**SECTION 2
CORPORATE GOVERNANCE
AND BOARD ISSUES**

**РАЗДЕЛ 2
КОРПОРАТИВНОЕ
УПРАВЛЕНИЕ
И СОВЕТ ДИРЕКТОРОВ**

DETERMINANTS OF DIVIDEND PAY-OUT POLICY: A CASE OF THE SOUTH AFRICAN GOLD MINING INDUSTRY

Busisiwe Carol Ringane*, Patricia Lindelwa Makoni**

Abstract

This paper sought to shed light on dividend policy within the gold mining industry in South Africa. Several cause-and-effect variables of dividend policy are discussed, in order to lay down the theoretical framework for the research. These are size, managerial ownership and foreign ownership. To meet the objectives of the study, data from seven mining companies listed on the Johannesburg Stock Exchange (JSE) was analysed for a 5 year (2008-2012) period. As found in earlier studies, there is a positive correlation ($r = 0.59$) between the dividend policy and the size of the organisation. This was expected as no cashflow is available for distribution during the early stages of exploration, hence no dividends are paid. As the organisation grows and profit increases, there is free cashflow which can be distributed to shareholders. Managerial ownership negatively correlates with dividend pay-out ($r = -0.53$). Contrary, a weak correlation was observed between foreign ownership and dividend pay-out.

Keywords: Dividend Policy, Dividend Pay-Out, Ownership, Mining, South Africa

* Data Administrator at Rockwell Diamonds in South Africa
Email: busrings@gmail.com
Tel: +27843661868
** Department of Finance, Risk Management and Banking at the University of South Africa (UNISA)
Address: P.O. Box 392, UNISARAND, 0003, South Africa.
Email: makonpl@unisa.ac.za or patricia.makoni@gmail.com.
Tel: +27767538234

1. Introduction

The mining industry plays a major role in most of the developing countries' economies as a vital source of revenue (Hopwood, Ives & Beier, 2013). During the 2008 economic crisis, countries which heavily relied on mineral exports suffered a major economic blow due to slowing down of the trade. A shrinkage in the global demand, coupled with a decrease in prices of most commodities, led to a loss in revenues. Mines across the region suffered

scaling down of production and investment; this resulted in social sectors facing budget cuts. This led to massive unemployment in the sector as companies were forced to adjust to the crisis for their own survival (Matshediso, 2005).

Though the global economy is recovering, the mining sector still faces a few challenges. With constant rising production costs, political uncertainty, nationalisation of resources, strikes, and unstable commodity prices; mining companies are forced to find creative ways to increase their

revenue and to stay afloat. Moreover, there is a need to further invest in new projects developments, in order to increase the life of the resource and also pay back loans (Chunyan, 2012). Companies have the option to use either internal or external sources to finance their investments. The internal sources include retained earnings, while external sources refer to new borrowings or issuing of shares. The internal source is a dividend payment choice; a company has to find a balance between the option to re-invest or pay out dividends (Arnold, 2005; Brigham & Daves, 2010).

Hashemijoo, Ardekani and Younesi (2012:111), define a dividend policy as a company policy which determines the amount of dividend payments and the amounts of retained earnings for reinvesting in new projects. There are various factors that a company has to consider when developing its dividend policy, and depends on the country and the industry. This study looks at the determinants of the dividend policy within the South African gold mining industry, with a specific focus on the size and ownership structure of a company.

Holder, Langrehr and Hexter (1998) argued that the size of a mining company does influence its dividend policy. The reasons cited included the fact that larger-sized companies tend to have easier access to capital markets. As a result, there is a lesser dependence on the revenue generated. Consequently, larger companies can afford to pay higher dividends. Contrary to this, for small companies where there is a need of capital for investments and infrastructure; the amount of dividend will be lower. Further evidence or lack of, will be provided through examining the dividends paid based on the size of the company.

The dividend payment may be controlled through the ownership structure, in the context of agency theory. The agency theory arises when there is a conflict of interest between shareholders and managers (Jensen, 1986). The conflict of interest arises when the managers pursue their own interests, deviating from the main objective of maximising shareholders' wealth. The agency problem is closely related to the ownership structure of the company, as it can be reduced by paying dividends to shareholders, thus reducing cash available to managers (Jensen, 1986). However, this is subject to the proportion of ownership that belongs to the managers. This study will examine how the ownership structure affects the dividend policy employed. Does the dividend policy employed by the company change in relation to the proportion of ownership? Moreover, further inference will be made regarding the relationship between ownership structures and company size and dividends to be paid to investors.

Based on the literature surveyed, it was identified that determinants of dividend policy vary across industries. Furthermore, the impact on the dividend policy does change within each industry. However, the focus of most studies and research conducted has been in the developed world and Asia. There is a lack of case studies from Africa, with specific focus on the mining industry. Hence, this study will use the available literature to identify the possible determinants of the dividend policy adopted by mining companies in South Africa. Also, the identified determinants will be analysed and evaluated to determine how they affect the dividend policy adopted in the South African gold mining companies. The study is therefore significant as it contributes knowledge to the limited available literature on the determinants of dividend policy pay-out in the gold mining sector, specifically in the South African context.

