

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,
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COLLEGE OF ARTS AND SOCIAL SCIENCES
SCHOOL OF BUSINESS**

**THE IMPACT OF LEVERAGE AND ECONOMIC DEVELOPMENT ON
CORPORATE VALUE**

(CASE STUDY OF ANGLOGOLD ASHANTI LTD).

BY

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**A DISSERTATION PRESENTED TO THE KWAME NKRUMAH UNIVERSITY
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DECLARATION

I hereby declare that this dissertation is my own work towards the MBA and that to the best of my knowledge it contains no material previously published by another person nor material previously published by another person nor material which has been accepted for the award of any other degree of the university, except where due acknowledgement has been made in the text.

Samuel Segbawu 

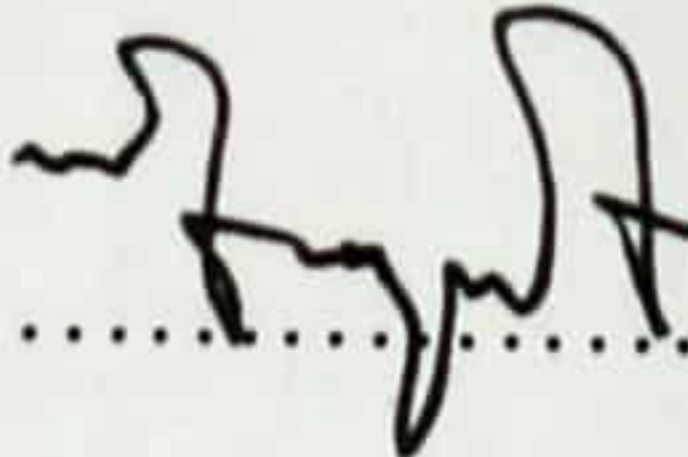
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DEDICATION

No amount of words can adequately express the debt of gratitude I owe my Wife **ADWOA SEGBAWU** who has been a pillar of support through out the study and has been a source of my motivation.

Special dedications also go to my Mum who has supported me through prayers throughout the study.

Last and most importantly, Special thanks go to the Lord Most High.

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I remember mentioning pursuing a MBA study to my Dad and his very words were, "Do not look back, carry on", this he said to me in Ewe language and this infact has been my source of motivation. Daddy, am grateful for those words. Appreciate you much.

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ABSTRACT

The main object of this study was to unravel the effect of leverage and economic development on corporate value, with AngloGold Ashanti Limited as case study.

Purely secondary data was used for this study. Thus annual audited financial statements of the company (AngloGold Ashanti Limited) from year 1998 to 2005 served as the main source of data. Information on certain key financial performance indicators, i.e capital structure (leverage), earnings on equity capital, assets and all the information needed to estimate the performance indices were obtained from these financial records of the company.

Major findings of the study indicated that irrespective of the Tabular/Trend Analysis used, leverage had a negative effect on corporate value.

Also Ghana's economic development as measured by GDP growth in the study had a negative relationship with corporate value.

Since most of the empirical works in the field were conducted in the developed world using many companies operating in different sectors, the distinctiveness of this work has been brought to bear as it focuses on only one company (AngloGold Ashanti Limited) in a particular sector (mining) in a developing country context.

The study was therefore expected to whip up interest in the field of corporate finance and encourage more future research in the "third world" in order to generate bench marks or industry averages to guide corporate managers in this part of our world.

THE IMPACT OF LEVERAGE AND ECONOMIC DEVELOPMENT ON

CORPORATE VALUE

(A CASE STUDY OF ANGLOGOLD ASHANTI LTD.)

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CHAPTER ONE

1.0

GENERAL INTRODUCTION

1.1 Background Study

The activity of a company is conditioned by all the means available to it (equity and debt), which are put to use (fixed assets and need for working capital) in order to realize sufficient profits, if possible, to remunerate all the capital contributors. The existence of a financing structure optimized between equity and debt has been the subject of a vast debate for several decades (Couturier and Fioleau, 2000). The issue is important because if such a structure exists, companies would manage to achieve it and possibly adhere to it for financing their activity. Several research works on the subject, starting with the work of Modigliani and Miller (1958 and 1963) do not always make it clear which of the two financing sources impacts more positively on company value. How does debt affect the value of a firm? Modigliani and Miller (1958) and Miller and Modigliani (1961) argue that in frictionless markets without taxes, bankruptcy costs, agency costs, and asymmetric information, capital structure does not matter. In other words, there is no optimal debt ratio. In an ideal market, the debt level appears to have no impact on the share value (Guyon, 1992). However, whenever one of the ideal market hypotheses is relaxed, this conclusion is modified. For instance, if companies can borrow at a lower rate than investors, it is in the interest of the latter for the companies to increase their debt level. Ultimately, there are three main reasons why a company does not reach its highest debt level: the influence of tax law - through the savings on taxes afforded by interest expenses for an indebted company (De Angelo and Masulis, 1980),

the costs of bankruptcy (Altman, 1984) and agency costs (Jensen and Meckling, 1976; Charreaux, 1987).

The behaviour of companies in the real world as regards funding shows how widely debt levels vary from one company to another. From the standpoint of the sector of activity, it could be expected that companies with similar activity would have similar financial profiles. But many empirical studies show the contrary to be true (Dubois, 1985). In some cases, the results of these empirical studies lead to rather problematic conclusions: "Profitability (often) appears as the main factor explaining the financing structure of companies: the more profitable the company, the lower its debt level" (Desbrières and Dumontier, 1989).

According to Jensen (1986), when firms have more internally generated funds than positive net present value projects, debt forces the managers to pay out funds that might otherwise have been invested in negative net present value projects. This overinvestment problem can be lessened if managers are forced to pay out excess funds for servicing debt, thereby enhancing the firm's value. In addition to managers-owner conflicts, agency conflicts also exist between shareholders and creditors (bond holders) as creditor wealth may be expropriated especially when the shareholders are not constrained by restrictive covenants (Jensen and Meckling, 1976) and when creditor protection in a country is poor. Myers (1977) suggests that a firm with outstanding debt may have the incentive to reject projects that have positive net present value if the benefits from accepting the project accrue to the bondholders without also increasing shareholders' wealth.

1.4 Problem Statement

The research problem of this study is whether leverage and economic development has a positive relationship on corporate value.

1.5 Scope of the study

Purely secondary data was used for this study largely due to time constraints. Annual audited financial statements of the company (AngloGold Ashanti) from year 1998 to 2005 served as the main source of data for the study. Also Anglogold Ashanti was chosen as a parameter to measure the impact of leverage and economic development on corporate value in order to give a fair assessment of the mining industry.

1.6 Justification

Debt, which acts as a lever, can greatly magnify gains or losses. Thus financial leverage increases the potential reward to shareholders, but it also increases the potential for financial distress and business failure. In their study to examine debt level and company efficiency, Couturier and Fioleau (2000) noted that it is difficult to conclude that the source of financing is neutral with respect to company profitability. As far as Ghana is concerned, there has not been any empirical research to prove whether debt has a positive or negative effect on corporate value. This study represents a bold attempt at providing empirical evidence to confirm the veracity or otherwise of the popular theoretical proposition by M & M that leverage has no effect on firm value by using data from a company in a developing economy. This study will therefore contribute to the current theoretical debate surrounding the effect of leverage on corporate value.

Since most of the empirical works in this field were conducted in the developed world using many companies operating in different sectors, this study is distinct as it focuses on

only one company (AngloGold Ashanti) in a particular sector (mining) in a developing country context. Apart from generating a research document which would be a reference material for students, researchers and stakeholders in the mining sector, this study would also whip up interest in the field of corporate finance and encourage more research in the third world to generate benchmarks or industry averages to guide corporate managers in this part of the world.

1.7 METHODOLOGY OF STUDY

1.7.1 Type and Source of Data

Purely secondary data was used for this study. The annual audited financial statements of the company (AngloGold Ashanti) from year 1998 to 2005 served as the main source of data. Information on capital structure (leverage), earnings on equity capital, assets and all the information needed to estimate the performance indices were obtained from these financial records of the company. It was, however, difficult to obtain all these financial records from the company's head office. A search on the Internet was made to obtain the remaining financial statements.

1.7.2 Method of Data Analysis

Tabular/Trend analysis was done to examine the effect of leverage and the country's economic development on corporate value. Corporate value was proxied with three measures: Profit After Tax (PAT), Earnings Per Share (EPS) and Tobin's q. The first two measures were easily obtained from the financial statements of the company.

Tobin's q is defined as the ratio of market value of assets to their replacement value at the end of the fiscal year. The denominator, the replacement value of assets, was proxied by the book value of total assets. There are different methods of measuring Tobin's q, such

as replacement cost measure of Lindendburg and Ross (1981), an alternative measure in Perfect and Wiles (1994), and simpler measures in Chung and Pruitt (1994) and Doidge, Karolyi, and Stulz (2004). Different measures of Tobin's q and their relative efficiency is discussed in DaDalt et al (2003). Comparing measures by Perfect and Wiles (1994) and Chung and Pruitt (1994), DaDalt et al (2003) suggest that the simple approach is preferable except in cases when extreme precision of the q estimate is paramount and sample selection bias is not likely to be an issue. Chung and Pruitt also argue that more complicated measure such as the one in Lindenburg and Ross drops out large number observations due to data availability. They also argue that their simple measure is highly (96%) correlated with the more accurate measure of Lindenburg and Ross.

The modified but simple version of the Tobin q by Chung & Pruitt (1994) is worth employing in empirical work since it does not require an estimate of the market values of debt and preferred stock, and approximates the replacement value of assets as its book value. This makes the computer programming easier and alleviates the need to gather bond and preferred yield data.

The Chung and Pruitt (1994) measure is given as:

$$q = (MVS + D)/TA$$

where:

MVS = Market value of all outstanding shares

(i.e. firm's Stock Price* Outstanding Shares)

TA = Firm's assets (i.e. cash, receivables, inventory and plant book value)

D = Debt defined as:

$$D = (AVCL - AVCA) + AVLTD$$

Where;

AVCL = Accounting value of the firm's Current Liabilities = Short Term Debt + Taxes Payable

AVLTD = Accounting value of the firm's Long Term debt = Long Term Debt

AVCA = Accounting value of the firm's Current Assets

= Cash + Inventories + Receivables.

In Aggarwal and Kyaw (2006), the measure of leverage used was the ratio of long-term debt, debt in current liabilities, and accounts payables to total assets. As firms in many different countries use trade financing as part of their permanent financing, the use of this measure of leverage overcomes this international variation in financial practice. In addition, using a book leverage ratio seems to be more appropriate in our case as market value measures of leverage would give too much weight to recent changes in equity values. This can be a problem that can confuse the results when Tobin's q is regressed on market leverage as an increase in equity value will lead to changes in both the dependent and independent variables, i.e., higher equity prices will lead both to a lower leverage and a higher Tobin's q.

In this study, therefore, Tobin's q was measured by using Aggarwal and Kyaw's (2006) definition of leverage.

Lauterbach and Tolkowsky (2005) fit a nonlinear relation between q and control holders' vote, similar to McConnell and Servaes (1990). The nonlinear formulation is preferred because it assumes a nonlinear relationship between leverage and company value.

The effect of the country's economic development on firm's value was captured by including GDP growth rate.

1.8 Organization of the Study

The study was organized into five chapters. In chapter one, the author gave a brief background to the general area of study. In this chapter, the major objective within the scope of the purpose of the study was clearly stated. The last section of chapter one focused on the organization of the study. This chapter basically served as the background for the study.

An extensive and thorough review of relevant literature aimed at obtaining detailed knowledge of the subject matter being studied was provided in chapter two. This chapter demonstrated the existing body of knowledge regarding sources of company financing, corporate value and factors affecting corporate value, the M&M theories/propositions, among others. This body of knowledge provided, formed the framework within which the research findings were interpreted.

Chapter three talked about the theoretical framework for the study and this basically had to do with the company (AngloGold Ashanti) background information and certain risk indicators faced by AngloGold Ashanti.

In chapter four, the data have been summarized, organized and illustrated with the use of appropriate descriptive and inferential statistics. Here again, the results of the data analysis were discussed in the context of the study objective and the literature reviewed in chapter two. A summary of the main findings of the study and the conclusions drawn from the study were covered in the fifth chapter of the study.

CHAPTER 2

2.0

LITERATURE REVIEW

2.1 SOURCES OF COMPANY FINANCING

There are two ways of financing a business: with debt (borrowed money) or with equity (you and other owners' own money).

