of Capital.

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A constant WACC results in a constant value for the firm regardless of its use of debt and also a constant WACC, along with a constant cost of debt, implies that cost of equity increases with leverage, and hence that the stockholders regard the use of leverage as increasing the riskness of the equity cash flows.

Ross and Westerfield (2002) argue that a firm cannot change the total value of its outstanding securities by changing the proportions of its capital structure. The value of the firm is always the same under different capital structures.

The proponents of the Net Income approach are of the view that a firm can increase its total valuation and lower its cost of capital, as it increases the degree of leverage (Brigham et al, 1976).

Modigiliani and Miller (1958) have a similar position to that of Durand. They advocate that the relationship between the leverage and the cost of capital is explained by the net operating income approach. They make a radical departure from the traditional approach, and offer behavioral justification for having the cost of capital remain constant through all levels of leverage, and put forward an argument that the total risk for all security holders of a firm is not altered by the changes in the capital structure. The total value of the firm must be the same regardless of its financing mix.

Arbitrage precludes perfect substitute from selling at different prices in the same market. In this case the perfect substitutes are two or more firms in the same homogeneous risk class and that differ only with respect to capital structure.

In this respect, MM contends that the value of these firms has to be the same; otherwise arbitragers will enter and drive the values of the two firms together. The essence of their argument is that arbitragers are able to substitute personal leverage for corporate leverage.

A firm cannot change its value, or its weighted average cost of capital by leverage. The financing decision does not matter from the standpoint of our objective of maximizing market price per share. One capital structure is as good as the next (MM). Therefore, the value of the firm is affected by other variables rather than capital structure.

The value of a firm depends upon its expected earning streams and the required rate of return. Thus, the capital structure decision can affect the value of the firm either by changing the expected earnings or the cost of capital or both. Leverage cannot change the total expected earnings of the firm, but it can affect residue earnings of the shareholders.

The issue of valuation is very important in Finance and Management. A great deal of controversy still surrounds this issue.

This study is aimed at establishing whether there is any relationship between the net operating income and the value of Kenyan firms. The study involved analyzing

profitability of firms quoted at the Nairobi Stock Exchange for a period of 10 years and comparing it with its valuation, which was represented by the share prices.

This period is considered long enough to provide sufficient variables to assist in determining a reliable regression model so as to ascertain the strength of the relationship.

1.2   Statement of the Problem

Theories advanced show conflicting results on what is responsible for changes in the value of a firm. According to the Net Income approach, the firm can increase its value or lower the overall cost of capital by increasing the proportion of debt in the capital structure (Durand 1959).

On the other hand, the proponents of the Net Operating Income approach argue that the market value of the firm is not affected by the capital structure changes, but by capitalizing the net operating income at the overall, or the weighted average cost of capital, which is a constant.

MM in their first proposition (1958), argue that for firms in the same risk class, the total market value is independent of the debt-equity mix and is given by capitalizing the expected net operating income by the rate appropriate to that risk class.

This study aimed at establishing if any relationship exists between Net Operating Income (Profit) and the value of firms listed in the Nairobi Stock Exchange. In order to study this problem, the following hypothesis was tested:

H_0: There is no relation between Net Operating Income and the value of a firm.

H_A: There is a relationship between Net Operating Income and the value of the firm.

1.3   Objective of the Study

To find out if there is a relationship between the Net Operating Income and the value of firms quoted at the Nairobi Stock Exchange.

1.4   Importance of the Study

The findings and deductions of this study will be of interest to:

The management of publicly quoted companies in determining the effect of profitability on the share prices.

Useful to scholars who intend to analyze the content of information contained in financial reports and possible effect on the investor's psychology.

Investors will be able to make informed decisions on whether to await trading results before offloading and/or repurchasing stock in the stock Exchange.

Financial consultants will be able to offer proper advise to clients on the possible effects of reported losses or gains.

Scholars who may wish to use the findings of this study as a basis for further research on this subject.

CHAPTER TWO

Literature Review

2.1   Researcher's View

Many theories have been advanced on what affects the value of the firm.

Modigiliani and Miller in their original proposition (1958) advocate that the relationship between the leverage and the cost of capital is explained by the Net Operating Income Approach. According to them, the market value of the firm is not affected by the changes in the capital structure. The market value is found out by capitalizing the net operating income at the overall, or weighted average cost of capital, which is a constant.

They showed that a company's capital structure is irrelevant in a perfect financial market because investors can accept the company's decision or reverse its effect on their portfolio by borrowing or lending their own money without adding costs to them. A perfect financial market has no transaction costs or taxes, information is instantaneously and freely available to everyone, securities are infinitely divisible, and the market is competitive.

According to the traditional approach to valuation and leverage, debt can affect the value of the firm. It assumes that there is an optimal capital structure and the firm can increase its total valuation through a judicious use of debt. According to this approach the cost of capital declines and the value of the firm increases with leverage to a prudent debt level. After reaching the optimum point the cost of capital increases and the value of the firm

declines. It asserts that as long as the level of borrowing in a firm does not go beyond a certain level, the value of the firm will continue to grow with the increased use of debt. The cost of capital declines with leverage because debt capital is cheaper than equity capital within a reasonable, or acceptable limit of debt (Solomon 1963).

An optimal level of debt is that where the benefits from tax equal the costs of bankruptcy. Beyond this point the value of the firm begins to decline. (Brealey and Myers, 2001). According to a study by Myers (1984) at this point the value of the firm is maximized and the cost of capital declines.

In the same thread, Solomon (1963) argues that a firm with certain structure of assets and that offers net operating earnings of given size and quality, and given a certain structure of rates in the capital markets, there should be some specific degrees of financial leverage at which the market value of the firm's security will be higher (or the cost of capital will be lower) than at other degrees of leverage.

Durand (1959) came up with two extreme views on the existence of optimum capital structure:

The Net Income Approach proposes that the firm is able to increase its total valuation and lower its cost of capital, as it increases the degree of leverage. According to this approach, a firm can lower its cost of capital continually and increase its total valuation by the use of debt funds.