2. Literature Review

The dividend policy employed by companies varies depending on the industry, geographical location and size of the company. Lintner (1956) determined that variables influencing the dividend policy employed by companies include earning stability, expenditure, availability of external finance, company size and ownership. La Porta, Lopez-de-Silances, Shleiffer and Vinshy (2000) highlighted the important fact that dividend policy varies per country. Companies with poor shareholder protection and low corporate governance will generally pay low dividends. This was validated by Mitton (2005) who showed that in emerging markets, companies with strong corporate governance pay a higher dividend. These studies all support the notion that there are various factors that affect the dividend policy employed.

Although the literature on dividend policy is voluminous, the scientific community is still yet to completely understand the factors that influence dividend policy and how they interact. Miller and Modigliani (1961, henceforth M&M) who proposed the irrelevance theory, which suggested that the wealth of the shareholders is not affected by dividend policy, laid the ground framework. Theoretically, in a perfect market where there are no taxes; capital gains and dividends are taxed at an equal rate; and all stakeholders have access to the same information; investors will be indifferent to the source of their return. Moreover, the payment of cash dividends has no impact on the share price.

The M&M (1961) theory is based on the assumption of a perfect market; however, this is inconsistent with reality. There are factors that make the economic market bias towards certain investor or shareholders. These include transaction costs associated with dividend payment and the differential income taxes. Other issues such as information asymmetries and agency problems do render dividend policy employed to be very

relevant to all stakeholders (Arnold, 2005). This is because not only do managers consider the impact of the changes on the pay-out decisions, but also that markets react strongly to dividend changes. Hence, information asymmetry and signalling have been proposed as explanations for the importance and relevance of dividend policy (Bhattacharya, 1979). However, the signalling hypothesis has been losing ground as recent research shows that dividend changes are not very good predictors of future earnings (De Angelo, De Angelo & Skinner, 2000).

Another prominent theory was laid by Black (1976) called the "dividend puzzle". He argued that companies should distribute little or no dividends to shareholders once pay-out taxes are introduced. The theory relied on M&M's (1961) theory and states that higher dividend pay-outs lead to lower retained earnings and capital gains, while lower dividend pay-outs lead to higher retained earnings (De Angelo & De Angelo 2006; Black, 1976; La Porta et al, 2000).

Subsequently, studies post-M&M's (1961) theory challenge the dividend irrelevance hypothesis and the dividend puzzle theory. The M&M theory was strongly refuted by De Angelo and De Angelo (2006) who argued that dividend policy affects investor wealth; hence their retention. They argued that the dividend policy is driven by the need of the company to distribute the free cashflow. De Angelo and De Angelo's (2006) suggested theory was in light of the earlier work done by Fama and French (2001), who concluded that, the dividend payment is related to the life-cycle of the company. They postulated that in the early years, company investment opportunities generally outweigh their ability to pay dividends, and therefore as a result they will withhold dividends. In later years, it is expected that the internal funds exceed investment opportunities, and as a result, the company will use excess funds to pay dividends. The current and expected future earnings and the pattern or continuity of past dividends drives determinants of a company dividends policy. Hence, the available cashflow has a greater impact.

A number of theories were identified to theoretically explain the factors surrounding dividend theory in the mining industry specifically.

Agency Problem

The agency problem is defined by Gitman and Zutter (2011:17) as *"the likelihood that managers may place personal goal ahead of corporate goals"*. It applies to companies where ownership and control are separated. The agency problem arises when managers' and shareholders' interests are not in line with each other. In such instances, the managers pursue their own interests, taking decisions that may not be in the best interest of

shareholders (Arnold, 2005). One way to minimise this practice, is to use market forces such as shareholders who can require an increase in dividend paid, in order to reduce available cashflow thus ensuring that managers are more disciplined (Rozeff, 1982). However, the agency problem is complex as it is linked to the ownership structure of the company. Majority ownership can be in the hands of managers, foreigners, and institution. Depending on the major shareholders, the dividend policy employed will therefore differ (Shleifer & Vishny, 1986).

Jensen (1986), who argued that agency costs arise as the free cashflow increases, formulated the agency theory. Free cashflow (FCF) is defined as excess cash, not needed for positive net present value (NPV) investments. The available free cashflow may lead management to undertake sub-optimal investment projects or use the money for personal benefits including mergers and acquisitions if they expect to gain from the growth of the company or benefiting with excessive salaries (Jensen, 1986). To reduce free cashflows available to managers, Jensen (1986) suggests that it is better to return the excess cash to shareholders (in the form of dividends paid out). Contrary to M&M's (1961) theory, the agency theory identifies that the paying of dividend does influence the amount of free cashflow and resultantly, the investment policy.

Foreign Ownership

The attractiveness of a country to harness foreign investments is not only dependent on its rich natural resources or its resource potential. The country's administrative procedures and Government regulations also have an impact on the number and quality of foreign investors. Security of tenure is vital to the level of foreign mining investment (Vivida, 2010). This includes the ability to pay and/ or repatriate dividends. Rozeff (1982) indicated that companies with a large number of external shareholders have to make high dividend pay-outs in order to reduce the agency problem. Hence, the payment of dividend acts as a substitute for legal protection (La Porta, Lopez-de-Silances, Shleiffer & Vinshy, 2010). This is because foreign investors are not always readily available to directly monitor the managers, despite having made foreign direct investments (FDI) which in some cases are available the 10% threshold, implying the need for active managerial participation. Consequently, the foreign investors will enforce higher dividends in order to reduce free cashflow available to opportunistic managers thus controlling their behaviour (Gitman & Zutter, 2011).