Debt refers to any money that your business borrows and is obliged to pay back (Ross *et al*, 2001). Debt is usually obtained from banks and other traditional lenders, but it may also be obtained from other individuals. Debts will usually require monthly payments of principal and interest over a fixed period of time.

Debt financing is divided into two categories, based on the type of loan: long term debt financing and short term debt financing. Long term debt financing usually applies to assets your business is purchasing, such as equipment, buildings, land, or machinery. With long term debt financing, the scheduled repayment of the loan and the estimated useful life of the assets extend over more than one year.

Short term debt financing usually applies to money needed for the day-to-day operations of the business, such as purchasing inventory, supplies, or paying the wages of employees. Short term financing is referred to as an operating loan or short term loan because scheduled repayment takes place in less than one year.

The advantages of debt financing include:

- One does not have to give up any ownership or future profits of the business. The lender has no control in how the business is run. All they can require is for you to pay your loan back.
- Using borrowed money to obtain business assets will allow you to keep your business profits in the company or use those profits to pay a return to the owners of the company.
- Interest paid on the loan is generally tax deductible. (Smith & Watts 1992)

Disadvantages of debt financing include:

- The company must have sufficient cash flow to repay its loans.
- In most cases cash profits would be used to pay back the loans. If the business has a lot of debt, it may end up with a profit but not have any cash to show for it.
- You will have to deal with lenders and their criteria to obtain a loan.
- The riskier the loan is, the higher the interest rate on the loan.
- Most lenders will require small business loans to be co-signed or guaranteed by the owner(s) of the business.
- Companies usually require collateral to secure the loan. If you cannot repay your loan, the lender has a right to seize your collateral.
- Too much debt may impair the credit rating of the company and its ability to raise money in the future. (Smith & Watts 1992)

Equity is money that is received in exchange for a share of ownership in the business (Ross *et al*, 2001). Stockholders purchasing shares in a corporation, for instance, create equity financing, as do angel investors who provide funding.

Small business owners may invest their own funds into their businesses, funds gleaned from inheritance, savings, or even the sale of personal assets which then serves as equity financing for the business.

Besides contributing to a healthy balance sheet, making a personal investment that serves as equity financing in a business is often necessary to attract other investors and/or lenders. If you, as the small business owner, are not prepared to put any of your personal funds into the business, what does that say to anyone else who might be thinking of investing in the business - or that you are asking for a business loan? Investors and lenders like to see an equity financing contribution of 25 to 50 percent (Ross *et al*, 2001).

Generally, investors and lenders take your equity financing contribution as a sign of your commitment to the business.

Advantages of equity financing include:

- Equity contributions do not have to be paid back even if your company goes bankrupt.
- Your business assets do not have to be pledged as collateral to obtain equity investments.
- Businesses with sufficient equity will look better to lenders and investors
- Your business will have more cash available because it will not have to make debt payments. (Mc Connell & Servaes, 1990)

Disadvantages of equity financing include:

- You will have to relinquish ownership and a share of your business's profits to other equity investors.
- Other owners may have different ideas than yours on how the business should be run.
- Dividend payments to investors in some corporations are not tax deductible. (Morck, Shleifer & Vishny, 1998)

Debt-to-Equity Ratio

According to Ross *et al* (2001) a company's debt-to-equity ratio is the business's total debt divided by the business's total equity. Lenders and potential investors will look at this figure to determine if your business is being operated efficiently. If your debt-to-equity ratio is too high (i.e. your business is carrying too much debt), lenders will view your business as high risk and you may have trouble obtaining new financing. Also, if your business has too little equity, lenders may question how committed the owners are to the business.

A debt-to-equity ratio that is too low usually indicates the business is not effectively using its cash and using profits to obtain business assets. This may be discouraging to investors because it will mean less profits being distributed to them.

Lenders generally consider an acceptable debt-to-equity ratio anything lower than 3:1. If your ratio is higher than that, a lender may consider your business too risky to lend money to. However, the industry you operate in will be taken into consideration. Businesses in certain industries (such as real estate and banking) operate with ratios significantly higher than 3:1.

2.2 TOBIN'S q AS A MEASURE OF CORPORATE VALUE

Since Brainard and Tobin (1968) and Tobin (1969) introduced the concept of Tobin's q over thirty years ago, it has become the most widely used measure of a firm's value and thus the incentive to invest. These original papers begin with the intuition of Keynes (1936) and Grunfeld (1960) that a firm should invest in additional assets if this activity increases the stock market's valuation of the firm. In other words, a firm should not acquire new assets unless they are used by the firm to create at least as much market value as the cost of reproducing them; otherwise, the assets would be better employed elsewhere. They then build upon this idea by arguing that the firm should acquire more assets if the ratio of the market valuation of these assets to their replacement value, Tobin's q , exceeds one. Tobin's q is quite likely the most commonly used regressor in empirical corporate finance.

As has been widely discussed in the corporate finance and macroeconomics literature, all observable measures or estimates of the true incentive to invest, termed q proxies, are likely to contain measurement error. In principle, Tobin's q is observable: the market value of the firm's assets can be measured by examining the market value of the firm's debt and equity, and the replacement cost of assets can be computed via accounting information and the price at which the assets can be purchased or sold.

In practice, measuring Tobin's q presents numerous difficulties because accountants do not directly keep track of the market value of a firm's debt or the replacement cost of a firm's assets, especially intangible assets. These difficulties force a data analyst to use

some sort of algorithm to estimate the replacement costs and market values from accounting figures. Further complicating the measurement problem is that Tobin's q only equals the true incentive to invest under stringent assumptions.

Researchers have developed and used a variety of proxies to measure Tobin's q, ranging from cumbersome and complex methods to simpler but potentially less accurate versions. In 1997, Lewellen and Badrinath published their proxy for Tobin's q, and demonstrated that it was superior to any existing proxies. Perhaps their most significant contribution was in their approach to determining a firm's replacement cost of fixed assets. By assuming that retired assets are totally depreciated, they show that annual investment is annual depreciation plus the difference between the current and prior year's net fixed assets. Once the backward summation of the annual investments equals gross fixed assets in the year of the replacement cost valuation, they adjust each investment downward for depreciation and upward for inflation. Without elaborating on other refinements, the sum of the inflated book value of investments represents their estimate of the replacement value of fixed assets.

The nature of their approach requires public investment data going back potentially many years, but such data do not exist prior to the year a firm goes public. The result is that their measure is prone to losing numerous observations of younger, newly listed firms. This can be a serious problem if the lost observations result in conducting empirical analyses with samples that are not representative of the population.

To address this problem, Tompkins James G. (1999) estimates a time series of investments for the years during which a firm is not public. His annual estimate

comprises the firm's average investment, calculated from the years during which public data are available, plus a residual investment value necessary to force convergence to gross fixed assets. This modification almost doubles the sample size compared to the pure Lewellen-Badrinath (1997) q measure.

In the finance literature today, Tobin's q remains an important and widely accepted measure of corporate performance. Defined as the ratio of the market value of a firm to the replacement cost of its assets, q has been employed to explain a number of diverse corporate phenomena, such as cross-sectional differences in investment and diversification decisions (Jose, Nichols, and Stevens (1986) and Malkiel, von Furstenberg, and Watson (1979)), the relationship between managerial equity ownership and firm value (McConnell and Servaes (1990) and Morck, Shleifer, and Vishny (1988)), the relationship between managerial performance and tender offer gains (Lang, Stulz, and Walkling (1989)), investment opportunities and tender offer responses (Lang, Stulz, and Walkling (1989)), and financing, dividend, and compensation policies (Smith and Watts (1992)). Other examples: McConnell and Servaes (1990) and Morck, Shleifer, and Vishny (1988) use Tobin's q as a proxy for firm value and examine how it is affected by different classifications of equity holders.

Lang, Stulz, and Walkling (1989, 1991) use q to examine the relation between managerial performance and tender offer gains, and also to test the free-cash-flow hypothesis. Yermack (1996) uses q to investigate the relation between board size and company performance. Berger and Ofek (1995), Lang and Stulz (1994), and Lloyd and Jahera (1994) use Tobin's Q to analyze the relation between corporate diversification and firm performance. Opler and Titman (1993) use Tobin's Q as a proxy for investment

opportunities to examine the determinants of leveraged buyouts. Denis, Denis, and Sarin (1994) and Lang and Litzenberger (1989) use Q as part of their analysis to investigate the effects of dividend changes. Park and Song (1995) use Q as a proxy for firm performance as they investigate monitoring by outside block holders.

Despite its influence over many important aspects of corporate finance, discussions with several senior financial managers suggest little, if any, reliance upon q in real-world decision analysis.

While much of the reason for this managerial shunning of such a potentially powerful financial tool may be attributable to unfamiliarity with q and its many faces, it is also clear that the availability of timely and accurate q data is severely limited when compared with known sources of other important financial variables, such as beta (Pruitt, Stephen W., 1994). Chung and Pruitt (1994) also argue that part of the reason for the shunning of q is that the traditionally accepted methods of measuring q , such as the Hall (1990) and Lindenberg and Ross (1981) methodologies, are complex in their calculations and require access to multiple, limited databases.

Chung and Pruitt reason that if there were a simpler approximation of the q ratio that statistically resembled the complex but rigorous measures, then Tobin's q would become a useful financial tool for analysts.

Lewellen and Badrinath (1997) also argue that even the sophisticated, purportedly "correct" measures for calculating q , such as the Lindenberg and Ross (1981) algorithm, are "...flawed in design, are unstable in application, produce downward-biased measures,

and are prone to rank incorrectly." Lewellen and Badrinath develop a proxy for q (hereafter L-B,) that avoids these pitfalls. They indicated that their methodology is superior to any existing q measures. They also argue that the computational costs are reasonable. However, it was later found out that the Lewellen and Badrinath (1997) measure of q can produce a high percentage of missing observations for a given sample. This could be a serious weakness if the missing and non-missing observations have significantly different characteristics. Specifically, when a sample is not representative of the population, then the risk inherent in an empirical study is that the conclusions that apply to the sample do not necessarily apply to the population the sample is meant to represent.

The primary contribution by Tompkins James G. (1999) is the introduction of a slightly modified version of the Lewellen and Badrinath q . His version has over a 99.8% correlation with the pure L-B Q and does not suffer from a high percentage of missing observations.

A modified version of the Tobin q by Chung & Pruitt (1994) is worth employing in empirical work since it does not require an estimate of the market values of debt and preferred stock, and approximates the replacement value of assets as its book value. This makes the computer programming easier and alleviates the need to gather bond and preferred yield data.

2.3 M&M PROPOSITIONS

M&M propositions are famous arguments advanced by two Nobel laureates, Franco Modigliani and Merton Miller about the effect of a firm's capital structure on its corporate value. The following assumptions were made about the environment in which the firm operates:

- There are no transactions costs for buying and selling securities and there are no bid-ask
- Spreads (i.e., the prices for buying and selling securities) are the same.
- The capital market is perfectly competitive (firms and investors are all price takers).
- There are no bankruptcy costs.
- There are no corporate or personal taxes.
- All agents (firms and investors) have the same information.

The main idea in M&M proposition 1 is that given these assumptions, each investor can replicate the cash flows that he would receive by buying the securities of any firm regardless of how leveraged this firm is. For instance, an investor can replicate the cash flows that firm U's equity generate by buying equal fractions of firm L's equity and debt. Likewise, an investor can replicate the cash flows that an equity holder of firm L gets by personally borrowing money (i.e., creating a homemade leverage) and using the money to buy the equity of firm U. Consequently, the market values of firms with different capital structures should be exactly equal; otherwise there are opportunities to make money (i.e., opportunities for an arbitrage).

That is, someone can sell the expensive securities and buy the cheap ones and end up with more wealth than he initially had. If these arbitrage opportunities are exploited, the prices of the cheap securities will increase and the prices of the expensive ones will fall so that in a competitive equilibrium, the market values of two types of firms will be the same. This result is essentially a particular case of the "law of one price": in competitive equilibrium, identical objects (here securities that yield the same future payoffs) must be traded at exactly the same price ((Ross *et al*, 2001).