The net Income approach is based on assumptions that the use of debt does not change the risk perception of investors and this results in the equity-capitalization rate and debt capitalization rate remaining constant with changes in leverage, the debt-capitalization rate is less than the equity-capitalization rate and the corporate income tax does not exist among others.

The cost of capital (k_o) is given by the following formula:

Ko=Net Operating Income/Value of the firm.

With constant annual Net Operating Income, the overall cost of capital will decrease as the value of the firm increases.

The overall cost of capital can also be measured by $k_o = k_e - (k_e - k_d) D/V$

When a Company uses the accrual method of accounting to recognize costs and income, there arises a difference between the Net Income and the cash flow. The accrual method assigns costs and revenue to the Accounting period in which a transaction takes place rather than the period when cash is paid or received. Consequently, net income does not equal net cash flow when there are credit sales or purchases or when expenses that did not use cash are collected in the period.

According to the Net Operating Income approach, investors are assumed to have an entirely different reaction to corporate debt. It assumes that investors value Net Operating Income at constant rate of Weighted Average Cost of Capital. A constant Weighted

Average Cost of Capital results in a constant value of the firm regardless of its use of debt and a constant WACC along with a constant cost of debt implies that cost of equity increases with leverage, and hence that stockholders regard the use of leverage as increasing the riskness of the equity cashflows. If the Net Operating Income assumptions are true, then the capital structure decisions are unimportant (Gapenski et al, 1988.)

The market value of the firm is found out by capitalizing the net operating income at the overall, or the weighted average cost of capital, which is a constant. The market value of the firm is determined by:

$V = (D+S) = NOI/k_o$

Where k_o is the overall capitalization rate and depends on business risk of the firm. It is independent of the financial mix.

The critical assumptions of the Net Operating Income approach are:

The market capitalizes the value of the firm as a whole. Thus, the split between debt and equity is not important.

The market uses an overall capitalization rate, to capitalize the net operating income. K_O depends on the business risk. If the business is assumed to remain unchanged, k_o is a constant.

The use of less costly debt funds increases the risk of shareholders. This causes the equity capitalization rate to increase. Thus, the advantage of debt is offset exactly by the increase in the equity capitalization rate.

They also assumed away corporate tax.

However, in a world with corporate taxes, both the Net Income and the Net Operating Income approaches would indicate that the optimal capital structure calls for virtually a hundred per cent debt. (Gapenski & Eugene 1988).

The Modigiliani and Miller hypothesis is identical with net operating income approach. They argue that, in the absence of taxes, a firm's market value and the cost of capital remain invariant to the capital structure changes. They support the NOI approach by providing logically consistent behavioral justifications in its favor in their 1958 article. They deny the existence of an optimal capital structure.

They make the following assumptions:

Firm's business risk can be measured by the standard deviation of EBIT and firms with the same degree of business risk are said to be in a homogeneous risk class.

All present and prospective investors have identical estimates of each firm's future EBIT, that is, investors have homogeneous expectations about expected future corporate earnings and the risk ness of these earnings.

Stocks in bonds are traded in perfect capital markets. This implies among other things that there are no brokerage costs and the investors, both individuals and institutions, can borrow at the same rate as corporations.

The debt of firms and individuals is riskless, so the interest rate on debt is the risk-free rate. Further, this situation holds regardless of how much debt a firm (or an individual) issues.

All cash flows are perpetuities; that is, the firm is a zero-growth firm with an 'expectationally constant' EBIT and its bonds are perpetuities.

'Expectation ally constant' means that the best guess as to the EBIT for any future year is the same as for any other year, but investors know that the realized level could be different from the expected level in any year.

The value of a firm is established by capitalizing its expected net operating income (NOI=EBIT) at a constant rate, which is appropriate for the firms risk class.

$V_L = V_U = EBIT/WACC = EBIT/K_{SU}$, where:

L=Levered firm

U=Unlevered firm

Ksu=WACC=the required rate of return for unlevered, or all equity firm.

Since V as established by proposition 1 is a constant, then under MM theory the value of the firm is independent of its leverage. This also implies that the WACC to any firm, leveraged or not, is completely independent of its capital structure and is also equal to the cost of equity to an unlevered firm in the same risk class.

Thus, MM's proposition 1 is identical to the Net Operating Income (NOI) hypothesis.

MM's original work of 1958 assumed zero corporate tax. 5 years after, they published a second article, which included the effects of corporate tax. They concluded that leverage would increase a firm's value because interest on debt is a tax-deductible expense, and hence, more of a leveraged firms operating income flows through to investors.

In the summary, they said that the value of a levered firm is equal to the value of unlevered firm in the same risk class plus, the gain from leverage, which is the value of the tax savings and equals the corporate tax rate times the amount of debt the firm uses, that is;

$$V_L = V_U + TD$$

In rejection to NI approach, MM argued that for two firms identical in all aspects except for their capital structures, cannot command different market values or have different cost of capital. Their opinion is that if these two firms have different market values, arbitrage

will take place to enable investors to engage in personal or homemade leverage as against the corporate leverage to restore equilibrium in the market.

2.2   Evaluation of a Firm's Earning Power.

According to Van Horne (2001), several indicators may be used in valuing a company.

Net Operating Income (NOI), which is the earnings from operations before interest and taxes, is a useful tool in the evaluation of a firms earning power. If there are no recurring items on the income statement, then NOI is equal to the Earnings Before Interest and Taxes (EBIT).

Return On Net Assets (RONA) is the measure of the firm's operating performance. It indicates the firm's earning power. It is a product of assets turnover, gross profit margin and operating leverage. Operating leverage is the change in EBIT for a given change in sales.

$$RONA=EBIT/NA=SALES/NA*GP/SALES*EBIT/GP$$

2.2.1   Profitability Ratios

Profitability is the net result of a large number of policies and decisions. It shows the combined effects of liquidity, assets management, and debt management on the operating results.

i) Profit margin on sales:

This is computed by dividing net income by sales, and it gives profit per shilling of sales.

