

Share Price As Dependent Of Basic EPS Or DPS – A South African Perspective

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ABSTRACT

Investors consider both earnings and dividend information when analysing the performance of an entity (Koppeschaar Koppeschaar, Sturdy, Du Toit, Deysel, Rossouw, Van Wyk, Gaie-Booyesen, Papageorgiou, Smith & Van der Merwe, 2015). The objective of the study was to determine whether the share price performance of the top 40 JSE listed companies depend more on BEPS or DPS. The study focused on the top 40 JSE listed firms as sample, while data were collected for the period 2012 to 2016. Information was gathered on EPS, DPS and share prices with aid of the INET BFA database. Collected data were analysed through application of SPSS, by measuring Pearson correlation coefficients and performing paired t-tests.

Study limitations included that the sample size was limited to 40 observations, that a limited analytic period was used (2012-2016) and that the study relied on the accuracy of information provided by the INET BFA. Generalisation of research findings is therefore limited. Despite limitations, the study made a worthy contribution by indicating that investors of the top 40 JSE listed firms should rather rely on earnings measures (BEPS) than return measures (DPS) when making investment decisions, because it was statistically proven that BEPS delivers higher Pearson correlation coefficients than DPS when correlations modelling is performed for the selected analytic period.

Keywords: Basic Earnings Per Share; Dividends Per Share; Share Price Behaviour And Investment Decisions

INTRODUCTION

The market value of a share is one of the most prominent factors that affect the creation of shareholders value (Sharma, 2011). Volatility of share prices often depend on the expectations of buyers and sellers in a market (Menaje, 2012). In order to avoid share price instability, firms predominantly focus on the entity's earnings per share figures and the dividends distributed to shareholders (Erasmus, 2010).

Earnings Per Share

Earnings per share (EPS) can be defined as the profit that is attributable to each ordinary share of an entity (Koppeschaar et al., 2015). The International Accounting Standard 33 (IAS 33) identifies two important earnings per share categories:

Basic Earnings Per Share ('BEPS'): The objective of BEPS information is to provide a performance measure of the interest that each ordinary share represents in an entity (IFRS, 2015). Koppeschaar et al. (2015) explained that calculating EPS entails that basic earnings is divided by the weighted average number of shares. According to IFRS (2016), basic earnings consist of profit or loss attributable to the entity, less any preference dividends paid. The weighted average number of shares is represented by the number of ordinary shares adjusted for capitalisation issues, bonus issues and rights issues (IFRS, 2016). BEPS is the simplest form of EPS.

Diluted earnings per share ('DEPS'): The objective of DEPS is to provide a performance measure of the interest of each ordinary share, should all potential dilutive ordinary shares realise (IFRS, 2016). As a result, profit and loss attributable to ordinary share is affected by the after-tax amount of dividends and interest in respect of dilutive potential ordinary shares (IFRS, 2016). The weighted average number of ordinary shares outstanding is increased by additional ordinary shares that would arise if potential instruments are converted into ordinary shares (IFRS, 2016).

Figure 1 represents the relation between BEPS and DEPS

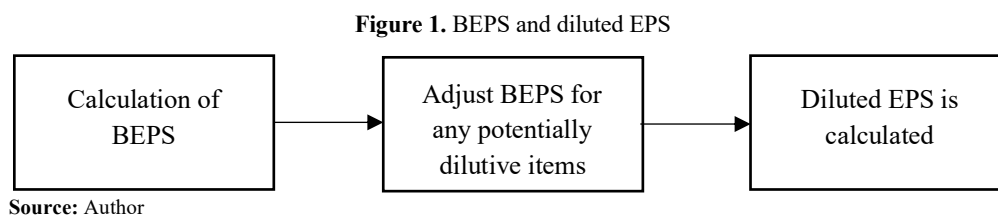


Figure 1 demonstrates that BEPS must be adjusted with dilutive accounting items in order to arrive at DEPS.