Another way to interpret M&M1 is that if the capital market is perfectly competitive and there are no taxes and no transaction costs, investors do not need firms to lever or unlever their positions since they can utilize "homemade leverage," by either borrowing money personally to lever up their positions, or lending money personally (by buying the debt of levered firms) and thereby unlever their position. As a result, investors who do not like leverage, will not be willing to pay a premium on the equity of an all equity firm, and similarly, investors who do like leverage will not be willing to pay a premium on the equity of a leveraged firm. In short, investors will only be interested in the terminal cash flows of firms, not in the way these cash flows are split between equity holders and debt holders. Consequently, firms with equal cash flows should have equal values. It is important to note that if firms had market power (say due to their size) and were able to borrow at a lower interest rate than individual investors, then investors who want to lever their positions would have been willing to pay a premium on the equity of leveraged firms since these firms allow them to do something they cannot do on their own (at least not for the same price). Likewise, the absence of transaction costs is important since it

allows individual investors to replicate the positions that firms take on their behalf. The importance of the assumption that there are no taxes cannot also be overemphasized.

M&M1 shows that the total value of the firm is independent of its capital.

The expected rate of return (ROR) on the equity of a leveraged firm is the ratio of expected return to the initial investment. M&M2 says that the expected ROR on the equity of a leveraged firm is equal to the expected ROR on the equity of an unlevered firm plus a "financial-risk" premium. This premium is equal to the debt-equity ratio multiplied by the spread. The financial-risk premium shows that for each dollar that investors borrow and invest in the firm's equity, they earn a net return.

A firm actually pays out its cash flows which are given exogenously but since investors decide how much to pay for these cash flows when they buy the firm's equity, they effectively require the firm to pay them a certain rate of return.

Since the market is perfectly competitive, this rate of return is just equal to what investors can get elsewhere when they buy securities with comparable risks.

2.3.1 The implications of M&M propositions

It should be noted that the validity of these implications is limited to environments in which the assumptions underlying the M&M propositions hold.

In practice, all the assumptions are violated. Hence the implications that will be reported in this section should be viewed as benchmark results that hold under very specific assumptions.

2.3.1.1 M&M and the weighted average cost of capital

In order to know whether to undertake a project, a firm must take into account the cost of the project and the returns it yields. However since the cost of the project is typically paid before most of the returns are generated, the firm cannot simply sum up the returns and compare them to the cost of the project. For example, a project that costs one dollar and yields a return of one million dollars might sound like a great project if the returns are received shortly after the cost had been paid, but if the return is received, say, two hundred years from now, the project may not sound so attractive anymore. Thus, in order to evaluate projects, the firm needs to figure out what is the alternative cost of the capital invested in the project and take it into account in calculating the net return from the project. In other words, the firm needs to figure out what is the return it can receive on alternative investments that bear the same risks as the project in question and use this return as the discount rate to compute the net present value (NPV) of the project. This rate of return is often referred to as the cost of capital because it measures the opportunity cost of the project borne by investors who can invest their money elsewhere. In principle each project should have its own cost of capital.

In practice however, it is impossible to estimate project-by-project cost of capital, so instead firms estimate a benchmark company or even industry cost of capital, and use these benchmark in evaluating the NPV of projects.

Now, if we wish to evaluate projects of a given firm, we would need to know the appropriate discount rate to be used in computing the project's' NPV. One such discount rate that can be used is the Weighted Average Cost of Capital (WACC).

The idea is that the firm uses money from a variety of sources and it pays debt and equity holders for using their money. At first glance it seems that WACC depends on the capital structure of the firm so we would arrive at different conclusion regarding whether or not to adopt projects based on their capital structures. However, M&M2 says that the WACC is independent of the firm's capital structure.

2.3.1.2 The M&M propositions with corporate taxes

In this section one reviewed M&M's second article from 1963 in which they adjusted their original propositions from 1958 by adding corporate taxes into their model. To this end, the assumption on corporate tax is relaxed. It is assumed that firms pay corporate taxes on their profits. It turns out that many tax systems allow corporations to deduct interest payments from their tax bill as an expense, but do not allow them to deduct dividend payments as an expense, nor do they allow individual investors to deduct personal interest payments from their personal tax bills as an expense. Taken together, these provisions give corporate debt an advantage over equity and over personal debt. In particular, individual investors can no longer perfectly replicate the cash flows of leveraged firms, since debt is more costly for them given that they cannot deduct interest payments as an expense. Consequently, now individual investors will agree to pay a premium on corporate borrowing because they cannot get these tax savings themselves.

The M&M1 was modified to state that: the market value of a leveraged firm equals the market value of an unleveraged firm plus the present value of the tax savings on interest payments. The intuition for this proposition is that when the firm becomes leveraged, it

saves on corporate tax payments, so its value increases by the present value of the tax shield on future interest payments.

One of the less realistic assumptions in M&M is the assumption that debt is always riskless in the sense that the firm can always pay its debt holders in full.

This assumption does not hold in real life; there are states of nature in which the firm's earnings are insufficient to cover its debt payments so debt holders are only partially repaid.

2.4 EMPIRICAL EVIDENCE

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2.4.1 Leverage, Growth, Value, and the Financial Environment

Debt can have both positive and negative effects on the value of the firm so that the optimal debt structure is determined by balancing the agency and other costs of debt as means of alleviating the under- and overinvestment problems. When firms have surplus cash flow, debt forces the managers to pay out funds that might otherwise have been invested in negative net present value projects.

However, firms with outstanding debt may have incentives to reject projects that have positive net present value if the benefits from accepting the project accrue to the bondholders without also increasing shareholders' wealth. Therefore, as suggested by McConnell and Servaes (1995), the seeds of the under-investment problem lie in the solution to the over-investment problem.

The common idea behind the arguments by Jensen (1986), Myers (1977) and Stulz (1990) is that debt can have positive or negative effect on value of the firm depending on the firm's future investment opportunities. Therefore, the number of growth options in

the firm's investment opportunity set plays a crucial role in capital structure decisions as more growth options will lessen the over-investment problem and debt is not as necessary to prevent managerial over-investment (Morellec, 2001). Based on this model, prior literature provides a number of studies on the *relationship between debt and the growth opportunities* of firms. Jung, Kim and Stulz (1996) demonstrate that the optimal amount of leverage is the amount at which the marginal agency costs of debt, which is increasing with leverage, equal the marginal agency cost of managerial discretion, which is decreasing with leverage. They show how an increase in investment opportunities leads to a decrease in optimal amount of leverage. Hovakimian *et al* (2001) documents that firms should use relatively more debt to finance assets in place and relatively more equity to finance growth opportunities.

Further Barclay, Morellec, and Smith (2001) posit that as the level of growth options increases, the under-investment costs of debt increase and at the same time benefits of debt in mitigating free cash flow problem decrease. Hence, they suggest that the debt capacity of growth options is negative. In addition, Barclay, Marx and Smith (2003) point out that higher leverage results in lower firm value for firms with more growth opportunities and higher firm value for firms with more assets in place. Lang, Ofek and Stulz (1996) find a significant negative relation between leverage and future growth only for firms with low Tobin's q (low future investment opportunities). Overall, empirical results highlight that leverage prevents managers of the firms with poor investment opportunities from over-investing.

2.4.2 Leverage and Value of Firms with Different Growth Opportunities

A few prior empirical studies have investigated the *effect of leverage on firm's value* given the investment opportunity set. McConnell and Servaes (1995) investigate the relation between corporate value, leverage, and equity ownership for US firms. They find that for firms with high P/E ratios or for high-growth firms, value is negatively related to leverage and that in firms with low P/E ratio or low-growth firm's value is positively related to leverage.

Their evidence supports the contention that for low-growth firms, leverage acts as a monitoring mechanism to enhance firm value, whereas for the high-growth firms, leverage causes underinvestment and destroys the firm's value.

Some authors use non-US samples of firms and test for the relationship between leverage and firm value given the investment opportunity set: Jo *et al* (1994) with a sample of Japanese firms, Corby and Stohs (1998) with a sample of Irish firms, Gul (1999) with a sample of Japanese firms, Burton *et al* (2000) with a sample of UK firms, Harvey, Lins and Roper (2004) with emerging market companies, and Alonso *et al* (2005) with a sample of Spanish firms. As expected, except for the Japanese case noted earlier, most of them find a negative (positive) relationship between firm value and leverage in the presence (absence) of growth opportunities. However, no one study covers a large range of countries and the explicit relative role of institutional factors remains unexplored.

This is unfortunate as the use of debt to lessen agency and the under- and over-investment costs is expected to be more important in countries with poor investor

protection and law enforcement, poor capital market developments, and weaker outside monitoring mechanisms for firms.

2.4.3 Financial Environments and the Value Impact of Debt

Even though the agency conflicts between managers, outside shareholders and creditors are common in corporations throughout the world, the severity of agency problems to which investors are exposed can be expected to differ greatly across countries. There can be many reasons for such variations. One reason arises partly due to the fact that the legal protection of these investors varies internationally. The efficiency and effectiveness of corporate and other law differs across countries and so goes the level of protection against expropriation for investors – both creditors and outside shareholders. So, since countries differ in legal and institutional environments and the effectiveness of protecting investor rights,

there is little doubt that optimal value enhancing financial contracting choices such as capital structure choice should also differ across countries reflecting different approaches to mitigating agency problems (depending on the institutional and contracting environment). For example, for firms in countries with better investors (creditors and shareholders) protections, debt may be less useful as a value-enhancing tool. Likewise, as firms in countries with higher capital market development face less information asymmetry and lower agency costs, debt may play a less firm value-enhancing role. Similarly, in countries with bank dominated financial systems characterized by better monitoring of corporate activities by lending officers, debt may also be less useful in enhancing firm value. Prowse (1994) posits that to foster better outside monitoring of firms, Japan and particularly, Germany have encouraged concentrated holdings of

corporate debt and equity by financial institutions and other corporations and that this concentrated holding of a firm's financial claims may, in general, be the most efficient way of resolving agency problems in firms. Aivazian, Booth, and Cleary (2003) point out "...managerial control issues may be less severe in bank centric market characterized by constant monitoring of corporate activities by lending officers."

Jo *et al* (1994) argue that agency conflicts are mitigated in Japanese firms because of institutional arrangements and they find a positive relationship between leverage and growth opportunities in Japanese firms, which is the opposite of what we would expect in the US firms. Thus, the role of institutional features through which firms raise capital is important for firm's debt and dividend policies. More specific aspects of the financial environment in a country are detailed next. Legal Origin and Enforcement For firms in common law countries such as the US, the UK, and Canada, ownership is relatively dispersed compared to firms in civil law countries such as Belgium and Greece. In addition, managerial control is significantly greater for firms in common law countries. In contrast, firms in civil law countries are more likely to be owned, on average, by founding families (La Porta, Lopez-de-Silanes, and Shleifer, 1999). Hence the problem of managerial over-investment may not be as serious in civil law countries as it is in common law countries. Thus, one could expect a greater value impact of debt and dividends in common law countries with higher over-investment agency costs. However, as civil law countries are found to have poorer shareholders protections, the controlling shareholders in civil law countries can take actions that benefit themselves at the expense of minority outside shareholders.

In such cases, we expect that debt plays a more value-enhancing role in controlling over-investment agency costs for firms in civil law countries. Civil law countries – in general – also score lower in protecting creditors; thus, we expect a greater value-reducing role of debt in high-growth firms with under-investment agency costs.

The value impact of debt is expected to be higher in countries with weak legal environments. Investors protection obviously, for countries with better investor protection, the usefulness of debt in alleviating agency problems and enhancing firm value is expected to be less important.

Firms in countries with poor investor protection might need to hold more debt to enhance the firm value given the investment opportunity set. Therefore, for poor investor protection countries, debt should be more useful in enhancing low-growth firm value.

For low-growth firms in countries with good investor protection (especially shareholders protection), the value of a firm should be less sensitive to debt compared to low-growth firms in countries with poor investor protection. However, for high growth firms, better investor protection may also increase the agency costs of underinvestment so that the leverage-value relationship for such firms can be expected to be weaker. For firms in countries with better *creditor* protection debt should be a relatively less costly means to monitor firms. For low growth firms in such countries, the leverage-value relationship should be stronger. Again however, for high growth firms, better creditor protection may also increase the agency costs of underinvestment so that the leverage value relationship for such firms can be expected to be weaker. Overall, with better investor protection, the

sensitivity of firm value to debt should be lower for firms with low investment opportunities and higher for high growth firms.

2.4.4 National Financial Structure and Development

As capital markets grow and develop, they generally increase in relative size so that their size as a ratio of GNP also grows. Capital market development is generally also accompanied by improved disclosure practices and regulations. Firms in countries with higher levels of capital market (both stock and bond markets) development are, therefore, likely to face less information asymmetry and likely lower agency costs.

Thus, in these countries the value impact of debt may be lower. In addition, as discussed earlier, firms in countries where banks are more important sources of firm capital are also where the value relevance of debt may be lower.