Profit Margin on Sales=Net Income available to Common Stockholders/Sales.

ii) Basic Earnings Power Ratio:

This is calculated by dividing earnings before Interest and Taxes (EBIT) by the total assets:

BEPR=EBIT/Total Assets

It is useful for comparing firms in different tax situations and with different degrees of financial leverage.

iii) Return on Common Equity

The ratio of net income to Common Equity measures the return on Common Equity (ROE), or the rate of return on the stockholders investment:

ROE=Net Income available to Stockholders/Common Equity.

2.2.2 Market Value ratios.

These relate the firm's stock price to its earnings and book value per share. These ratios give management an indication of what investors think of the Company's past performance and future prospects. If the firm's liquidity, asset management, debt

management, and profitability ratios are good, then its market value ratios will be high, and its stock price will probably be as high as can be expected.

Price Earnings ratio

The price earnings ratio is used to value the firm's performance as expected by investors. It indicates investor's judgment or expectations about the firm's performance.

P/E ratio=Price per share/EPS

P/E ratio is higher for firms with high growth prospects.

2.3   Other Valuation Methods

2.3.1   Capital Asset Pricing Model (CAPM)

This approach is helpful in determining the appropriate discount rate to employ in discounting expected dividends to their present values. This rate is the risk free rate plus a premium that is sufficient to compensate for the systematic risk associated with the expected dividend stream.

Dividend Discount model

This method involves determining the market price per share by discounting the future dividends at the required rate of return.

$$P_O = \sum_{t=1}^{\infty} D^t/(1+k)^t$$

Where:

P_O = market Price per share

D_t = Expected Dividend

t = End of period t

t = required rate of return

The market price per share is multiplied by the number of outstanding shares to determine the market value of the firm. The total value of the Company's existing stock is equal to the discounted value of the total dividend stream, which will be paid to the stock outstanding.

The book value concept is an Accounting concept where assets are recorded at their historic value, and then depreciated over their useful life. The difference between the book values of assets and liabilities is the net worth.

The replacement value is the amount that a Company would be required to spend if it were to replace all its existing assets in the current condition. This method ignores the benefits of intangible assets and the utility of existing assets.

If a Company were to sell all its assets, after terminating its business the proceeds make up the liquidity value.

Going concern value is the amount that a Company could realize if it sold its business as an operating one. The value includes the price paid for the intangible assets such as goodwill.

The market value of an asset or security is the current price at which the asset or security is being sold or bought in the market. For profitable firms, the market value is expected to be higher than the book value.

Some scholars however, seem to agree that the value of the firm is the worth of the common stock which is a function of the expected return, risk to which the stockholder is exposed, and the timing of returns.

The expected return is the cash flows the stockholder is expected to receive in the future. Risk is the degree of uncertainty that the expected cash flows will be received and timing is the pattern of expected future cash flow receipt.

According to Pandey (1999), the value of a firm depends upon its expected earnings stream and the rate of return or the cost of capital.

An estimate of the expected returns from an investment encompasses the size but also the form, time pattern, and the uncertainty of return.

The returns from an investment may take many forms such as earnings, dividends, interest payments, or capital gains during a given period.

For an investor to calculate accurately the value of a security, he must be able to estimate when the returns are likely to be received; and the pattern that they are received. This is because of the time value of money. This knowledge will make it possible to properly value the streams of returns relative to alternative investments with a different time pattern of returns.

The required rate of returns on an investment is determined by the economy's real risk free rate of return, the expected rate of inflation during the holding period and a risk premium that is determined by the uncertainty of returns.

All investments are affected by the risk-free rate and the expected rate of inflation because these two variables determine the nominal risk-free rate. This implies that the risk premium is the only factor that causes the difference in required rate of returns.

CHAPTER THREE

Research Methodology

3.1 Population

The population was made up of all firms quoted at the Nairobi Stock Exchange. There are 47 companies presently listed at the Nairobi Stock Exchange.

3.2 Sample

The sample was made up of all those firms that consistently submitted their annual returns in the period 1994 to 2002. All the 47 companies submitted their returns in that period. This was therefore a census study. This period is considered long enough to provide sufficient variables to assist in determining a reliable regression model so as to ascertain the strength of the relationship. It is also considered to contain a fairly representative group to give adequate information on the population.

3.3 Data Collection

For the purpose of this study, data was purely secondary and was collected from financial statements for firms that are quoted at the Nairobi Stock Exchange. This information is available from the Nairobi Stock Exchange and the Capital Markets Authority. It comprises of Profit before tax, number of outstanding shares, and share prices all of which are as at end of the year.

3.4   Data Analysis

In analyzing the data simple regression analysis was used. The regression equation is in the form of: -

$$Y = A + BX$$

Where:

Y is the firm value

A is the intercept of the regression equation which represents the firm value at zero profit.

B is the slope or gradient depicting change in the value of the firm due to change in profitability.

X is the Earnings Before Tax (EBIT).

The regression model was used to find out if there exists a relationship between Net Operating Income and the value of the firms. The objective was achieved through hypothesis testing on the basis of the F-significance ANOVA.

CHAPTER FOUR

Data Analysis, Findings And Discussions

4.1   Introduction

This empirical study sought to establish the relationship between profitability and firm value. The hypothesis that there is no significant relationship between the two was tested using linear regression analysis. Secondary Mean Market Value data (appendix ii) and Mean Earnings Before Tax (appendix i) for the 47 companies was collected for 9 years covering 1994 to 2002. The mean values calculated Mean Market Value and Mean Earnings Before Tax for the 47 companies was then calculated and presented in appendix iii.