Managerial Ownership

When a higher percentage of corporate ownership is in the hands of the management (referred to as insider owners), the dividend policy employed changes. In such instances, managers prefer not to pay dividends (Shabiri *et al*, 2012). This is consistent with Rozeff's (1982) model which suggests that high insider holding acts as a substitute for dividends as an agency costs reducing benefit. Instead of paying dividends, managers will prefer to increase personal benefits such as director's fees, salary packages and bonuses.

Afza and Mirza (2010) investigated the impact of ownership on an emerging market in Pakistan. Their study was based on three-year data (2005-2007) of 100 companies listed on the Karachi Stock Exchange. They determined that the manager's ownership has a negative correlation to dividend pay-out. They suggested that as managerial ownership increases, managers might impose low dividend policies in order to increase the cashflow available at their discretion through distortion in some operational decisions. On the other hand, for lower levels of managerial ownership, management tends to align its interests with those of external shareholders, resulting in higher dividend pay-outs.

However, since perfect markets are only theoretical, the taxation system of the country does affect the type of dividend paid. Pakistan charges double taxation on dividends and zero tax on capital gains. Thus, investors will prefer capital gains over dividend payments. In South Africa, dividends are taxed for all investors, except those in the low-income bracket of the economy. In addition, a third of dividends are exempted from tax, and the remainder is taxed at the investors' marginal tax rate (Firer, Gilbert, & Maytham, 2008).

Size and growth of organization

Shabibi and Ramesh (2011) argued that there is a positive relationship between company size and the amount of dividend paid. This is because larger companies have easy access to the capital market; reduce their dependency to fund investment projects based on internal sources of finance, allowing them to pay higher dividends. The size effect is also confirmed by an earlier study by Holder *et al.* (1998) who found that there is a tendency of larger firms to having higher pay-out ratios than smaller firms.

Higgins (1981) showed that there is a positive correlation between the capital required for investment dividend and growth of a company. In his paper, he indicated slow-growing companies are cash-rich, while rapidly-growing ones are cash-poor, as more funds are required for capital investment. His findings were supported by Denis and Osobov (2008), who conducted an empirical study across six countries. Their study highlighted that dividends are affected by size, profitability and growth opportunities, further supporting evidence that profitable and larger companies are more likely to pay dividends. However, no conclusion was reached regarding the relationship between investments opportunities and dividend payments.

Fama and French (2001) used companies listed on the NYSE, AMEX and NASDAQ to postulate that there was a decline in the percentage of companies paying dividends. They argued that the increase in the newly-listed small companies with high capital investment required contributed to the decrease in dividend payments. This holds true for mining companies in that the period between discoveries to production in the mining sector can take 5-10 years (Chunyan, 2012). However, the early stages of most mining projects are of a high cost, as the company is attempting to determine the geological parameters of the ore body that includes grade, extent and the economic potential of the resource. During that time, the initial cashflow is negative. Most mining companies produce a total investment that exceeds the original budget. Hence, there is no available free cashflow to distribute to shareholders (Chunyan, 2012). In the life-cycle model, an optimum dividend policy is achieved when there the sum of the flotation costs, retention and other costs results in a positive number. Cashflow does evolve over a company life-stage. In the early stages, companies have ample growth projects and relatively less ability to generate sufficient funds internally, so they avoid dividend pay-outs. In their mature phase, companies pay cash dividends since they generate sufficient internal funds and the investment opportunities decreases (Grullon, Michaely, & Swaminathan, 2002).

The literature revealed that dividend policy employed by an organisation differs based on geographical location, industry and size and ownership structure of the organisation. Based on the cities literature, ownership structure has been identified to be an important role in minimizing the agency problem. The presence of the foreign ownership has been theoretically identified as having a positive correlation with the dividend payment. However, a negative correlation is observed between managerial ownership and dividend payment. The size of the company was also identified as another determinant of dividend policy. These theoretical findings will now be examined empirically to establish if they hold true in the case of the gold mining sector in South Africa.

3. Methodology

The general aim of this research was to analyse and assess the impact of the identified factors within the mining industry in South Africa and the choice of

dividend policy. The specific theoretical objectives were:

1. To determine the relationship of the size of the company and the type of dividend policy employed.
2. To investigate the association between various ownership structure and dividend pay-out policies.

The researchers adopted a dominantly quantitative survey design with a focus on correlational analysis, which was used to achieve the research objectives and to test the following research hypotheses:

Hypothesis 1

H_0: There is a significant relationship between size and the dividend pay-out in the mining industry.

H_1: There is no significant relationship between size and the dividend pay-out in the mining industry.

Hypothesis 2

H_0: There is a significant relationship between foreign ownership and the dividend pay-out in the mining industry.

H_1: There is no significant relationship between foreign ownership and the dividend pay-out in the mining industry.

Hypothesis 3

H_0: There is a significant relationship between managerial ownership and the dividend pay-out in the mining industry.

H_1: There is no significant relationship between managerial ownership and the dividend pay-out in the mining industry.

Using the set hypotheses, the statistical relationship between the ownership structure, size and the dividend policy was tested. Based on the literature review, the null hypothesis was expected to be accepted.