Thus, there are good reasons to suspect that this leverage growth relationship may differ across countries especially as the level and nature of agency costs can be expected to differ internationally. Firms operating in different institutional settings will behave differently in mitigating agency costs of over- and under-investment. The strength of the leverage-value relationship for both high and low growth firms is hypothesized to differ across countries; being stronger in countries with low levels of financial development and poor financial environments that have high information asymmetries and high agency costs.

2.5 Ownership structure and corporate value

Berle and Means (1932) point out that potential conflicts of interest arise between corporate managers and dispersed shareholders when managers do not have an ownership interest in the firm. After Berle and Means' seminal paper, various aspects of this so-called agency problem have been analyzed. Among others, Jensen and Meckling (1976) formalize the relation between managerial equity ownership and the corporate value. They divide stockholders into two groups, inside shareholders who manage the firm and outside shareholders who do not. Both classes of shareholders are entitled to the same dividends per share. The inside shareholders, however, are able to augment their cash flows by additionally consuming non-marketable perquisites.

In this framework, there is an incentive for the manager to adopt investment and financing policies that benefit him, but cost the outside stockholders. Thus, the firm value depends on the fraction of shares owned by the management. The greater the management share, the greater the firm value.

Fama and Jensen (1983) point out offsetting costs of significant management ownership. When a manager only owns a smaller stake, he is disciplined toward firm value maximization by the market forces such as the managerial labor market (Fama 1980), the product market (Hart 1983), and the corporate control market (Jensen and Ruback 1983; Stulz 1988). In contrast, when a manager controls a substantial fraction of the firm's equity, he can entrench himself from these market disciplines. With effective control, the manager may indulge in non-value-maximizing behaviors such as high salary and empire building. This entrenchment possibility predicts that corporate assets become less valuable when the management holds a significant portion of shares. What Morck,

Shleifer, and Vishny (1988) and McConnell and Servaes (1990) try to accomplish is to document how these two offsetting forces are realized in real firms using cross-section data. Morck et al. write on this point as follows: "Theoretical arguments alone cannot unambiguously predict the relationship between management ownership and market valuation of the firm's assets. While the convergence-of-interest hypothesis suggests a uniformly positive relationship, the entrenchment hypothesis suggests that market valuation can be adversely affected for some range of high ownership stakes."

Morck et al. point out that it is not possible, *a priori*, to predict which force will dominate at any level of managerial ownership.

Thus, they argue that the relation between ownership structure and corporate value is an empirical issue. Demsetz (1983) argues that the ownership structure of a firm is an endogenous outcome of competitive selection in which various cost advantages and disadvantages are balanced to arrive at an equilibrium organization of the firm. He noted: "One cannot simply assert that diffuse ownership fails to yield maximum profit or maximum value of the firm. A decision by shareholders to alter the ownership structure of their firm from concentrated to diffuse should be a decision made in awareness of its consequences for loosening control over professional management. The higher cost and reduced profit that would be associated with this loosening in ownership control should be offset by lower capital acquisition cost or other profit enhancing aspects of diffuse ownership if shareholders choose to broaden ownership." Accordingly, he concludes that ownership concentration and profit rate should be unrelated.

As mentioned above, Demsetz and the others suggest quite different implications about the relation between management ownership and firm's performance. Demsetz argues that there should not be any significant relation between management ownership and firm's performance with a few possible exceptions that we would mention below. In contrast, the others argue that theory itself cannot tell much about the specific relation between management ownership and firm's value. They say it is rather an empirical issue. How could Demsetz and the others suggest quite different implications?. Morck et al. seem to think that management can indulge in non-marketable perquisite consumption at the expense of outside shareholders. There are two countervailing forces in this regard. On one hand, as the management ownership increases, the management itself bears the greater portion of the cost of perquisite consumption, which will enhance self-discipline on perquisite consumption. On the other hand, as the management ownership increases, the management effectively protects himself from market discipline on perquisite consumption, which will reduce external discipline on perquisite consumption. There exists a trade-off between self discipline and external discipline as the management ownership changes. As they point out, their theory does not tell us anything about whether management's optimal perquisite consumption increases or decreases as the management ownership changes. It is to be found empirically.

According to Demsetz, there is no free lunch. If there exists a possibility for management to indulge in excessive perquisite consumption at the cost of outside shareholders, rational investors would take into account this possibility and try to make management bear the full cost of expected perquisite consumption at the time they invest in the firm. The resulting outcome is desirable for neither the management nor the outside investors.

Both management and outside investors would be better off if they find some mechanisms to reduce perquisite consumption. To Demsetz, increasing management ownership is a way of reducing this agency problem through the management's self commitment not to indulge in excessive perquisite consumption, and therefore it is not right to say that increase in management ownership causes higher agency cost through effective entrenchment. Rather, in Demsetz's theory, the cost of increasing management ownership arises from a different source. To increase management ownership, the management should invest a larger portion of its wealth in the firm he manages.

This means that the management should take higher firm-specific risks and forgo benefits of diversification. To induce increased management ownership, the firm or the investors as a whole should compensate the management for bearing these higher risks, or for sacrificing diversification.

This compensation will raise capital cost of the firm. Also, given the size of the management wealth, maintaining a high level of management ownership restricts the firm size and thus economies of scale in production. There exists a trade-off between agency cost on one side, and capital cost and production cost on the other. In the process of firm value maximization considering these trade-offs, shareholders as a whole (including the management) determine the general ownership structure and the management ownership. In Demsetz's firms, management ownership level is determined endogenously together with other factors affecting the firm performance, leading to lack of any significant relation between the management ownership and the firm value. In his recent book, Demsetz (1995, pp. 66-72) recognizes that there might be one possible exception to this prediction on the relation between ownership structure and firm's performance. Demsetz

suggests that if the management indulges in *amenity* consumption and he has sufficient wealth to persist in amenity consumption, the *recorded* performance and market value of the firm can be depressed in equilibrium.

Here, amenity is defined as the way firm's assets are used and the nature of the product the firm produces. Demsetz further notes: "An individual who owns a newspaper might derive utility from influencing the political tastes of readers.

Catering to this preference may come at the expense of profit, for readers might not relish continued exposure to the owner's political philosophy in the news and editorializing given to them, and it certainly will alter the content of the newspaper as compared to one designed simply to maximize profit."

In this case, the management would rather continue amenity consumption even though he should fully pay for it in the form of low profit and low market valuation of his firm. This is more likely to be sustained in those firms where the incumbent management holds large enough shares to secure control over the firm from corporate control market.

If this kind of amenity consumption is a dominant motive for the management to hold large, sometimes majority, shares, we expect to see low performance in those firms with large management ownership. They suggest another channel through which the management ownership affects the firm value. Investors, *ex ante*, can ask full payment for the expected management perquisite consumption. Management may indulge in more perquisite consumption *ex post* than expected *ex ante* at the cost of outside shareholders. The occurrence of this event will lower firm's performance than implicitly contracted for.

There exists a possible remedy for this. Takeover can eliminate excessive *ex post* perquisite consumption. Accordingly, we expect to run into management indulging in excessive *ex post* perquisite consumption more frequently in firms where the management owns a large enough share and thus the takeover threats do not work. This conjecture leads to the empirical implication that there will be negative relation between management ownership and the firm performance. As a measure of firm's performance, Morck et al. and McConnell et al. use Tobin's Q, whereas Demsetz and Lehn use profit rate.

CHAPTER THREE

3.0

Theoretical Framework

3.1 The Company: AngloGold Ashanti

3.1.1 Background Information

Over a century after its incorporation, Ashanti Goldfields Company Limited remains one of the largest producers of gold in the world, achieving an annual gold production of 1.74 million ounces in 2000. It is Ghana's largest earner of foreign funds. AngloGold Ashanti Limited operates as a gold producer worldwide. It engages in open-pit and underground mining and surface metallurgical operations in Argentina, Australia, Brazil, Ghana, Guinea, Mali, Namibia, South Africa, Tanzania, and the United States. As of December 31, 2005, the company had approximately 63.3 million ounces of proven and probable gold ore reserves. AngloGold Ashanti also sells silver, uranium oxide, and sulphuric acid. The company has strategic alliances with Red 5 Limited for exploration activities in Siana project; an exploration alliance with Eurasia plc for prospects being identified in the Chita and Buyat regions of Russia; and an exploration alliance with Redstar Gold Corporation. It also has consultations and collaborations with various South African gold mining companies, as well as with the South African government departments of health, labor, and minerals and energy; and organized labor. The company was incorporated in 1944 and is headquartered in Johannesburg, South Africa. It is the only mining operation on the New York and London stock exchanges run by black Africans. AngloGold Ashanti is a controlled company with its parent company, Anglo American plc, holding

more than 50% of the company's issued share capital and is therefore, not subject to the director independence requirements of the New York Stock Exchange (NYSE).

Originally operating with a single mine—the Obuasi mine in Ghana's Ashanti region – it has in recent years expanded aggressively throughout Africa and now operates seven mines in Ghana, Zimbabwe, Guinea, and Tanzania. The company also maintains 25 active exploration projects in six African countries and about 20 outside the continent.

Ashanti's most productive mine is Obuasi, which, despite over 100 years of continuous operation, is still one of the top-producing mines in the world and the largest mine in Africa outside South Africa. Conscious of its success on an often volatile and troubled continent, Ashanti prides itself in its relationships with local authorities and traditional political and social institutions in the African countries where it operates. The company has assisted local communities with infrastructure projects such as roadways, water and electricity access, and education.

The rich goldfields in the Ashanti region of what is now Ghana were controlled by the powerful Asante (Ashanti) state as far back as the 17th century. The British colonization of Ghana in 1874 and the ensuing Ashanti wars brought a large number of Europeans to the area, and soldiers and travelers spread the word about the region's legendary gold reserves—"you could pick up gold as you would potatoes," reported one traveler. Widespread interest opened the region for large-scale commercial gold production. In 1890, Joseph E. Ellis and Chief Joseph E. Biney, Fatwe merchants from Africa's Cape Coast, and their accountant Joseph P. Brown negotiated mining concessions for 100 square miles in the Obuasi District.

There they opened the Ellis Mine and introduced modern industrial mining techniques to the area. The Ellis mine operated for five years, then the partners sold the concession to Edwin Arthur Smith of the London-based firm Smith and Cade. With the overthrow of the Ashanti king in 1896, the Ashanti protectorate was brought directly under British control, and Cade was given approval to mine the region.

On June 11, 1897, Cade listed the Ashanti Goldfields Corporation Ltd. on the London Stock Exchange and set up operations at Obuasi on December 24 of that same year. The technique of adit mining--wherein a horizontal passage is dug from the earth's surface into the mine--proscribed by mining engineer John Daw tapped into the most immediately accessible ore in the hills around Obuasi and yielded initially impressive results. The Obuasi mine yielded 2,544 ounces of gold in its first year of operation and 4,673 ounces the second year.

This early success, coupled with the devastation of the South African gold trade during the Boer War (1899-1902), fed Ashanti's rapid growth that continued until the uprising of the Ashanti people against British rule in 1900.

The impact of the anti-colonial conflict on Ashanti was devastating. Work was halted; mines became run-down and collapsed due to lack of upkeep. However, the good relations maintained by Daw and Cade with their local employees ensured the safety of the European staff during the hostilities. After the end of the conflict--despite the arrival of the railway line--Ashanti continued to suffer.

Output did not return to previous levels, leading to shareholder skepticism over Daw's mining techniques. Edwin Cade died in 1903, leading to a further devaluation of shares. In 1905, an independent assessment of Ashanti operations was carried out by chemist W.R. Feldtmann and mining engineer J.A. MacTear. They criticized Daw's adit mining approach, declaring that the easily reachable ore was nearly exhausted and that the hills around Obuasi did not contain the rich reefs (veins of ore) once believed. Daw resigned in 1906, and Feldtmann took over as consulting engineer. Under Feldtmann, Ashanti underwent a period where output was slowed to allow for a change in mining techniques. Shallow adit mining was discontinued in favor of shaft mining in which a vertical tunnel is dug deep into the ground. To accommodate these new techniques, the company's profits were directed into new equipment. Feldtmann also developed more efficient methods of treating gold ore once it was mined. The discovery of an exceptionally rich ore deposit in 1908 brought fruit to Feldtmann's efforts, and Ashanti's success increased until the advent of World War I forced cutbacks in operations.