4.2   Regression Assumptions

Linear regression assumptions for the independent and dependent variables were first verified. The response variable (Mean Market Value) was tested for normality conditions. The constant variance of the distribution of the dependent variable (Mean Market Value) was also checked for constant for all values of the independent variable (Mean Earnings Before Tax). The relationship between the dependent variable and each independent variable was also checked for linearity through curve fitting. The linear regression assumptions tests are presented as below:

The distribution of the response variable (firm value) was found to be positively skewed meaning that the normality assumption was not satisfied calling for transformation of

firm value data before linear regression analysis is conducted. Figure 4.1 presents the

normal curve for the firm value data.

Figure 4.1: Distribution of the response variable (mean firm value)

Mean Market Value

Std. Dev = 3427909
Mean = 2499313.3
N = 47.00
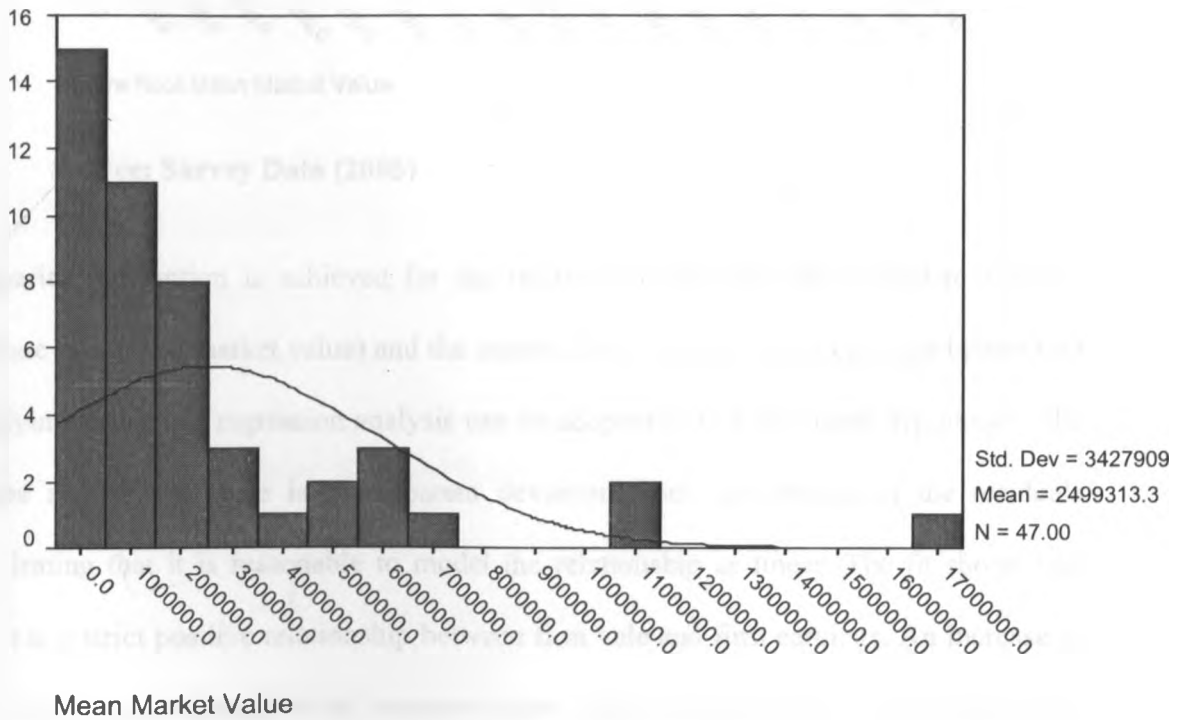
Source: Survey Data (2005)

Distribution of the normalized transformed curve for the square root Mean Market Value

satisfies normality assumptions (Figure 4.2).

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Figure 4.2: Square root transformed mean firm value (response variable)

Square Root Mean Market Value

Std. Dev = 907.79
Mean = 1301.1
N = 47.00
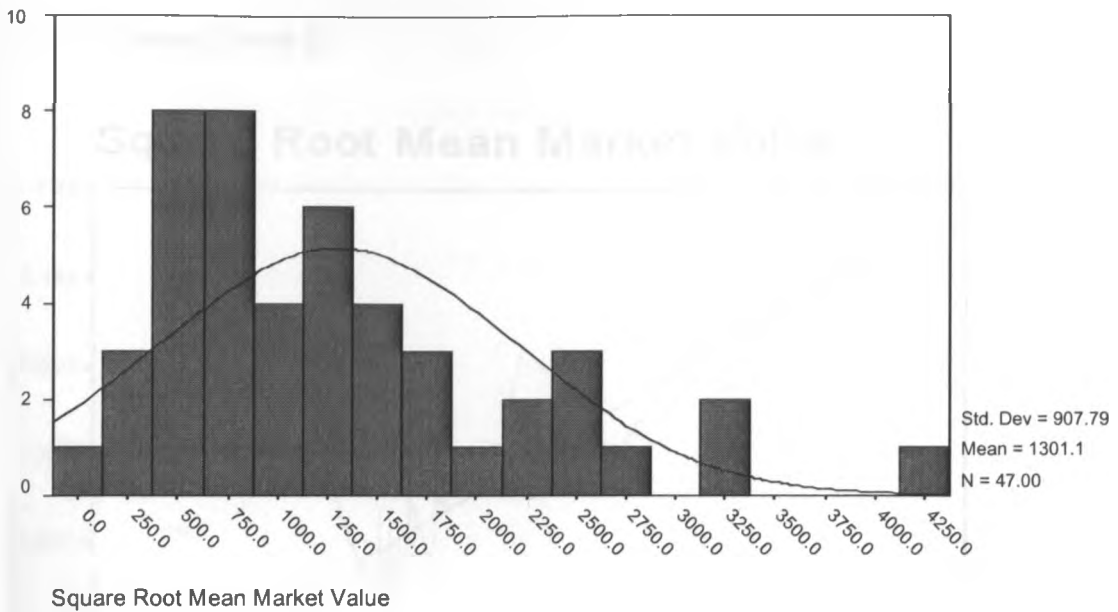
Source: Survey Data (2005)

Linearity assumption is achieved for the relationship between the dependent variable (square root mean market value) and the independent variable (mean earnings before tax) implying that linear regression analysis can be adopted to test the stated hypothesis. The figure shows that there is no apparent deviation from randomness in the residuals confirming that it is reasonable to model the relationship as linear. The fit shows that there is a strict positive relationship between firm vale and firm earnings. An increase in firm earnings corresponds to an increase in firm value and vice versa. The values for the y-intercept for all the firms are consistently positive (>0) implying that firm earnings are not the only factor contributing to firm value.