In order to determine whether there is a relationship between the dividend pay-out ratio and selected factors, a regression analysis was conducted. The analysis was related to the correlation coefficient but it also includes additional factors. The linear regression equation used in the test is:

$$DP_{i,t+1} = \beta_0 + +\beta_1 Size_{i,t} + \beta_3 MAN_{i,t} + +\beta_4 FOR_{i,t} + \varepsilon$$

Where:

$DP_{i,t}$ = Dividend payout ratio for company i at time t+1

$Size_{i,t}$ = Size for company i at time t

$MAN_{i,t}$ = Managerial ownership for company i at time t

$FOR_{i,t}$ = Foreign ownership for company i at time t

ε = Error

4. Data and Variables

The target population in the study was all gold mining companies with operations within South Africa, listed on the Johannesburg Stock Exchange (JSE). As of April 2013, there were eight gold-producing mining companies listed on the JSE. Of these, one company, Franco Nevada, is a royalty-based company; hence, it was excluded from the study, reducing the number of surveyed firms to only seven. A list of the seven companies studied is shown in Table 1 below.

Table 1. JSE-Listed Gold-Mining Companies Surveyed

Company Name	Status	JSE Code
Harmony Gold (HG)	Producer	HG
Gold Fields (GF)	Producer	GF
Wits Gold (WG)	Explorer	WG
Anglo Gold (AG)	Producer	AG
DRD Gold (DRDG)	Producer	DRDG
Central Rand Gold (CRG)	Producer	CRG
Pan African Resource (PAR)	Producer	PAR

To determine the dividend payment, data was drawn from all dividend announcements made by companies listed using mainly the JSE analysis reports, and from the individual company websites. The size of the company, and the ownership structure data used was obtained from their respective annual reports for the entire 5-year period under review. In order to achieve the set objectives, the dividend policy (dependent variable) was tested based on the independent variables; the size of the company and the ownership structure. Each variable and how it was measure and applied is defined below:

Period to be tested: In deciding the length of the period to be tested, it was necessary that the gold-producing companies have to have been in operation over a continuous period of five years, i.e. between 2008 and 2012. This decision was based on the fact that most gold companies have been in operation for decades and continue to have enough reserves to carry them through for a longer period to come.

Dividend Payment (dependent variable): Dividend pay-out is used as a proxy for dividend policy by most financial researchers (Afza & Mirza, 2010). Dividend pay-out is calculated as total cash

dividend paid divided by the company earnings after tax. This is measured by the dividend distributed at time *t*, and the number of outstanding earnings. The dividend payment was requested and provided by I – NET Bridge database.

Exchange rates - all exchange rates were sourced from the I – NET Bridge database. These were used to convert all prices used in the analysis to a common currency to enable the comparison of different data to each other to ensure an apple-to-apple comparison.

Size of a company (independent variable): Several measures can be used to test firm size such as turnover, market capitalization, number of employees', logarithm of sales and total assets. The natural logarithm of assets was selected as the most appropriate measurement of the company size. Data was sourced from online annual reports published by the companies.

Ownership structure (independent variable): Based on the literature reviewed, ownership structure has a major role in the manner in which a company distributes its dividend. According to observations by La Porta *et al.* (2000), the controlling shareholders can effectively influence the decisions of the company. The study focuses specifically on the impact of foreign ownership and managerial ownership. Foreign ownership (FOR) refers to the percentage of ownership by non-South Africans out of the total capital share; whereas, managerial ownership (MAN) refers to the percentage of ownership by managers, directors and their families.

Hence, to determine the significance of the hypotheses, a Pearson product moment correlation and a regression model were used. A summary of the variables and equation is as shown below:

DIV = f (SIZE, MAN, FOR)

For this study, the following delimitations were considered:

o In years when two or more dividend payments were made, an average was taken. The weighting variation year on year was ignored.

o There are major changes in reserves, assets and (to a lesser extent) production levels for the period tested. The available resource may affect the production level; hence the profit and amount of free cashflow available. However, due to time constraints this was ignored in the study.

o Factors including skill of management, industrial actions and changes in the business strategy were ignored.

o The firm choice of the debt policy was ignored.

5. Results and Analysis

This section deals with the findings of the empirical analysis for the hypotheses proposed earlier. The main theme of this research was to determine the factors that affect dividend policy within the gold mining sector in South Africa. Two major determinants were investigated, namely, the impact of size of the company and the ownership structure on the dividend policy employed. The descriptive statistics for the sample over the 2008 – 2012 period for gold companies in South Africa will be given, with each variable explained separately. A brief discussion will follow focusing on the findings of size and ownership structure on dividend pay-out policy.

5.1 Descriptive statistics

The determinants of dividend policy identified are discussed below.

Organisation size

Two factors were considered to determine the size of the operation, i.e. the total assets and the number of years the company has been in operation. To determine the total assets, a logarithm of the data was applied to the yearly assets. For all the mining companies, the total assets increase progressively as company grows. Summary with the yearly total assets is shown below in Table 2.