After the war, Ashanti saw a yearly increase in gold output. Significant discoveries in 1937 of gold along the Obuasi fissure and other locations gave rise to a time of great optimism at Ashanti. The company made plans for major expansions and budgeted for increased output. These plans were cut short by the dawn of World War II, which had a disastrous effect on the entire African gold mining industry.

Most mines in the Gold Coast region were shut down for the duration of the war, but a few profitable operations-including Ashanti--were kept open on a "care and maintenance" basis, making do with aging and obsolete equipment.

The end of World War II saw a short surge in the African gold industry (often referred to as the "jungle boom"), but that growth was short-lived. The industry had been cut off from foreign investment since 1942, and many mines that had opened shortly after the war found that they could not sustain themselves, and quickly closed. Ashanti was one of only four operations on the Gold Coast that remained open during this time and was the largest and most profitable. At this time, Ashanti was led by its autocratic chairman General Sir Edward Spears, who lived abroad and visited the company's operations only infrequently, treating it, according to Ashanti's company history, as "a personal fiefdom."

During Spears' leadership, the government of Ghana underwent rapid changes. In 1957, the British Parliament granted Ghana its independence, and Kwame Nkrumah became the country's first prime minister. In 1960, a new constitution was drafted, and the country became the Republic of Ghana, with Nkrumah as its president. Nkrumah proved to be an increasingly dictatorial leader, limiting freedom of action, imprisoning his critics, and finally introducing a one-party system in 1964. He nationalized five of Ghana's six producing gold mines (all but Ashanti), and granted Spears favorable land leases for Ashanti in exchange for derisory royalties. Nkrumah was deposed by the National Liberation Council (NLC) in 1966. The NLC soon began to question the contribution of mining operations such as Ashanti to the local economy and appeared to threaten the favorable land lease options Spears had enjoyed under Nkrumah. In response, Spears threatened to flood the mines.

The Ghanaian government then ordered the commissioner of mines and energy to seek new investors for its mining industry, including the Ashanti Goldfields.

Fortunately, Lonrho (London and Rhodesia Mining and Land Company--now Lonmin) already had an interest in acquiring the company, and the government quickly welcomed the takeover. Lonrho acquired Ashanti in 1968 for £3 million (US\$2.1 million) in stock, promising to preserve Ashanti as a separate entity. Ashanti was delisted from the London Stock Exchange, and Lonrho offered the Ghanaian government a 20 percent interest in the company in exchange for a 50-year extension on its land leases. The government would also have an option to buy another 20 percent of the company for £1 (US\$.70) per share. In response to the sentiment in Ghana that Ashanti had not been growing quickly enough to meet the country's currency needs, Lonrho also promised to increase the mine capacity from 45,000 to 80,000 tons of ore per month. Spears was invited to join the Lonrho board. He retained the title of chairman, but, after expressing much dissatisfaction with the increased government involvement with Ashanti, resigned in 1971. The Lonrho years were marked by turmoil. Violence between police and miners at the March 1969 strike killed three and wounded 28, and another strike in 1970 closed the mine for a week. A coup in 1972 once again forced a change in government, and the new administration, led by Ignatius Acheampong, demanded government "participation" in all mining companies and acquired 55 percent of Ashanti shares. The company was ordered to change its name to the Ashanti Goldfields Company and relocate its headquarters to Accra from London.

As part of their "participation" in Ashanti's operations, the government appointed Lloyd A.K. Quashie, a geologist and mining expert, to Ashanti's board of directors as deputy managing director. Under his direction, the company began efforts to improve conditions for local workers, and instituted a program to decrease the percentage of "expatriate

positions"--positions held by non-Africans. The program sent "promising young Ghanaians" to universities abroad, with the idea that they would return to work for the company, supplanting the expatriates. One of the first recipients of these educational opportunities was Sam E. Jonah, who attended Exeter's Camborne School of Mines in Cornwall, England, and the Imperial College of Science and Technology in London and later became the CEO of Ashanti.

Despite the turbulent times, Ashanti continued to prosper, reaching a peak production level of 533,000 ounces in 1972. Unfortunately, by that time, many ore deposits had been exhausted. This depletion, combined with the loss of foreign exchange and a high tax bill led to another decline through the seventies. The company was unable to expand its interests, invest in new plants, or even replace outdated equipment. Annual production fell to 232,000 ounces in 1980. Profits continued to fall, and in 1982, the company experienced the first operating loss in its history.

It took another governmental shift to turn the company's fortunes around. In 1981, the Provisional National Defence Council, led by Jerry Rawlings, took control. At first, the new government's socialist ideology seemed to spell even more trouble for the Ashanti. But by 1983, the government realized that outside capital would be needed to achieve its goal of rebuilding Ghana's economy, so the political stance shifted to welcome a more free-market philosophy. Its Economic Recovery Program, backed by the International Monetary Fund (IMF), the World Bank, and Western aid donors aimed to rehabilitate Ghana's major export earners, and Ashanti was one of its major beneficiaries.

In 1985, Ashanti was granted a £159 million (US\$111 million) IMF loan, and the new Minerals and Mining Law allowed Ashanti to keep 45 percent of its export earnings. With this fresh infusion of capital, Ashanti was ready for an ambitious program of expansion and modernization. In 1986, the company's first Ghanaian CEO, Sam Jonah, was appointed. He embarked on a major overhaul of company operations. While the company's headquarters had been in Accra for twelve years, much of the planning and budgeting was still carried out by consultants in the London office. Jonah transferred these duties to Ghana, keeping the staff geographically close to the mine site. Communications between management and line workers was improved, wages for mine workers were raised, and the company began the community renewal plan that is now a hallmark of all its operations throughout Africa. Ashanti purchased new equipment for mining surface oxides and commissioned a heap leach (a low-cost method of extracting ores) facility in 1990, and the company built an oxide treatment plant in 1991. This project established the Obuasi mine as the largest surface mining operation in Africa and the mine as a whole became one of the top five in the world.

Gold production reached record highs, increasing by 25 percent. Loans from the International Finance Corporation (IFC) helped the company launch its Ashanti Mines Expansion Program, allowing it to take advantage of highly profitable, lower grade underground gold resources.

Holder of the majority of Ashanti shares, the Ghanaian government in 1994 announced its plan to sell 17.9 million shares--a full half of its 55 percent stake--in a share flotation on the London and Ghana stock exchanges.

The company reserved 1.2 million shares exclusively for Ghanaians, and each of Ashanti's employees received five free shares. In 1996, Ashanti became the first African-operated company to list on the New York Stock Exchange. The capital raised by these two flotations (the London IPO alone was worth \$454 million) allowed the company to pay its debts to the IFC and begin its expansion in Ghana and in other African nations. By the end of the 1990s, in addition to the original mine in Obuasi, Ashanti operated the Ayanfuri, Bibiani, and Iduapriem mines in Ghana, the Siguiri mine in Guinea, and the Freda-Rebecca Mine in Zimbabwe. The nineties also saw Ashanti expanding its links with the communities where its mines are located. Beginning in 1990-91, the company supplied water resources such as hand pumps, boreholes, and hand-dug wells for the Obuasi township and 137 smaller villages and townships. Ashanti also undertook projects to bring electricity to villages without it and to build schools for the families of its staff.

A well-publicized crisis at the end of the nineties nearly spelled disaster for the company. The price of gold rose dramatically in September of 1999. The company had outstanding hedge contracts, and the rise in gold price exposed the company to possible margin calls on these contracts. Ashanti's credit lines were frozen. The freeze resulted in a shortfall of capital, which put in danger the completion of the Geita mine in Tanzania, slated for opening in 2000.

Ashanti successfully resolved these problems, however, by negotiating a period of margin-free trading and a \$100 million bridge facility to finance completion of the Geita mine. Geita opened in August of 2000, three months ahead of schedule, and was the largest gold mine in Tanzania.

Ashanti reported a gold production of 1.74 million ounces for the year 2000—a record for the company, despite its recent difficulties and the cessation of surface mining operations at Obuasi. In 2001, the company's future plans included further expansion in Africa, including operations in the Ivory Coast and the Congo. AngloGold and Ashanti merged in 2004; all of its operations, with the exception of Freda-Rebecca, remain in the AngloGold Ashanti asset portfolio today. The principal subsidiaries of AngloGold Ashanti include: Ashanti Goldfields (Ayanfuri) Limited; Ashanti Goldfields (Bibiani) Limited; Ghanaian-Australian Goldfields Limited (80%); Societe Ashanti Goldfields de Guinee S.A. (Guinea) (85%); Ashanti Goldfields Tanzania Limited (Tanzania); Ashanti Goldfields Zimbabwe Limited (Zimbabwe); Ashanti Treasury Services Limited (Isle of Man). The company has a board which comprises a unitary board structure of 15 directors who assume complete responsibility for the activities of the company, including the total risk management framework of the company. The board has a written charter that governs its powers, functions and responsibilities. The board contains the mix of skills, experience and knowledge required of a multinational gold company. The executive directors are appointed by the board to oversee the day-to-day running of the company through effective supervision of management. Executive directors are held accountable by regular reporting to the board, and their performance is measured against pre-determined criteria as well as the performance of their respective business units.

3.2 Risk factors faced by AngloGold Ashanti

In this section the risk factors have been organized into three categories:

- risks related to the gold mining industry generally;
- risks related to AngloGold Ashanti's operations; and

- risks related to AngloGold Ashanti's ordinary shares.

Risks related to the gold mining industry generally

The profitability of AngloGold Ashanti's operations and the cash flows generated by these operations, are significantly affected by changes in the market price for gold. The market price for gold can fluctuate. These fluctuations are caused by factors beyond AngloGold Ashanti's control, including:

- speculative positions taken by investors or traders in gold;
- changes in the demand for gold used in jewellery, for industrial uses and for investment;
- changes in the supply of gold from production, disinvestment, scrap and hedging;
- financial market expectations regarding the rate of inflation;
- the strength of the dollar (the currency in which the gold price trades internationally) relative to other currencies;
- changes in interest rates;
- actual or expected gold sales by central banks and the IMF;
- gold sales by gold producers in forward transactions;
- global or regional political or economic events; and
- costs of gold production in major gold-producing nations, such as South Africa, the United States and Australia. The price of gold is often subject to sharp, short-term changes resulting from speculative activities. While the overall supply of and demand for gold can affect its market price, because of the considerable size of above-ground stocks of the metal in comparison to other commodities, these factors typically do not affect the price in the same manner or degree as the

supply of and demand for other commodities tend to affect their market price. Table 1 presents the annual high, low and average afternoon fixing prices over the past 10 years, expressed in dollars, for gold per ounce, on the London Bullion Market. The table reveals a price volatility as low as \$24 per ounce in 1995 and as high as \$97 per ounce in 2003. Price volatility appears to be increasing with the gap between low and high being \$69 per ounce, \$97 per ounce and \$85 per ounce over the last three years. On 24 February 2005, the afternoon fixing price of gold on the London Bullion Market was \$433.75 per ounce.

Table 1: Gold Prices (\$ per ounce), 1994 – 2004.

Year	High	Low	Average
1994	396	370	384
1995	396	372	384
1996	415	367	388
1997	367	283	331
1998	314	273	287
1999	340	252	278
2000	317	262	279
2001	298	253	271
2002	347	278	310
2003	417	320	364
2004	456	371	410

Source of data: Metals Week, Reuters and London Bullion Market Association

If revenue from gold sales falls below the cost of production for an extended period, AngloGold Ashanti may experience losses and be forced to curtail or suspend some or all of its capital projects and/or operations and change its past dividend payment policies. In addition, it would have to assess the economic impact of low gold prices on its ability to recover any losses it may incur during that period and on its ability to maintain adequate cash and accounting reserves.

The company also faces development risk. AngloGold Ashanti's profitability depends, in part, on the actual economic returns and the actual costs of developing mines, which may differ significantly from its current estimates.

The development of its mining projects may be subject to unexpected problems and delays. AngloGold Ashanti's decision to develop a mineral property is typically based, in the case of an extension or, in the case of a new development, on the results of a feasibility study. Feasibility studies estimate the expected or anticipated project economic returns. These estimates are based on assumptions. Actual cash operating costs, production and economic returns may differ significantly from those anticipated by such studies and estimates. There are a number of uncertainties inherent in the development and construction of an extension to an existing mine, or in the development and construction of any new mine. The costs, timing and complexities of mine development and construction can increase because of the remote location of many mining properties. New mining operations could experience unexpected problems and delays during development, construction and mine start-up. In addition, delays in the commencement of mineral production could occur. Accordingly, AngloGold Ashanti's future development activities may not result in the expansion or replacement of current production with new

production, or one or more of these new production sites or facilities may be less profitable than currently anticipated or may not be profitable at all.