In addition to BEPS and DEPS, there exists another category of EPS – headline EPS (‘HEPS’). The disclosure of HEPS is a JSE listing requirement (Koppeschaar et al., 2015). The starting point for the calculation of HEPS is also BEPS (Koppeschaar et al., 2015). The BEPS figure is adjusted for all re-measurement amounts and therefore HEPS excludes all re-measurement values (Koppeschaar et al., 2015). Such re-measurement amounts refer to the following types of accounting items (IFRS, 2016): goodwill impairment; gain on bargain purchase; gain or losses on deemed disposals; post tax gain on impairments; changes in deferred tax balances; impairment loss reversal; gain or losses on disposal of properties; compensation from third parties for property, plant and equipment; gain or losses on sale and leasebacks; translations of investments in foreign operations; gain or losses on control in subsidiaries; gain or losses on control in associates; gain or losses on disposal of intangible assets; fair value adjustments; reclassification of equity instruments to profit and loss and distributions of non-cash assets to owners.

Figure 2 demonstrates the relation between BEPS and HEPS.

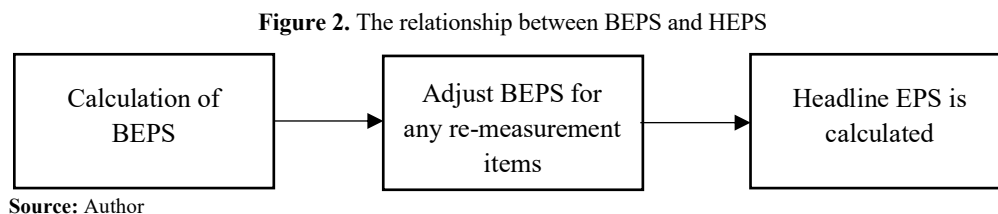


Figure 2 illustrates that HEPS is arrived at when BEPS is adjusted with re-measurement items.

It is apparent that BEPS is the starting point for the calculation of other EPS categories. In a study performed by Robbetze (2015), it was found that BEPS is better able to associate with share price behaviour than other EPS categories. This finding is in line with the argument raised that BEPS remains the most significant form of EPS, since it serves as the foundation for calculating other EPS categories.

Hereafter, dividend payments are studied.

Dividend Payments

A dividend is the portion of the company profits, after taxes, which is distributed to the shareholders for their investment and risk bearing in the company (Sharma, 2011). According to Moles, Parrino and Kidwell (2011), a dividend is anything valuable that is distributed to a firm’s shareholders on a pro-rata basis – that is, in proportion to the percentage of the interest that is held in the firm. There are four types of dividends:

Cash Dividends: Regular cash dividends represent cash that firms pay to shareholders on a semi-annual or quarterly basis (Moles et al., 2011).

Extra Dividends: According to Moles et al. (2011), extra dividends are paid when the firm is able to distribute additional cash to its shareholders, often within the same timeframe as cash dividends.

Special Dividends: Moles et al. (2011) defines special dividends as once-off payments that are used to allocate large amounts of cash to investors.

Liquidating dividends: A liquidating dividend is the final dividend that is distributed when a firm discontinues business (Moles et al., 2011).

The dividend rate of a company has a significant influence on the market price of a share (Sharma, 2011). The amount of dividends paid to the shareholders depends upon the dividend policy pursued by a company. A company's dividend policy is a strategy that regulates how excess value in the firm is allocated to investors (Moles et al., 2011). Each company will have its own dividend policy which, is set upon the following factors (Moles et al., 2011):

- The future profitability of the firm;
- The future investing needs of the firm;
- The available financial reserves and flexibility thereof;
- The ability to raise capital if necessary; and
- The ability to finance dividends by selling equity instruments.

According to Correia, Flynn, Uliana and Wormald (2015), investors utilise many information sources when evaluating a company, one of which is annual financial statements. Although financial statements are well known to be valuable sources of information, they do have limitations, some of which include (Correia et al., 2015):

- It is historical in nature;
- Figures can be manipulated by means of accounting policies;
- There may be a lack of timeliness of statements, or calendar periods are accounted for rather than business cycles.