Table 2. The Logarithm of Total Assets

| Mining Company	2008	2009	2010	2011	2012
HG	6,67	6,69	6,71	6,77	6,72
GF	6,89	6,94	7,03	7,02	7,04
WG	7,45	7,45	7,38	7,84	7,83
AG	6,91	6,99	6,98	7,03	7,09
DRDG	8,49	8,46	8,53	8,52	8,51
CRD	7,99	7,88	7,75		
PAR	7,57	7,63	7,74	7,82	7,91

DRD Gold Mine, based on the data, has the highest value of assets, whereas Harmony Gold has the least. Hence, DRD Gold was considered as being the largest gold mining company in our study. The company that had a slight change in its total assets was Wits Gold, where there was a slight increase in the years 2011 and 2012 as the company acquired additional assets (through the acquisition

of Merrispruit South and SOFS Goldfields). However, the coefficient of variation (CoV) of 3% was still regarded as statistically low, and acceptable as shown in Figure 1 below.

Figure 1. The total assets for the various gold mining companies
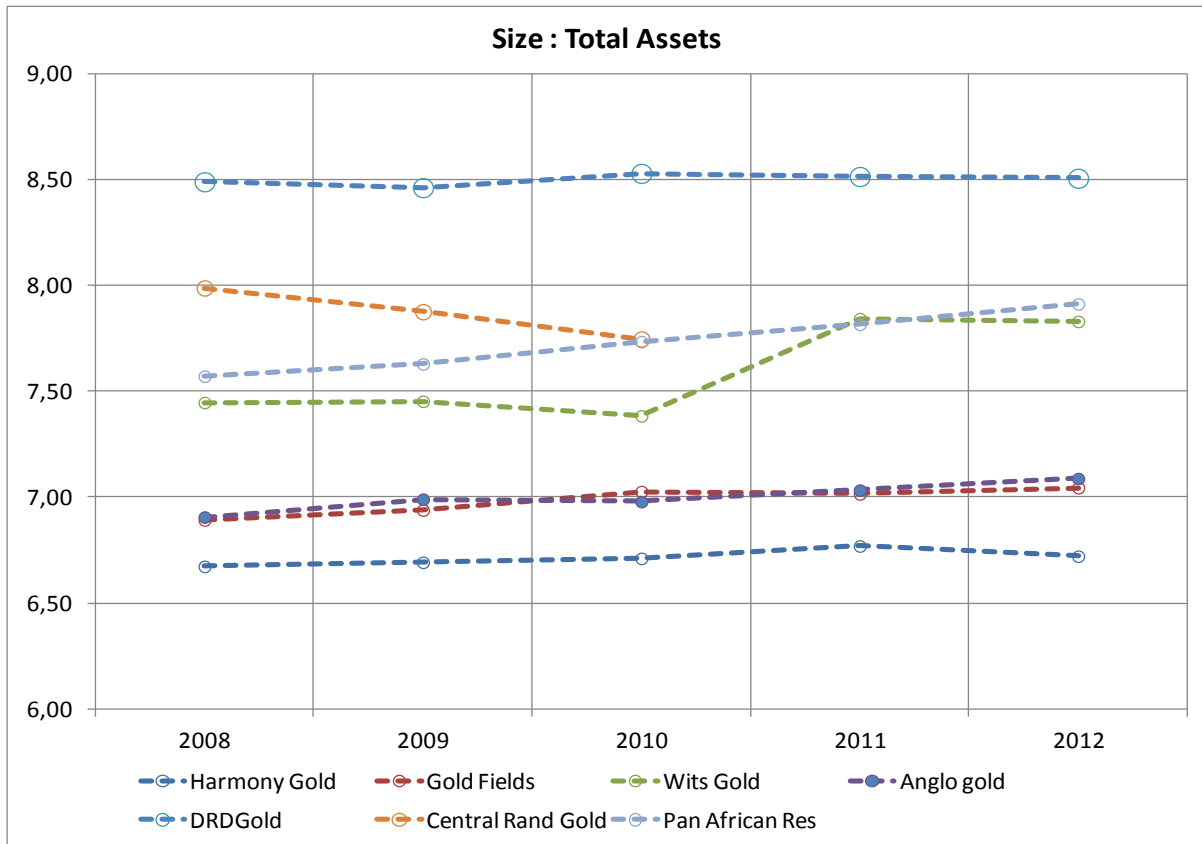
We must highlight that Central Rand Gold (CRD) Ltd operated until 2010, and then in 2011 – 2012 the company received a Section 155 according to the MRPDA, the law that governs the mining sector in South Africa, preventing it from further operating. In addition, the company was marred with issues that have resulted in its number of total assets reducing over time.

Table 3. Descriptive Statistics for Company Size

	HG	GF	WG	AG	DRD G	CRD	PAR
Min	6,67	6,89	7,38	6,91	8,46	7,75	7,57
Max	6,77	7,04	7,84	7,09	8,53	7,99	7,91
Mean	6,71	6,98	7,59	7,00	8,50	7,87	7,73
Std Dev	0,04	0,07	0,23	0,07	0,03	0,12	0,14
CoV	0,01	0,01	0,03	0,01	0,00	0,02	0,02
Size	large	large	small	large	small	small	Small

Ownership structure

A summary of the ownership structure of the mining companies, broken down into management ownership and foreign ownership is shown in Table 4. The ownership structure of the mining companies indicate that Wits Gold has more than 10% of their ownership in the hands of directors, with the remaining companies having less than 3% of control in the hands of managers and directors. Though there is a significant percentage of ownership in the hands of managers, there is still in a high percentage share of the company in the hands of non-South Africans. However, it is to be noted that there is little variability in the ownership percentage per company.