AngloGold Ashanti undertakes annual revisions to its respective Mineral Resource and Ore Reserve estimates based upon actual exploration and production results, depletion, new information and fluctuations in production and economic parameters.

These factors may result in reductions in its Ore Reserve estimates, which could adversely impact upon the life-of-mine plans and consequently the total value of AngloGold Ashanti's mining asset base and, as a result, could have a negative impact upon the market price of AngloGold Ashanti's ordinary shares.

Operational risks

AngloGold Ashanti faces many risks related to its operations that may affect its cash flows and overall profitability.

AngloGold Ashanti's use of hedging instruments to protect against low gold prices and exchange rate movements may prevent it from realising all potential gains resulting from subsequent gold price increases in the future.

AngloGold Ashanti currently uses hedging instruments to fix the selling price of a portion of its anticipated gold production and to protect revenues against unfavourable gold price and exchange rate movements. While the use of these instruments may protect against a drop in gold prices and exchange rate movements, it will only do so for a limited period of time and only to the extent that the hedge remains in place. The use of these instruments may also prevent AngloGold Ashanti from realising the positive impact

on income from any subsequent favourable increase in the price of gold on the portion of production covered by the hedge and any subsequent favourable exchange rate movements.

If the development of the deep-level ore deposits at Obuasi mine is not economically feasible, there may be a material negative impact on AngloGold Ashanti's operations and financial performance in the long term

A key aspect of the business combination of AngloGold and Ashanti is the development of the deep-level extension of the existing ore body at the Obuasi mine, otherwise referred to as the Obuasi Deeps. This development could potentially extend the life of this mine to well beyond 2020. In furtherance of this goal, AngloGold Ashanti has commenced a process of investing \$44 million over the next five years on further exploration and feasibility studies necessary to establish reserves and develop the most profitable extraction plan. Depending upon these results, the full development of the Obuasi Deeps may proceed in six to seven years time, but will take several years to complete. Initial scoping studies have indicated that the development of Obuasi Deeps will require an estimated capital expenditure of \$570 million in 2003 money terms over the anticipated life of the mine.

If as a result of this further exploration and following the completion of the feasibility studies, AngloGold Ashanti determines that the development of the Obuasi Deeps is not economically feasible, such determination may have a material negative impact on its operations and financial performance in the long term. The funding of the development of Obuasi Deeps will only proceed if it is determined to be economically feasible.

In addition, if the feasibility studies indicate that the development of the Obuasi Deeps is economically feasible, the actual economic returns and the actual costs of development may differ significantly from the assumptions and estimates used in the preliminary scoping studies completed to date, as well as in the feasibility studies completed following further exploration. This could have a negative impact on AngloGold Ashanti's return on its investment in the Obuasi Deeps and, as a result, AngloGold Ashanti's long-term profitability following the business combination.

Benefits from integration of Ashanti's operations with AngloGold may not be achieved to the extent or within the time period that is currently anticipated, and AngloGold Ashanti may encounter costs and difficulties in integrating the Ashanti operations, which would reduce or delay the realisation of increased revenues, cost savings and operational benefits.

Following the business combination, AngloGold Ashanti is in the process of integrating the Ashanti operations with AngloGold's operations in order to increase revenues and earnings, and achieve cost savings through enhanced growth opportunities and synergies. AngloGold Ashanti may fail to reach the anticipated levels of production and cost saving that it expects, or achieve these at a higher capital cost than anticipated. In addition, the need to deal with integration issues could also divert management's attention from day-to-day business.

Foreign exchange fluctuations could have a material impact on AngloGold Ashanti's operating results and financial position.

Since June 2002, the weakening of the dollar against the South African rand, and, to a lesser extent, the Brazilian real, the Argentinean peso and the Australian dollar has negatively impacted AngloGold Ashanti's profitability. Conversely, in certain prior years, the devaluation of these local currencies against the dollar has had a significant positive effect on the profitability of its operations. Typically, revenues are derived in dollars and production costs are largely incurred in the relevant local currency. In 2004 and 2003, AngloGold Ashanti derived approximately 67% and 76%, respectively, of its revenues from these countries and approximately 67% and 79%, respectively, of production costs in these local currencies. In 2004, the weakening of the dollar against these local currencies accounted for nearly \$28 per ounce, or 52% of the increase in total cash costs compared with an increase in 2003 of \$68 per ounce. In addition, production costs in South African rand, Brazilian real, Argentinean peso and Australian dollar were only modestly offset by the effect of exchange rate movements on the price of imports denominated in dollars, as imported products comprise a small proportion of production costs in each of these countries.

AngloGold Ashanti's product, gold, is principally a dollar-priced commodity and most of its revenues are realised in or linked to dollars. The weakening of the dollar, without a corresponding increase in the dollar price of gold against these local currencies results in lower revenues and higher production costs in dollar terms. Conversely, the strengthening of the dollar, without a corresponding decrease in the dollar price of gold, against these local currencies yields significantly higher revenues and lower production costs in dollar terms. If material, these exchange rate movements may have an adverse impact on AngloGold Ashanti's operating results. For example, due to the strengthening of the South African rand against the dollar, production costs at AngloGold Ashanti's South

African operations increased in dollar terms during both 2003 and 2004. These impacts have been partially offset by the increase in the dollar price of gold, which increase has been partially a function of dollar weakness.

To a lesser extent, mainly as a result of its hedging instruments, a small proportion of AngloGold Ashanti's revenues are denominated in South African rand and Australian dollar, which may partially offset the effect of the dollar's strength or weakness on AngloGold Ashanti's profitability. In addition, due to its global operations and local foreign exchange regulations, some of AngloGold Ashanti's funds are held in local currencies, such as the South African rand and Australian dollar. The dollar value of these currencies may be affected by exchange rate fluctuations. If material, exchange rate movements may affect AngloGold Ashanti's overall financial position.

Inflation may have a negative impact on AngloGold Ashanti's results of operations.

Most of AngloGold Ashanti's operations are located in countries that have, during periods in the past, experienced high rates of inflation. However, because it is unable to control the market price at which it sells the gold it produces (except to the extent that it enters into forward sales and other derivative contracts), it is possible that significantly higher future inflation in the countries in which AngloGold Ashanti operates may result in a consequent increase in future operational costs in local currencies, without a concurrent devaluation of the local currency of operations against the dollar or an increase in the dollar price of gold. This could have a material adverse effect upon its results of operations and financial condition.

While none of AngloGold Ashanti's specific operations are currently materially adversely affected by inflation, significantly higher and sustained inflation in the future, with a consequent increase in operational costs, could result in operations being discontinued or reduced or rationalised at higher cost mines.

AngloGold Ashanti faces certain risks in dealing with HIV/AIDS which may have an adverse effect on its operations.

AIDS remains the major health care challenge faced by AngloGold Ashanti's South African operations. Accurate prevalence data for AIDS is not available. The South African workforce prevalence studies indicate this may be as high as 30%, while at the operations in Ghana, available data suggests a prevalence rate of 3.7%. AngloGold Ashanti is continuing to develop and implement various programmes aimed at helping those who have been infected with HIV and preventing new infections. On 14 November 2002,

AngloGold Ashanti announced that it had begun implementing a monitored pilot anti-retroviral therapy programme for volunteer employees in South Africa who are infected with HIV. The pilot programme involved offering a triple combination drug regimen, known as a drug cocktail, to 200 Wellness Clinic patients that met the medical eligibility criteria for starting treatment. From April 2003, it commenced a roll-out of the treatment to all eligible employees desiring it.

At this stage, the total cost of providing rigorous outcome-focused disease management of employees with AIDS, including the provision of an anti-retroviral drug cocktail, is an average \$213 per employee on treatment per month.

It is not yet possible to develop an accurate cost estimate of the programme in its entirety, given uncertainties such as drug prices and the ultimate rate of employee participation. AngloGold Ashanti does not expect the cost that it will incur related to the prevention of HIV infection and the treatment of AIDS to materially and adversely affect its operations and profitability.

Some of AngloGold Ashanti's power supplies are not always reliable and have on occasion forced AngloGold Ashanti to halt or curtail activities at its mines. Power fluctuations and power cost increases may have a negative impact on AngloGold Ashanti's profitability.

Substantial portions of AngloGold Ashanti's mining operations in Ghana are dependent for their electricity supply on hydro-electric power supplied by the Volta River Authority (VRA), an entity controlled by the government of Ghana, although AngloGold Ashanti also has access to VRA electricity supply from a recently constructed smaller thermal plant. The VRA's principal electricity generating facility is the Akosombo Dam and during periods of below average water inflows from the Volta reservoir, electricity supplies from the Akosombo Dam may be curtailed, as occurred in 1998. In addition, this electricity supply has been subject to voltage fluctuations, which can damage AngloGold Ashanti's equipment. Other than short-term stand-by generators, which are not sufficient to allow AngloGold Ashanti to continue mining operations, AngloGold Ashanti has no means of obtaining alternative power in the event of a supply shortage from the VRA. The VRA also obtains power from neighbouring Cote d'Ivoire, which has recently experienced some political instability and civil unrest.

These factors may cause interruptions in AngloGold Ashanti's power supply or result in increases in the cost of power even if they do not interrupt supply. AngloGold Ashanti's original agreement with the VRA expired in May 2003 and negotiations with the VRA have been concluded resulting in an increase of 11% in the applicable tariff upon renewal of that agreement.

AngloGold Ashanti's mining operations in Guinea, Tanzania and Mali are dependent on power supplied by outside contractors and supplies of fuel being delivered by road. AngloGold Ashanti's power supply has been disrupted in the past and AngloGold Ashanti has suffered resulting production losses as a result of equipment failure.

Risks related to AngloGold Ashanti's ordinary shares

Sales of large numbers of AngloGold Ashanti's ordinary shares or the perception that sales may occur, could adversely affect the prevailing market price of such securities.

The market price of AngloGold Ashanti's ordinary shares or AngloGold Ashanti ADSs could fall if large amounts of AngloGold Ashanti ordinary shares or AngloGold Ashanti ADSs are sold in the public market, or there is the perception in the marketplace that such sales could occur. Holders of AngloGold Ashanti ordinary shares or AngloGold Ashanti ADSs may decide to sell them at any time. Sales of ordinary shares or ADSs, if substantial, or the perception that these sales may occur and may be substantial,

could exert downward pressure on the prevailing market prices for the AngloGold Ashanti ordinary shares or AngloGold Ashanti ADSs, causing their market prices to decline.

Fluctuations in the exchange rate of different currencies may reduce the market value of AngloGold Ashanti's securities, as well as the market value of any dividends or distributions paid by AngloGold Ashanti.

AngloGold Ashanti has historically declared all dividends in South African rand. As a result, exchange rate movements may have affected and, may continue to affect, respectively, the Australian dollar, the British pound, the Ghanaian cedi and the dollar value of these dividends,

as well as of any other distributions paid by the relevant depository to investors that hold AngloGold Ashanti's securities. This may reduce the value of these securities to investors. At the general meeting of AngloGold Ashanti's shareholders held on 5 December 2002, a majority of its shareholders passed a special resolution adopting a new Memorandum and Articles of Association, which, among other things, allows for dividends and distributions to be declared in any currency at the discretion of AngloGold Ashanti's board, or its shareholders at a general meeting. If, and to the extent AngloGold Ashanti declares dividends and distributions in dollars, exchange rate movements will not affect the dollar value of any dividends or distributions. Nevertheless, the Australian dollar, British pound and Ghanaian cedi value of any dividend or distribution will continue to be affected and the South African rand value of any dividend or distribution will also be affected. If and to the extent dividends and distributions are declared in South African rand, exchange rate movements will continue to affect the Australian dollar, British pound, Ghanaian cedi and dollar value of these dividends and the Australian dollar, British pound, Ghanaian cedi and dollar market value of AngloGold Ashanti's

securities will continue to fluctuate with exchange rate movements.

(www.ashantigold.com).

4.0 ANALYSIS, MAIN FINDINGS AND DISCUSSIONS

4.1 DESCRIPTIVE STATISTICS

Data from the financial statement of AngloGold Ashanti for eight (8) years (1998 to 2005) was used for the analysis.

The average total assets of AngloGold Ashanti stood at \$2.710 billion for the period. The average equity (\$803.6 million) was more than the average debt (\$620.0 million) for the period. The company recorded negative profits (before and after tax) for the period under review. The average GDP growth rate, a measure of the economic development of Ghana, was estimated at 4.7%.