Figure 4.3: Linear Curve Fit

Square Root Mean Market Value

mean Earnings Before Tax
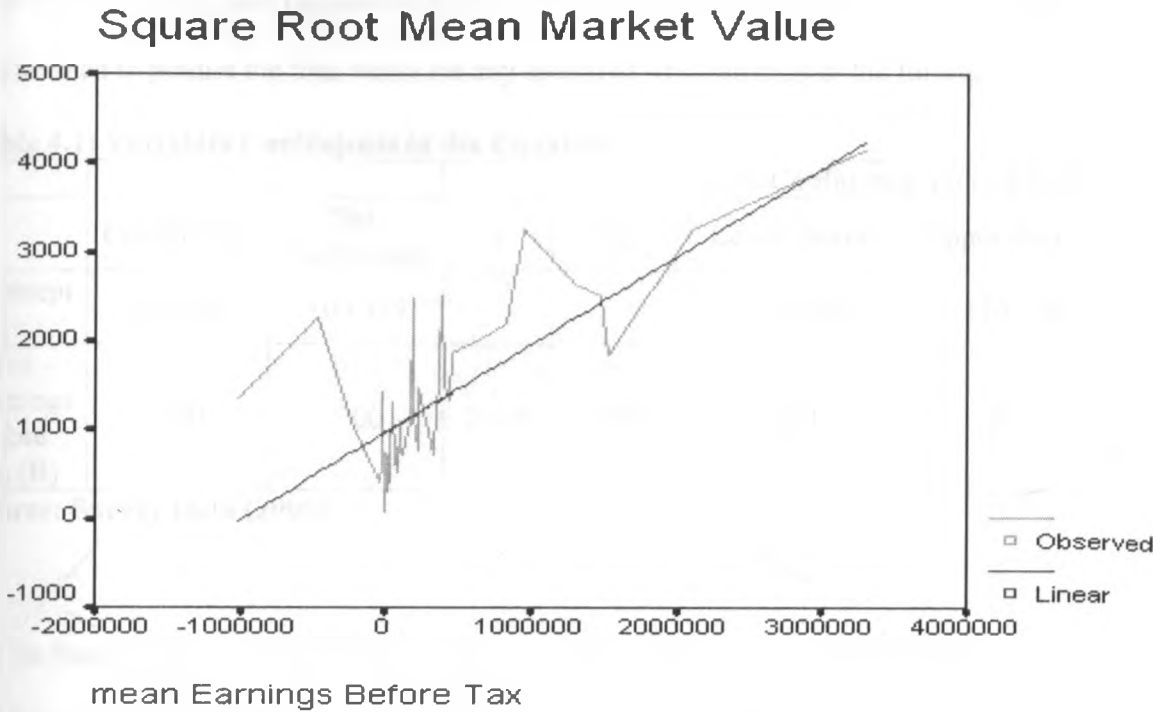
Source: Survey Data (2005)

4.3   Estimated Linear Regression Model

The predicted model for the relationship between Mean Market Value and the Mean Earnings Before Tax is $Y_i = 973.380 + 0.740 X_i$, i= 1, 2, 3, … 47. (Refer table 4.1). The value 973.38 is the Y-intercept while 0.74 is the slope (gradient) for the regression model. The intercept value (973.38) represents the Mean Market Value for all the 47 firms before factoring in Earnings Before Tax. The implication of the findings is that firm earnings may not be the only factor contributing to the value of the firm. That is to say that there are other factors, which have significant impact on the value of the firm on

top of firm earnings. The t-value (7.37) and the significance value (0.000) indicate that slope (0.74) is significant. The interpretation of the slope is that there is a 0.74 increase in firm value for every unit increase in firm earnings. The estimated linear regression model can be used to predict the firm value for any specified firm earnings in the future.

Table 4.1: Variables Coefficients in the Equation

	Coefficients	Std. coefficients	t	Sig.	95% Confidence Interval for B	
					Lower Bound	Upper Bound
Intercept (A)	973.380	100.489			770.986	1175.774
Mean Earnings Before Tax (B)	.740	.000	7.370	.000	.001	.001

Source: Survey Data (2005)

On the basis of the F-value (54.315) and significance value/ p-value (0.000) at 95% confidence level, the regression relationship between Mean Market Value and the Mean Earnings is statistically significant. The implication of the finding is that firm Earnings contributes significantly to firm Market Value. As a result, any change on the profitability will have an impact on the value of the firm. The null hypothesis (there is no relationship between Net Operating Income and the value of a firm) is therefore rejected.

Table 4.2: ANOVA (Analysis of Variance):

	Sum of Squares	Df	Mean Square	F	Sig.	
Regression	20731466.030	1	20731466.030	54.315	.000	Regression
Residual	17175928.846	45	381687.308			Residual
Total	37907394.876	46				

Source: Survey Data (2005)

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Multiple R-value for all the 47 firms is 0.73953 showing that there is a strong positive relationship between the firm earnings and their values. As a result any change on the profitability will have a great impact on the value of the firm. Therefore as profit increases the value of the firm also increases and vice versa. The interpretation is the although there are other factors that contribute to firm value other than earnings, the latter remain a major determinant.

Table 4.3: Model Summary

Multiple R	0.73953
R Square	0. 54690
Adjusted R Square	0.53683
Standard Error	617.80847

Source: Survey Data (2005)

CHAPTER FIVE

Summary Of Findings, Conclusions And Recommendations

The objective of this study was to ascertain whether there exists a relationship between the profitability of a firm and its value for firms quoted on the Nairobi Stock Exchange. The data used covers 9 years from 1994 to 2002 and was obtained from the Nairobi Stock Exchange records.