Table 4. Breakdown of ownership

	2008		2009		2010		2011		2012	
	FOR	MAN	FOR	MAN	FOR	MAN	FOR	MAN	FOR	MAN
HG	61,00	0,02	57,80	0,02	55,50	0.02	58,00	0,02	62,00	0,02
GF	54,21	0,02	58,41	0,02	58,41	1,88	59,73	2,02	58,61	2,10
WG	60,00	15,80	59,00	15,50	48,43	15,78	41,00	12,77	57,00	12,95
AG	29,50	0,87	43,28	3,91	60,62	0,05	55,00	0,05	51,66	0,06
DRDG	60,80	<1	64,50	<1	66,50	<1	65,00	<1	54,18	0,15
CRD	62,60	2,60	62,29	2,600	60,00	0,44				
PAR	53,37	0.00	53,37	0.00	53,37	0,02	44,00	37,43	44,00	1,20

The descriptive statistics on ownership are shown in Table 5. There is less variability in the managerial ownership when compared to the foreign ownership. However, the CoV for foreign ownership is less than that of managerial ownership. Despite the fact that the South African Government still requires that at least 26% of ownership be in the hands of previously disadvantage people, there is still a higher percentage of foreign ownership (more than 48%).

Table 5. Ownership structure descriptive statistics

		HG	GF	WG	AG	DRDG	CRG	PAR
FOR	Min	55,50	54,21	41,00	29,50	54,18	60,00	44,00
	Max	62,00	59,73	60,00	60,62	66,50	62,60	53,37
	Mean	58,86	57,87	53,09	48,01	62,20	61,63	49,62
	Std Dev	2,63	2,12	8,15	12,11	4,95	1,42	5,13
	CoV	0,04	0,04	0,15	0,25	0,08	0,02	0,10
MAN	Min	0,02	0,02	12,77	0,05	0,15	0,44	0,00
	Max	0,02	2,10	15,80	3,91	1,00	2,60	3,12
	Mean	0,02	1,21	14,56	0,99	0,66	1,88	0,87
	Std Dev	0,00	1,09	1,56	1,67	0,47	1,25	1,36
	CoV	0,00	0,90	0,11	1,69	0,71	0,66	1,57

Dividend Payment yield

The data on dividend payment was provided by I-Net Bridge. Wits Gold and Central Rand Gold did not pay any dividend to shareholders during the period under review, whereas Harmony and Pan African Resource did not pay dividends only in the year 2008. For the companies that paid, dividends year on year comparison: Harmony Gold had the lowest dividend paid. However, its yield has been increasing annually, indicating that there was an increase in the percentage each shareholder received for each dollar invested. This was expected as Harmony Gold is a relatively younger company and is still in the process of establishing itself. Despite the global economic meltdown in 2008, Anglo Gold had the highest dividend yield in that year. This could indicate a signaling effect, a topic that was not covered in this study. In addition, Anglo Gold's, similar to Pan African Resource, dividend yield varies significantly year on year. Contrary, DRD Gold's dividend yield has been relatively stable, though increasing for the past five years. On the other hand, Gold Fields' dividend was stable the first four years, and experienced a sharp increase in 2012. A summary of the yearly dividend payout is shown in Table 6 below.

Table 6. Dividend yield for 2008 – 2012

	HG	PAR	DRDG	GF	WG	CRG	AG
2008	0,00	0,00	0,96	1,97	0,00	0,00	2,70
2009	0,27	4,55	1,27	1,34	0,00	0,00	1,18
2010	0,66	1,72	1,39	1,22	0,00	0,00	0,30
2011	0,57	3,54	1,53	1,26	0,00	0,00	1,40
2012	1,19	2,14	1,53	3,18	0,00	0,00	2,18
Avg	0,54	2,39	1,34	1,79	0,00	0,00	1,55

There is greater variability in the dividend payment by Pan African Resource as highlighted in Figure 2 and Table 7**.** In addition, contrary to other producers that generally have an increase in the dividend yield, Pan African Resources' dividend payment fluctuates annually. Anglo Gold also had a slight decrease in the dividend payment in 2010. A similar trend was observed in the total assets, where there was a slight decrease in the assets. The slight decrease in the total assets is a result of the selling-off of one of the operations in South Africa, Tau Lekoa Mine, and the suspending of some operations in Ghana (Annual Financial statement 2010, Anglo Gold).
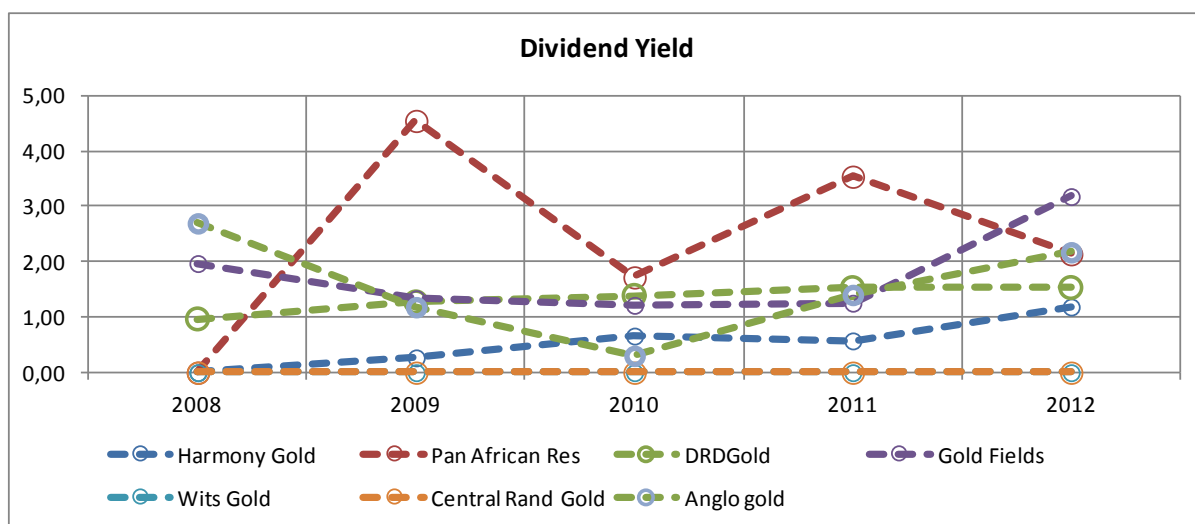
Figure 2. Dividend Yield Plot