As per Tabular representation/Analysis, please note that Tobin Q is representative of GDP Growth Rate, Leverage and a dummy for merger of AGC and AngloGold in 2003 which had a positive impact on PAT and EPS in 2004 and 2005 financial periods.

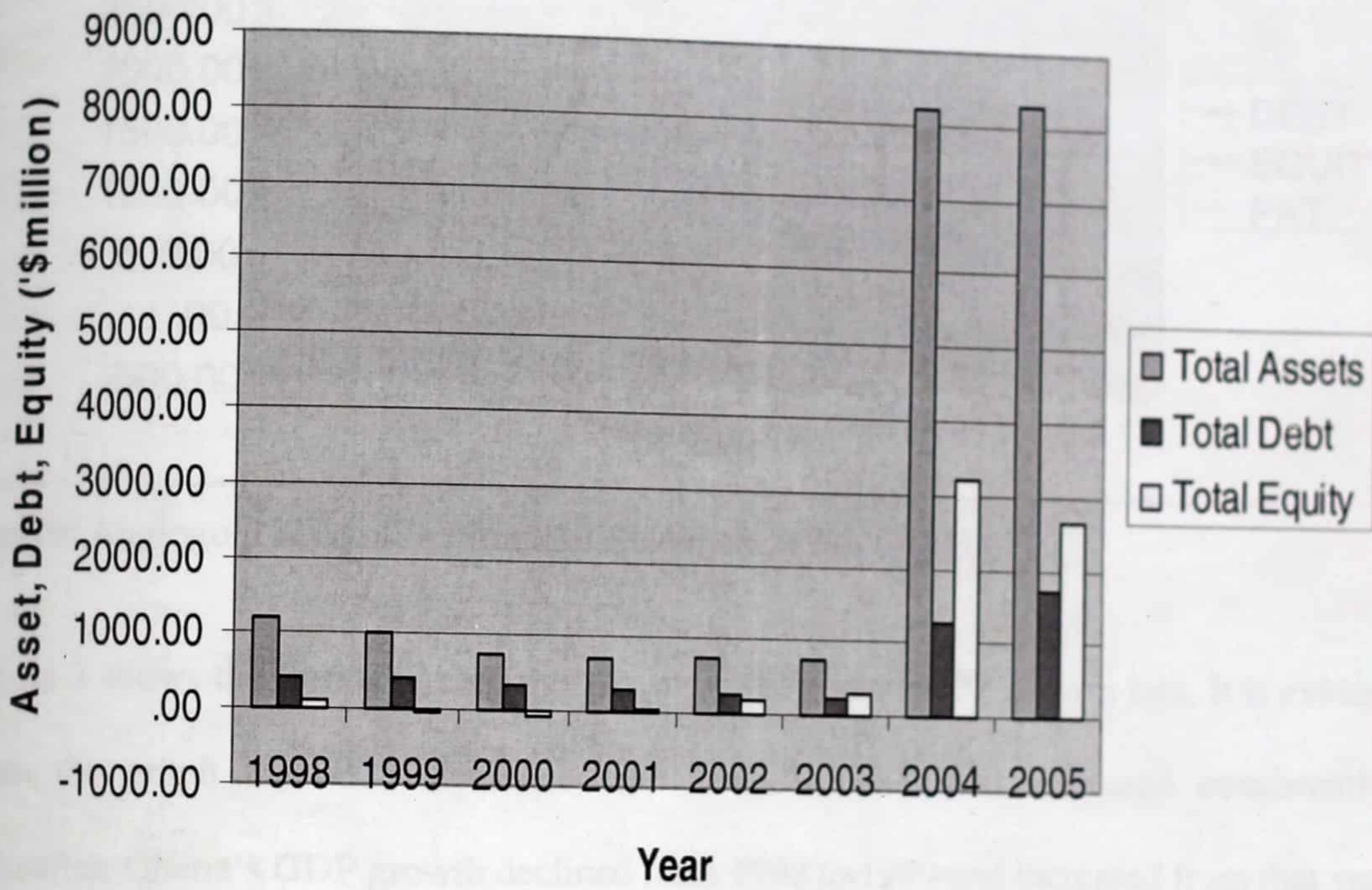
Table 4.1: Tabular Representation- Descriptive Statistics

YEARS	LEVERAGE (Ratio)	PAT (\$)million	EPS Cents	GDP Growth (%)
1998	0.34	40.70	0.37	4.70
1999	0.42	-183.90	-1.64	4.50
2000	0.47	-141.10	-1.25	3.70
2001	0.42	59.90	0.53	4.00
2002	0.34	56.20	0.47	4.50
2003	0.29	49.20	0.38	5.00
2004	0.25	127.00	43	5.70
2005	0.28	-160.00	-69	5.80

Source: Constructed from Annual financial statements of AngloGold Ashanti (1998-2005).
¹ GDP Growth Rate data were obtained from annual reports of Ghana Statistical Service.

This section looks at the trend in the growth of key parameters of AngloGold Ashanti. Figure 1 depicts total assets of the company as against total debt and equity used to finance these assets. The company's assets declined from 1998 to 2003 and rose steeply from below \$1.0 billion to a little over \$8.0 billion in 2004 and 2005. It is worth noting that Ashanti Gold and Anglo Gold merged in 2004 and that might have led to the sharp rise in company assets.

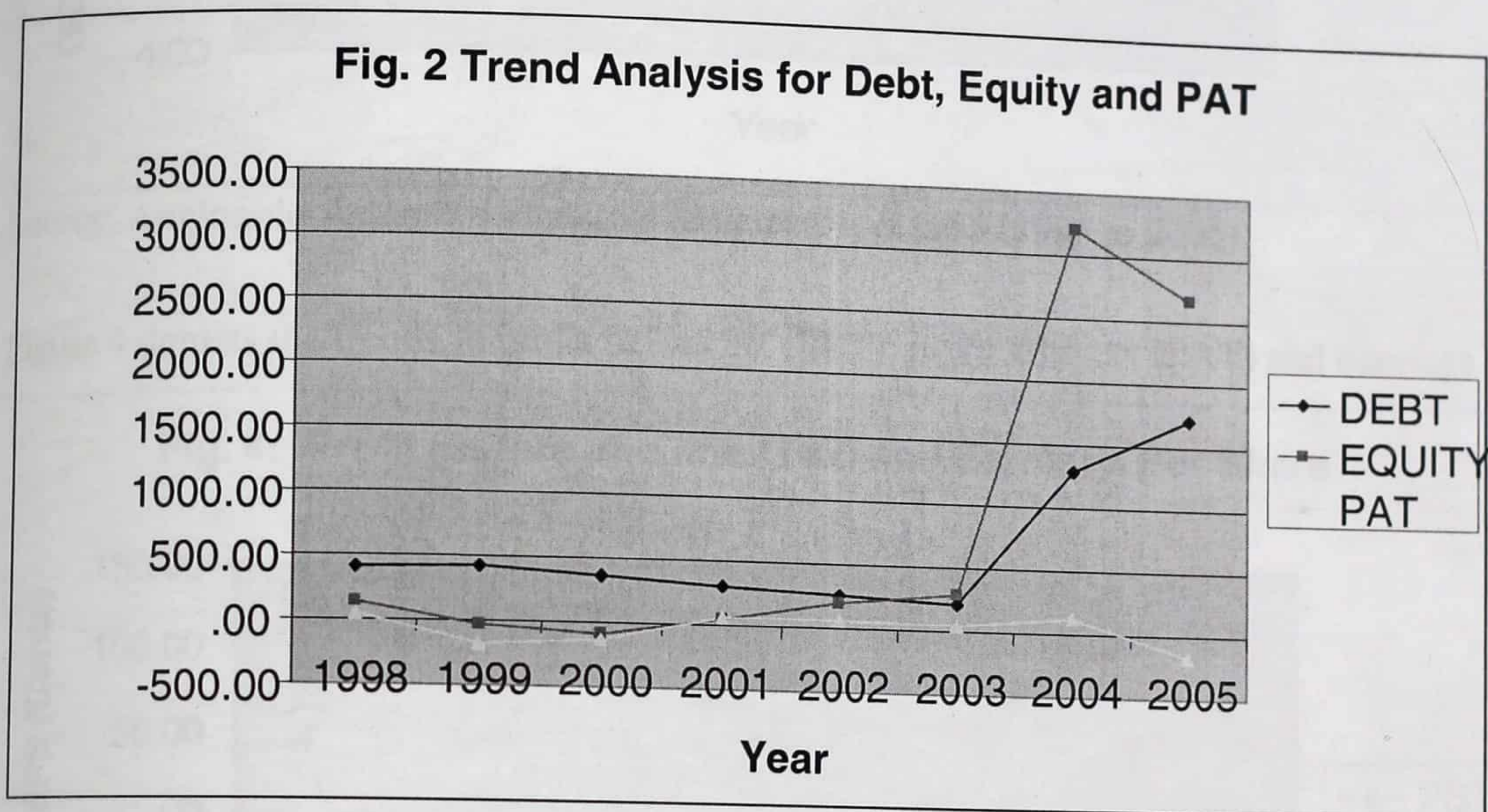
Fig. 1: AngloGold's Total Assets, Total Debt and Total Equity



Source: AngloGold Ashanti's Financial Statement, 1998 to 2005.

It is noted from the figure that total debt and equity of the company also increased after the merger.

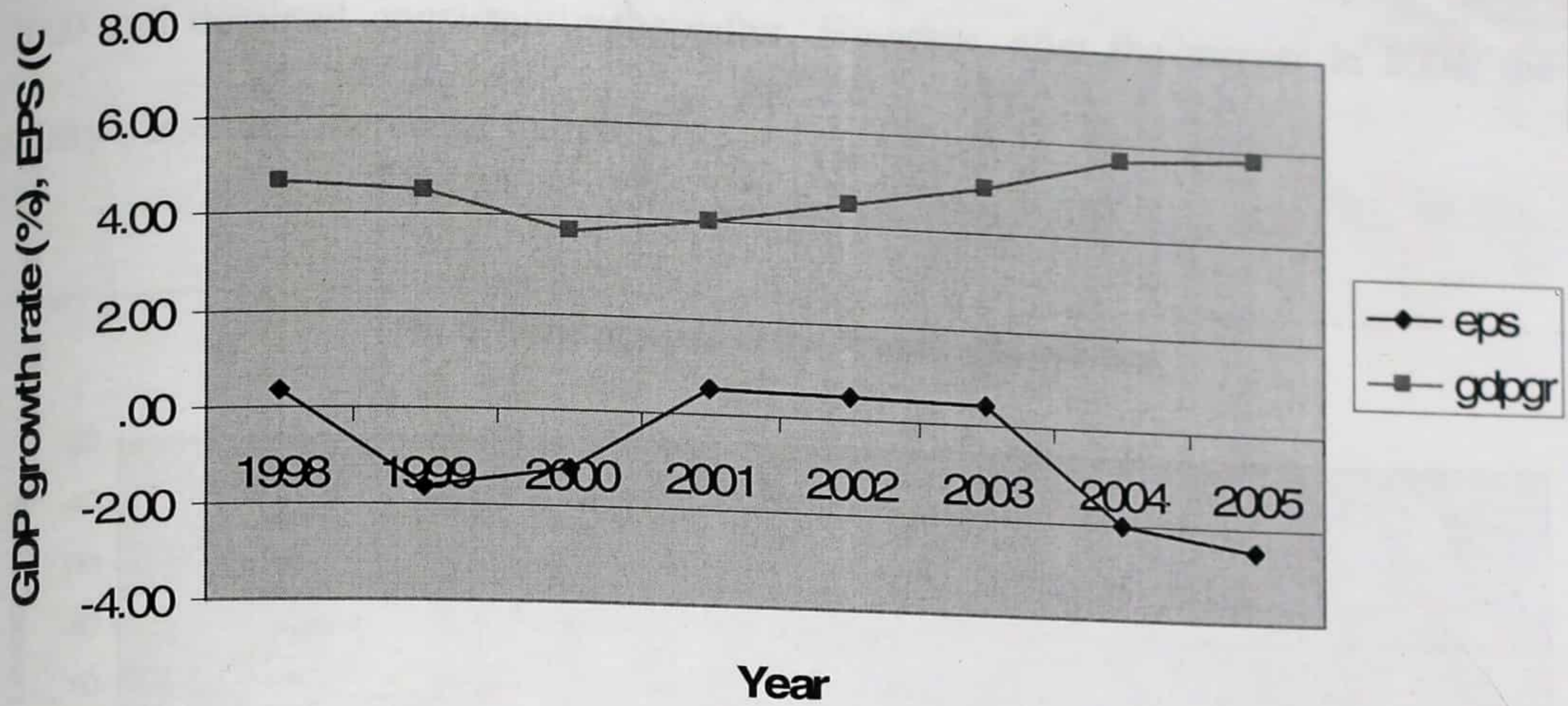
Figure 2 below depicts the trends in debt and equity as against profit after tax (PAT). It is evident from the figure that Debt, equity and profit after tax declined consistently from 1998 to 2003 after which debt and equity rose in 2004 and dropped in 2005. Equity however continued to increase from 2004 to 2005 but at a declining rate. The decline in equity from 2004 to 2005 was associated with a similar decline in profit after tax for the same period; with profit after tax reaching the negative zone. This suggests a positive relationship between equity and profit after tax.