The research tested the stated hypothesis by use of F- significance ANOVA for to determine the nature and magnitude of the relationship between the profitability and firm value.

The regression relationship between Mean Market Value and the Mean Earnings is statistically significant. Any change on the profitability will have an impact on the value of the firm. The null hypothesis is rejected and it is concluded that there is a strong positive relationship between net operating income and the value of firms quoted at the Nairobi Stock Exchange. Firm earnings remain a major determinant of firm value. However, there are other factors that contribute to firm value.

5.1   Implication of Results and Recommendations

The concept of there being a relationship between profitability and value of firms was first researched by early researchers like the Modigliani Miller (MM). This research is in

tandem and concurrence with earlier researches and supports the findings and conclusions but has revealed that there are more variables that could be in play other than profitability in determination of firm value.

5.2   Limitations of the Study

The study was intended to use data for all the companies quoted on the Nairobi Stock Exchange for a period of 10 years. This was not achieved due to lack of information

The data available could only allow a period coverage of 9 years, possibly a large period could have yielded different results.

Interpreting financial statements was a problem as the data given was in summary form giving fewer details in relation to individual subsidiaries in the case of consolidated statements.

The data collected comprised of book values only. Market values of Companies could possibly have yielded better results.

There was limited time allocated to finish this study. Given more time the study would have been more enhanced by comparing results with those of firms that are not quoted at the Nairobi Stock Exchange.

In the availability of more funds, more dimensions of this study can be looked at.

5.3   Suggestions for Further Research

To improve on this study it is suggested that:

A similar study could be carried out over a longer period of time to obtain more reliable findings.

Since this study used market values (Market capitalization) the same study should be carried out using book values and the findings compared.

A study should be carried out to find out the relationship between firm value and other factors such as agency costs, information asymmetry and debt value. The nature and magnitude of the relationship should be determined.

Since this study has used book values, a similar study using market values could be done and results compared.

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APPENDICES

7.1 APPENDIX 1: LETTER OF INTRODUCTION

Dear Sir/Madam,

RE: RESEARCH INFORMATION

I am a postgraduate student at the faculty of commerce, University of Nairobi. As part of MBA (Finance) course requirements I am undertaking a research project that seeks to establish if there is any relationship between net operating income and the value of firms quoted at the Nairobi Stock Exchange.

To satisfy requirements for this research I am collecting data from your institution.

I would be grateful if you can allow me access to all the relevant information pertinent for this research. The information requested is needed purely for academic purposes and will be treated in strict confidence.

Yours Faithfully,

                                                    Supervisor

John W. Gathuya   M. N. Anyangu.
                                                    Department of Accounting
                                                    University of Nairobi

7.2   APPENDIX II: DATA COLLECTION FORM

COMPANY..

YEAR	SHARE PRICE	EBIT	EAT
1993			
1994			
1995			
1996			
1997			
1998			
1999			
2000			
2001			

7.3 APPENDIX III: LIST OF COMPANIES

Code	COMPANY NAME
C1	Brook Bond Ltd
C2	Kakuzi Ltd
C3	Rea Vipingo Ltd
C4	Sasini Ltd
C5	Car & General Ltd
C6	CMC Ltd
C7	Kenya Airways Ltd
C8	Marshalls Ltd
C9	Nation Media Group
C10	Tourism Promotion Ltd
C11	Uchumi Supermarkets
C12	Barclays Bank
C13	CFC Ltd
C14	Diamond Trust
C15	HFCK
C16	ICDC Investment Ltd
C17	Jubilee Insurance Company
C18	Kenya Commercial Bank
C19	National Bank
C20	NIC bank ltd
C21	Pan African Insurance ltd
C22	Standard Chartered bank ltd
C23	Athi River mining
C24	Bamburi cement ltd
C25	BAT ltd
C26	BOC Kenya ltd
C27	Carbacid ltd
C28	Crown Berger ltd
C29	Dunlop ltd
C30	East African Cables ltd
C31	East African Portland ltd
C32	E.A Breweries ltd
C33	Firestone ltd
C34	Kenya Oil Co ltd
C35	Mumias Sugar Co ltd
C36	KPLC ltd
C37	Total Kenya ltd
C38	Unga Group
C39	A. Baumann ltd
C40	City trust ltd
C41	Eaagads ltd
C42	Express ltd
C43	Kapchorua Tea ltd
C44	Kenya Orchards ltd
C45	Limuru Tea
C46	Standard Newspaper ltd
C47	Williamson Tea ltd