Table 7. Descriptive Statistics for dividend yield

	HG	PAR	DRDG	GF	WG	CRD	AG
Min	0,00	0,00	0,96	1,22	0,00	0,00	0,30
Max	1,19	4,55	1,53	3,18	0,00	0,00	2,70
Mean	0,54	2,39	1,34	1,79	0,00	0,00	1,55
Std Dev	0,45	1,75	0,23	0,84	0,00	0,00	0,92
CoV	0,83	0,73	0,18	0,47	0,00	0,00	0,60

Data Analysis

Ошибка! Источник ссылки не найден. Table 8 summarizes Pearson correlation coefficients of the result of dividend, size and ownership classes as reported earlier. As expected, there is a positively and statistically significant correlation (corr = 0.59) between dividend and size of the organisation. These associations are consistent with prior studies, such as Fama and French (2001) on the effect of size on the likelihood of dividend payments.

Table 8. Correlation Coefficient

|	*MAN*	*FOR*	*Size*	*Div*
MAN	1			
FOR	-0,30	1		
Size	0,47	-0,20	1	
Div	-0,53	0,23	0,59	1

(At 95% confidence level)

The significant positive relationship between dividend payment and size of the organization is truly reflective of the fact that the period between discoveries to production in most mining companies can take up to between 5 and 10 years, prior to having a positive free cashflow (FCF). Any revenue generated using either

equity or debt, and in rare cases revenue generated from production, is being spent in the exploration phase (Chuyan, 2012). In those early stages, there are is no FCF to distribute to investors as shown in

However, other variables held constant, as the organization grows in size, and the operations reach the production phase, there is a decrease in finance dedicated to exploration. There is also an increase in the cashflow; hence the dividend pay-out is expected to increase. Moreover, as the organisation grows in size, it can obtain external financing because of its high asset value and better growth perspectives; therefore, funds become available for dividend payments (Afza & Mirzan 2010).

Figure 3. Cashflow for mining companies from discovery to production (Chuyan, 2012)
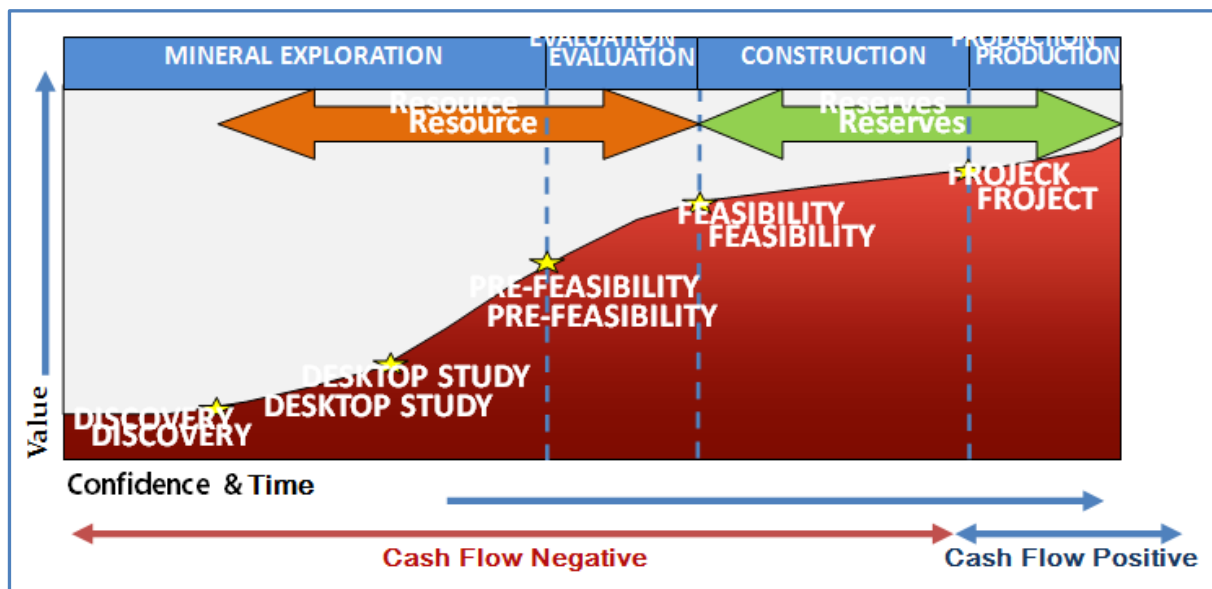
This further correlates with the observed data. For example, Wits Gold and Central Rand Gold, the younger operations with a few assets have not paid any dividends in the period 2008 - 2012, as the money generated was being ploughed back into exploration. Although DRD and Pan African Resource are small operations, the focus was mostly processing previously explored mines and dumps thus reducing the cost of exploration.