Source: AngloGold Ashanti's Financial Statement, 1998 to 2005.

Figure 3 shows the trends in earnings per share (EPS) and GDP growth rate. It is evident from the graph that EPS declined from 1998 to 2000 and increased consistently, thereafter. Ghana's GDP growth declined from 1998 to 1999 and increased from that year to 2001 after which the growth rate stagnated until 2003. The country's economic development declined from 2003 to 2005. There appear to be no apparent relationship between earnings per share and GDP growth rate, since EPS continued to increase in the face of a decline in GDP growth rate from 2003 to 2005.

Fig. 3: Trend analysis for GDP growth rate and EPS



Source: AngloGold Ashanti's Financial Statements, & GSS (1998 to 2005).

Figure 4 depicts the trends in profit before tax (PBT), profit after tax (PAT) and earnings

Fig. 4: Profit (before and after Tax) and Earnings Per Share

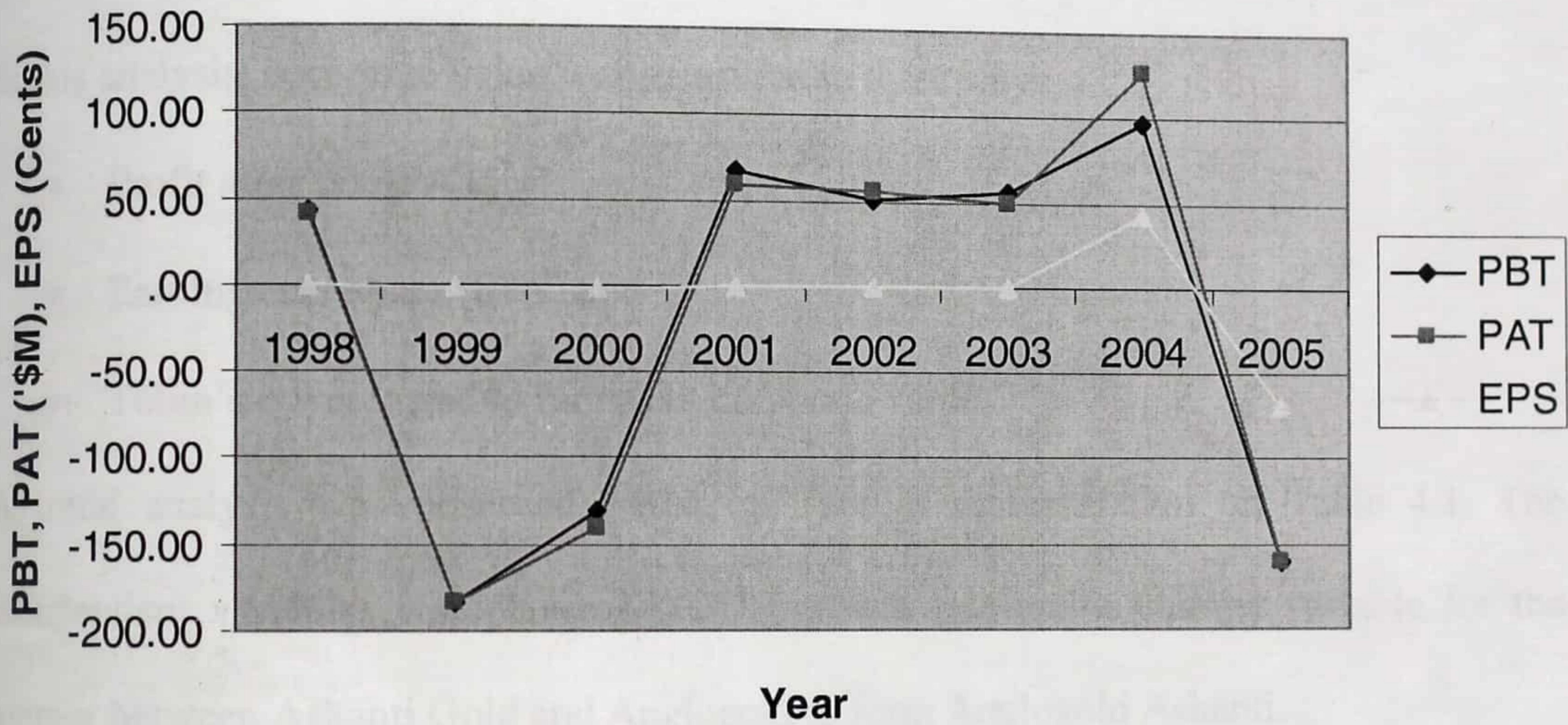
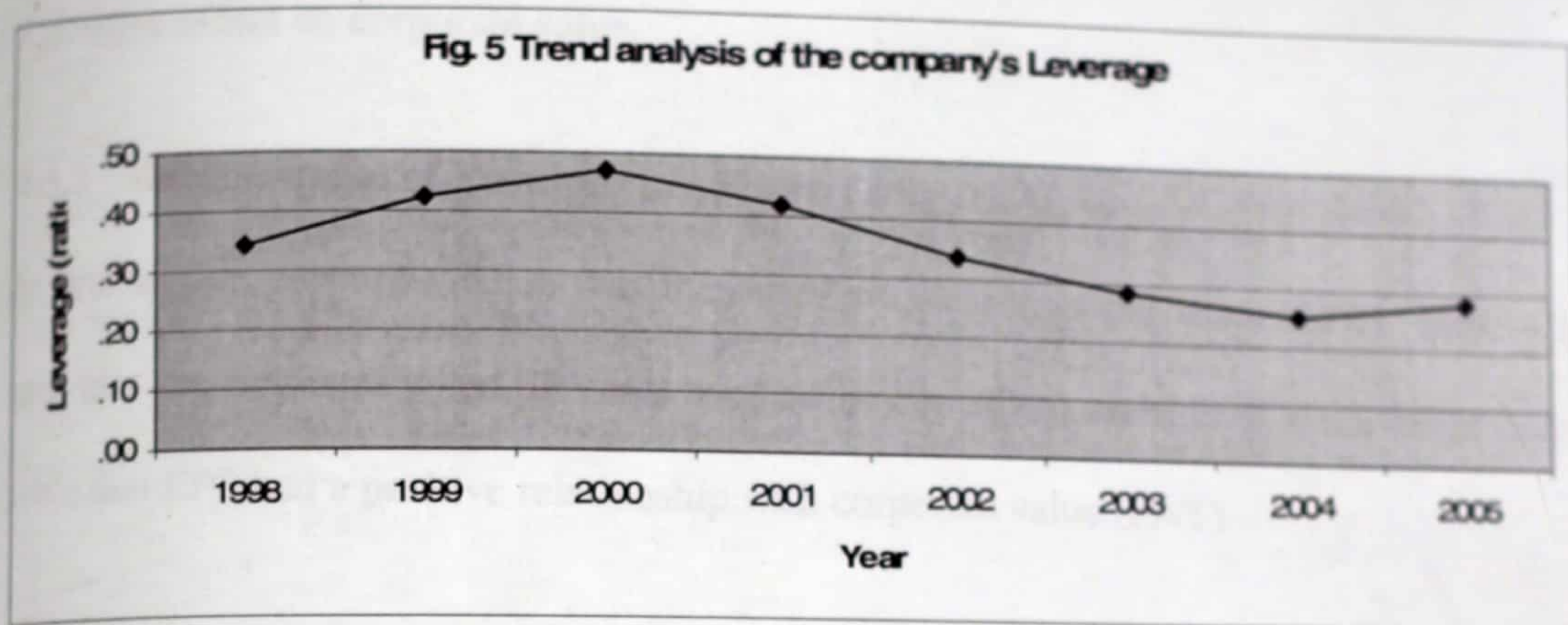


Figure 5 depicts the trend in AngloGold's leverage from 1998 to 2005. It is evident from the graph that the total debt as a percentage of total assets (leverage) increased from 1998 to 2000 and declined consistently thereafter. However, after the merger in 2004, the company's leverage increased marginally.

Fig. 5 Trend analysis of the company's Leverage



Source: Researcher's construct from AngloGold Ashanti's Financial Statements.

4.3 DETERMINANTS OF CORPORATE VALUE

In this analysis, corporate value was measured in three ways.

- Profit after tax (PAT),
- Earnings per share (EPS) and
- Tobin's q were used to represent corporate value.

A trend analysis was observed based on Tabular representation on Table 4.1. The independent variables were leverage, GDP growth rate and a dummy variable for the merger between Ashanti Gold and AngloGold to form AngloGold Ashanti.

4.3.1 Determinants of Profit After Tax

A Trend Analysis was observed to determine the effect of leverage, GDP growth rate and the merger on AngloGold's corporate value. In this analysis, corporate value was

measured as profit after tax (PAT) and this was used as the dependent variable in the model. It was evident from the table that leverage and GDP growth rate had a significant linear relationship with corporate value as measured by profit after tax. Each of the two variables influences profit after tax negatively. The implication is that an increase in leverage and/or GDP growth will result in a reduction in corporate value. The merger had a positive effect on corporate value.

4.3.2 Determinants of Earnings per Share(EPS)

In this section corporate value was measured with earnings per share (EPS). Table 4.1 provides the estimates when EPS was used as the dependent variable. It was evident from table that EPS had a positive relationship with corporate value (PAT).

In this representation too, leverage and GDP growth had negative relationship with corporate value where as merger had a positive relationship.

4.3.3 Determinants of corporate value as measured by Tobin's q

Tobin's q was used as a measure of corporate value and thus the dependent variable in this model.

All the three independent variables were found to have a negative effect on corporate value. This means that increases in leverage and GDP growth would cause a decrease in Anglogold Ashanti's corporate value.

It must be emphasized however that other factors may also influence corporate value significantly. Some of these factors may include managerial ability, ownership structure of the company, investment activities by the company and some exogenous factors such as labor unrest and political instability.

CHAPTER FIVE

5.0 SUMMARY, RECOMMENDATIONS AND CONCLUSION.

This chapter summarizes the information obtained from the study. It also draws conclusions about the study in the light of the findings, and makes appropriate recommendations.

5.1 SUMMARY

The major findings of the study include:

- Irrespective of the tabular representation of the model used, leverage has a negative effect on corporate value. This finding holds true no matter which of the three measures of profitability/corporate value is used.
- Ghana's economic development as measured by GDP growth has a negative effect on the corporate value of AngloGold Ashanti regardless of the definition of corporate value.
- The effect of the merger on Anglogold Ashanti's corporate value was mixed depending on the definition of corporate value used in the analysis. When profit after tax (PAT) and Tobin's q were used as measures of corporate value, merger had no significant effect on corporate value. However, when earnings per share was used as the measure of corporate value, merger was found have a strong positive relationship with corporate value (PAT).

5.2 Recommendations

Based on the data analysis and the findings above, the following recommendations were made:

- Since AngloGold Ashanti operates in many countries, the effect of economic development on its corporate value cannot be adequately assessed by using the GDP growth of only Ghana. It is therefore recommended that further research be done to investigate the effect of economic development on corporate value by using an average GDP growth for the various countries where the company operates.
- It is recommended that further research in the area of corporate finance be done in the third world to reveal how leverage, economic development, ownership structure and related issues impact on corporate value. Such research outputs will serve as management tools to corporate managers in the developing world in their bid to increase company profitability and shareholders' wealth.

5.3 CONCLUSION

In conclusion, it is significant to note that debt which acts as a lever can greatly magnify gains or losses. Hence financial leverage increases the potential reward to shareholders, but also increases the potential for financial distress and business failure. It is therefore eminent that the right balance of equity to debt is maintained so as to enable an

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