7.4   APPENDIX IV: EARNINGS BEFORE TAX EBT (000'S)

2002	2001	2000	1999	1998	1997	1996	1995	1994
217,603	328031	664664	343146	473386	243146	473386	30428	614136
8,471	-95934	-85760	-16615	146286	17616	146286	84805	283052
47108	8955	-46292	-7723	48773	7230	48773	81791	89247
-68415	36436	161594	50002	209182	55502	209182	-43800	-765290
20074	-11069	10005	13564	-33697	14264	-33697	45390	32881
241150	139806	183904	250607	246993	270606	246993	237294	167084
1059000	2044000	2853000	1425000	1436000	1325060	1436000	719334	1539730
1799	-356066	-104028	-211118	60400	210118	60400	129727	20688
635200	390200	296100	342200	497700	343200	497700	251573	105793
168987	138699	117113	103813	89216	83813	89216	46520	102221
80206	151082	462530	375097	485354	475097	485354	352368	418997
550000	4235000	3035000	3361000	4242000	3563000	4242000	3192000	3398000
323093	260467	360622	298194	425681	398094	425681	360606	305753
112799	51407	200346	155259	207599	255259	207599	401605	398564
95318	-255765	78618	114316	428247	214316	428247	286540	279165
306611	227160	321767	355016	151255	55016	151255	108699	77315
213413	169791	117281	138835	206344	138835	206344	125633	110483
-417855	182958	-765631	-2244854	1410598	1244832	1410598	3783733	2837146
390142	-322580	-1619719	-3470826	-2821773	512000	-2821773	633379	429253
340224	377040	451165	461569	435559	461569	435559	545737	339616
-6452	158103	-54661	56959	126619	56959	126619	101657	48481
12008	3231694	3147004	2566268	2290584	2566258	2290584	1761589	1137869
82136	51027	45601	19925	12866	17980	12866	30415	15563
2083000	1340000	487000	890000	569000	790000	569000	1324820	513360
1310423	851343	682970	1874466	1751790	1874400	1751790	824325	819142
154990	118175	110159	180691	249682	201691	249682	133160	133346
78859	70813	133511	169801	130678	169801	130678	56611	53099
93412	58514	40663	86642	37738	86642	37738	132059	127758
	21812	10162	12327	9588	12327	9588	24161	23071
-4954	24112	46698	32842	94860	32842	94860	89831	106400
212934	974384	-538860	-1294643	499452	294643	499452	92354	127000
3400411	2499117	1798105	1506962	493858	1506962	493858	509554	1037091
310834	448879	396412	576945	901241	576945	901241	978977	789934
679174	595097	250991	316544	255420	316544	255420	131854	235537
104552	685221							
-2849116	-4105915	-4157793	1721924	2005343	721924	2005343	763136	-261178
604776	-318899	333498	856686	515021	856686	515021	443663	212835
-135858	-292157	-778312	-331055	-708239	231057	-708239	435465	237482
-51494	1060	5463	16149	5097	36849	5097	25365	62385
7283	9869	10257	11322	41458	23022	41458	12830	12747
6391	2656	3115	9762	71573	9762	71573	11729	47134
	-32908	-5969	-37405	16574	47405	16574	80337	61687
-18019	11710	202832	25545	109787	25545	109787	4044	95353
	6729	-7809	-140	-7069	-200	-7069	-8983	639
4082	-3991	16998	14242	30169	14242	30169	7788	22986
14550	21393	-126226	-120571	1388	-82571	1388	2440	-17900
-38300	215539	112461	77005	424429	86005	424429	25039	318847

7.4 APPENDIX IV: EARNINGS BEFORE TAX EBT (000'S)

	2002	2001	2000	1999	1998	1997	1996	1995	1994
C1	217,603	328031	664664	343146	473386	243146	473386	30428	614136
C2	8,471	-95934	-85760	-16615	146286	17616	146286	84805	283052
C3	47108	8955	-46292	-7723	48773	7230	48773	81791	89247
C4	-68415	36436	161594	50002	209182	55502	209182	-43800	-765290
C5	20074	-11069	10005	13564	-33697	14264	-33697	45390	32881
C6	241150	139806	183904	250607	246993	270606	246993	237294	167084
C7	1059000	2044000	2853000	1425000	1436000	1325060	1436000	719334	1539730
C8	1799	-356066	-104028	-211118	60400	210118	60400	129727	20688
C9	635200	390200	296100	342200	497700	343200	497700	251573	105793
C10	168987	138699	117113	103813	89216	83813	89216	46520	102221
C11	80206	151082	462530	375097	485354	475097	485354	352368	418997
C12	550000	4235000	3035000	3361000	4242000	3563000	4242000	3192000	3398000
C13	323093	260467	360622	298194	425681	398094	425681	360606	305753
C14	112799	51407	200346	155259	207599	255259	207599	401605	398564
C15	95318	-255765	78618	114316	428247	214316	428247	286540	279165
C16	306611	227160	321767	355016	151255	55016	151255	108699	77315
C17	213413	169791	117281	138835	206344	138835	206344	125633	110483
C18	-417855	182958	-765631	-2244854	1410598	1244832	1410598	3783733	2837146
C19	390142	-322580	-1619719	-3470826	-2821773	512000	-2821773	633379	429253
C20	340224	377040	451165	461569	435559	461569	435559	545737	339616
C21	-6452	158103	-54661	56959	126619	56959	126619	101657	48481
C22	12008	3231694	3147004	2566268	2290584	2566258	2290584	1761589	1137869
C23	82136	51027	45601	19925	12866	17980	12866	30415	15563
C24	2083000	1340000	487000	890000	569000	790000	569000	1324820	513360
C25	1310423	851343	682970	1874466	1751790	1874400	1751790	824325	819142
C26	154990	118175	110159	180691	249682	201691	249682	133160	133346
C27	78859	70813	133511	169801	130678	169801	130678	56611	53099
C28	93412	58514	40663	86642	37738	86642	37738	132059	127758
C29		21812	10162	12327	9588	12327	9588	24161	23071
C30	-4954	24112	46698	32842	94860	32842	94860	89831	106400
C31	212934	974384	-538860	-1294643	499452	294643	499452	92354	127000
C32	3400411	2499117	1798105	1506962	493858	1506962	493858	509554	1037091
C33	310834	448879	396412	576945	901241	576945	901241	978977	789934
C34	679174	595097	250991	316544	255420	316544	255420	131854	235537
C35	104552	685221							
C36	-2849116	-4105915	-4157793	1721924	2005343	721924	2005343	763136	-261178
C37	604776	-318899	333498	856686	515021	856686	515021	443663	212835
C38	-135858	-292157	-778312	-331055	-708239	231057	-708239	435465	237482
C39	-51494	1060	5463	16149	5097	36849	5097	25365	62385
C40	7283	9869	10257	11322	41458	23022	41458	12830	12747
C41	6391	2656	3115	9762	71573	9762	71573	11729	47134
C42		-32908	-5969	-37405	16574	47405	16574	80337	61687
C43	-18019	11710	202832	25545	109787	25545	109787	4044	95353
C44		6729	-7809	-140	-7069	-200	-7069	-8983	639
C45	4082	-3991	16998	14242	30169	14242	30169	7788	22986
C46	14550	21393	-126226	-120571	1388	-82571	1388	2440	-17900
C47	-38300	215539	112461	77005	424429	86005	424429	25039	318847