There is a weak negative correlation between the dividend payment and foreign ownership (corr = 0.23), indicating the possibility of this variable having predictive power on dividends and the positive relationship as theorized by the literature. The value for ownership implies that gold mining companies do not use dividends as a mechanism to reduce the agency costs between managers and shareholders.

Further, the relationship between dividend policy and managerial ownership shows a weak negative correlation (corr = -0.53) to the dividend policy, contrary to the results from studies by Afza (2010). However, it was as proposed by Rozeff (1982) that managerial ownership (regarded as insider holding) has a negative correlation to the dividend pay-out. This is also related to the agency conflict. This is due to the fact that when managers are majority shareholders, they prefer not to declare more dividends, preferring instead to increase personal benefits such as director's fees, salary packages and

bonuses rather than pay dividends. According to the agency theory, managerial ownership can be used to control the interest between managers and shareholders (Jensen and Meckling, 1976). However, if a larger percentage of ownership is in the hands of managers, there will be less influence from outsiders. Since the purpose of managerial ownership is the same as dividend policy, which is to reduce agency costs, it will be ineffective to use two tools at the same time for the same problem.

Findings

There is a positive relationship between the size of the organization and the dividend payment. This was expected based on the life cycle of the organization. As the company moves from exploration to production, there is an increase in the free cashflow; that money can then be distributed to the shareholders. It was also anticipated that there would be a negative relationship between the managerial ownership and dividend payment as management might prefer to use the funds for personal gain rather than paying the shareholders. The poor relationship between ownership and dividends is contrary to the findings in Shleifer and Vishny (1986). The authors argued that large share ownership provides the incentives for controlling shareholders to use their influence to maximize the value of the organization by reducing resources consumed in low

return projects, thus implying that more cashflows can be distributed as dividends. However, this was not found to be the case in the gold mining sector in South Africa. The unexpected sign for managerial ownership implies that the gold mining sector in South Africa does not use dividends as a mechanism to reduce the agency costs between managers and shareholders

The results also proved the insignificant relationship between foreign ownership and dividend pay-out. This implies that based on the available data, the variable is not vital in explaining dividends within the gold mining sector in South Africa; hence dividend decisions in these gold mining companies are not influenced by managerial and foreign ownership. Nevertheless, previous researchers have also found the insignificant value of these two variables in determining dividend distribution.

6. Conclusions

This study examined the effect of size and ownership structure on the dividend policy employed by gold mining companies listed on the JSE in South Africa. The objective of this study was to find the potential determinants of dividend policy within the industry. Three determinants were analysed: size of the organisation, managerial ownership and foreign ownership using the Pearson correlation coefficient.

Based on the three hypotheses set at the beginning of the study, the following conclusions were made:

1. There is a strong correlation between the size and the dividend payment. Hence, a larger organisation is more likely to pay dividend as compared to the smaller organisation. Thus supporting the first null hypothesis H_0, stating that there is a significant relationship between size and the dividend pay-out in the mining industry.

2. Based on the data available, the relationship between the dividend payment and foreign ownership is inconclusive. Hence, there is insufficient information to accept the second stated null hypothesis H_0 that there is a significant relationship between foreign ownership and the dividend pay-out in the mining industry.

3. A moderately weak, negative correlation between the managerial ownership and dividend payment exists. As manager ownership increases, fewer dividends are paid out. Hence, these are alternative techniques that companies apply to minimize the agency problem. Therefore this study supports the third null hypothesis H_0 which states that there is a significant relationship between managerial ownership and the dividend pay-out in the mining industry.

Future research could consider the effect of corporate governance as one of the most important elements in formulation and/ or implementation of corporate policies and strategies in the present

circumstances. Further studies could examine other forms of ownership such as the impact of institutional ownership and the impact of the largest shareholders on the dividend policy. The literature has highlighted that the presence of a largest shareholder has an impact on the dividend pay-out. Pay-out ratio may increase or decreases by the presence of shareholders with large voting powers. The application of type of institutional ownership and largest shareholder on the dividend policy employed within the gold mining sector should be assessed. In addition, the impact of some macroeconomic factors such as taxation on the dividend policy employed by organisations also offers ample scope for further research. Tax liability may cause reduction in dividend paid and discourage firms from paying high dividends as shareholders can choose to prefer stock dividends to avoid the tax burden of a cash dividend. This study was based on a sample size of only seven gold mining companies listed on the JSE in South Africa, over a five-year period. Future research could increase the sample size of the study and even be extended to other countries, as well as increase the timespan to encapsulate fluctuations in the global and local markets.

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