7.5   APPENDIX V: MARKET VALUE OF FIRMS (000) (MARKET CAPITALIZATION)

	2002	2001	2000	1999	1998	1997	1996	1995	1994
C1	2639250	3519000	4740875	5083000	6891375	4088000	6891375	9286250	13147375
C2	287139	705599	1077999	1705199	2763598	1905160	2763598	1842399	2391199
C3	153000	174000	222000	276000	390000	276000	390000	200000	362000
C4	509722	752583	1320821	2109513	2964721	3009513	2964721	1964728	2553750
C5	222796	222796	423312	222796	267355	252772	267355	2552028	130808
C6	418822	218516	388472	728385	874064	728385	874064	476486	694191
C7	3623681	3485196	3462116	3692921	3369790	2892921	3369790	3562591	3125754
C8	263393	263393	338237	374220	604510	274220	604510	395810	263873
C9	4492231	1541976	2460031	3565263	4884410	3765283	4884410	922215	827141
C10	734901	657543	611128	620797	560845	590799	56084	602140	510118
C11	996000	2730000	2565000	2880000	2760000	2740000	2530000	1690000	2240000
C12	18685000	13424535	13967500	19075600	20059650	16675600	20059650	16609218	17466489
C13	1104000	1080000	1206000	1425000	1510000	1505000	1510000	3000000	1500000
C14	795000	715500	1113000	2067000	1749000	2067000	1749000	4134000	5183000
C15	598000	690000	632500	1213250	1845750	1213250	1845750	1845750	1897500
C16	1044620	2163470	1899015	1808539	1109143	1808539	1109143	574534	565234
C17	558000	558000	666000	927000	1080000	927000	1080000	1181250	1812500
C18	2543200	2445960	2861100	3534300	6900300	3534300	6900300	7152750	7952175
C19	730000	580000	630000	1000000	1720000	1000000	1720000	4550000	4550000
C20	163566	1236218	1462858	2225192	2472436	2225192	2472436	1722656	1951172
C21	336000	628800	528000	648000	325000	648000	325000	434000	416500
C22	15329094	11620421	12238528	9312838	8323863	9312838	8323863	8735942	12279767
C23	437100	342000	300000	431250	495000	431250	495000	345000	401000
C24	15879457	6061415	12340637	9527194	13065542	9527194	13065542	5766271	10484129
C25	5400000	4900000	6050000	5812500	5737500	5812500	5737500	6675000	16800000
C26	522293	585763	839594	1366781	1366781	1366781	1366781	1323629	1446405
C27	404931	396436	462509	679605	613532	679605	613532	368709	400313
C28	150990	107850	194130	215700	173638	215700	173638	587782	571605
C29		50000	64000	100000	200000	100000	200000	100000	100000
C30	186300	186300	187312	263250	405000	263250	405000	729000	708588
C31	1125000	990000	1116000	1260000	2115000	1260000	2115000	327000	300000
C32	8995016	8405849	6260156	7300975	4340804	7300975	4340804	3522003	6347367
C33	2421518	1948396	3199787	4453478	4481313	4453478	4481313	4592649	6865179
C34	816449	690453	816449	413988	421188	413988	421188	410388	350990
C35	1275000	3238500							
C36	684457	2314494	4075092	8941464	10022880	8941464	10022880	1055040	514332
C37	3404560	1895896	3080000	2702000	2744000	2702000	2744000	4788000	7000000
C38	217113	410397	721624	1511194	2647519	1511194	2647519	760133	236897
C39	34560	26888	54912	65857	140942	65857	140942	115202	153603
C40	72905	67489	83320	97902	106234	97902	106234	116649	104151
C41	152745	164804	160785	271726	237961	271726	237961	321570	214520
C42		89520	80400	89520	144000	89520	144000	343200	504000
C43	535944	547680	586800	489800	316872	489800	316872	528120	354036
C44		35129	2000	2000	2000	2000	2000	1200	1200
C45	236400	236400	130000	130000	130000	130000	130000	260000	200000
C46	489298	70465	94807	205630	153742	197630	153742	94606	17123
C47	46572320	875632	761799	1225884	1190859	1195885	1190829	1103296	1138321

7.6   APPENDIX VI: MEAN VALUES (000'S)

Earnings before tax EBT	Mean Market Value of Firm	Square root Market Value of Firm
376436.2	6254056	2500.81
54245.22	1715766	1309.87
30873.56	271444.4	521
-17289.7	2016675	1420.1
6412.78	506890.9	711.96
220493	600153.9	774.7
1537458	3398307	1843.45
-20897.8	375796.2	613.02
373296.2	3038107	1743.02
104399.8	549372.8	741.2
365120.6	2347889	1532.28
3313111	17335916	4163.64
350910.1	1537778	1240.07
221159.7	2174722	1474.69
185444.7	1309083	1144.15
194899.3	1342471	1158.65
158551	976638.9	988.25
826836.1	4869376	2206.67
-1010211	1831111	1353.19
427559.8	1770192	1330.49
68253.78	476588.9	690.35
2111540	10608573	3257.08
32042.11	408622.2	639.24
951797.8	10635265	3261.18
1304517	6991667	2644.18
170175.1	1131645	1063.79
110427.9	513241.3	716.41
77907.33	265670.3	515.43
15379.5	114250	338.01
57499	370444.4	608.64
96301.78	1178667	1085.66
1471769	6312661	2512.5
653489.8	4099679	2024.77
337397.9	528342.3	726.87
394886.5	2256750	1502.25
-461815	5174678	2274.79
446587.4	3451162	1857.73
-227762	1184843	1088.51
11774.56	88751.44	297.91
18916.22	94754	307.82
25966.11	225977.6	475.37
18286.88	185520	430.72
62953.78	462880.4	680.35
-2987.75	5941.125	77.08
15187.22	175866.7	419.36
-34012.1	164115.9	405.11
182828.2	6139425	2477.79