As a result of the limitations listed previously, analysts turn to the dividend as a signal of the economic well-being of a company. The dividend is seen as an indication of management's confidence in the sustainable earning potential of the company (Correia et al., 2015). From the preceding argument, it is then submitted that financial information has certain limitations and that dividends, as a separately studied variable, can potentially indicate growth potential of entities. In the paragraph hereafter, previous studies, that have attempted to determine the usefulness of earnings and dividend information in associating with share prices, is summarised.

Previous Studies

A number of previous studies have been performed on the topic of EPS versus dividends. Some of the most cited studies include those of Sharma (2011) Menaje (2012), Menike and Prabath (2014), Sulaiman and Migiro (2015) and Iqbal, Ahmed, Zaidi and Raza (2015). For the purpose of an overview, the latter studies are summarised in Table 1.

Table 1. Summary of previous international studies

Researcher(s)	Year	Location	Research findings
Sharma	2011	India	The study attempted to quantify a financial variable that could predict changes in share price. Financial variables of the study included book value per share (BVPS), EPS and dividends per share (DPS). The study concluded EPS and DPS has a strong impact on share price.
Menaje	2012	Philippines	Menaje (2012) proved that share price is significantly influenced by EPS, while return on assets (ROA) is a negative predictor of share price, which should be replaced by more effective financial economic variables.
Menike and Prabath	2014	Srilanka	The relationship between accounting variables EPS, DPS, BVPS and share price were tested. Statistical results indicated that DPS was the best predictor of share price behaviour on the Colombo Stock Exchange.
Sulaiman and Migiro	2015	Nigeria	The study investigated the impact of EPS, DPS and company size on the share price behaviour of Nigerian entities. The researchers found that DPS could best correlate with share price behaviour.
Iqbal et al.	2015	Pakistan	EPS, BVPS, DPS, dividends yield and price-earnings ratio were researched by Iqbal <i>et al.</i> (2015). It was found that EPS has a significant impact on the share prices of companies listed on the Karachi Stock Exchange.

Source: Researchers listed

From Table 1, it is evident that the studies of Menaje (2012) and Iqbal et al. (2015) proved EPS to be the most reliable predictor of share price behaviour, while Menike and Prabath (2014) and Sulaiman and Migiro (2015) demonstrated a significant relation between DPS and share prices. Sharma (2011) found that both EPS and DPS can impact share prices significantly. Clearly, different researchers have reached different statistical conclusions, but one simple fact is established: Both EPS and DPS can potentially affect share price behaviour.

RESEARCH OBJECTIVE

Previous international studies (Table 1) indicated that share prices are significantly affected by both DPS and EPS. It is submitted that these previous studies can be partially duplicated to benefit South African investors in two ways: It can clarify whether both earnings and dividend information influences the behaviour of share prices in South African context and provide guidance as to which variable (dividends or earnings) impacts share prices to the greatest extent. As a result, the research question of this study can be formulated as follows: Which of BEPS or DPS has the greatest impact on share prices of the top 40 JSE listed companies? The primary objective of the study was, therefore, to determine whether share prices depend more on BEPS or DPS, should the top JSE listed companies be employed as sample.

DATA COLLECTION AND ANALYSIS

In order for the objective to be fulfilled, data were collected for statistical analysis. The population of the study comprised of 40 JSE listed companies, with the highest market capitalisations. In this study, non-probability sampling was applied in the form of convenience sampling. Convenience sampling is a less rigorous technique, involving the selection of the most accessible subjects (Marshall, 1996). The selected sample was included in the study due to the easy accessibility of financial information that relates to research objective. The sample size was selected to reflect the population of the study exactly, in order to contribute to accuracy of research findings. Although the statistical observations are limited to that of the top 40 JSE listed companies, all observations are included in the statistical sample.

This study required the collection of BEPS figure, DPS figures and market prices of shares. These variables were analysed for five consecutive years, 2012 to 2016. The selection of a five-year review period is in line with a similar study performed by Menike and Prabath (2014). As indicated previously, three types of EPS exist: basic, diluted and headline EPS. Since the study of Robbette (2015) proved that BEPS correlates better with the share prices of the top 40 JSE listed companies than other EPS categories, only BEPS was included as an earnings variable in the study.

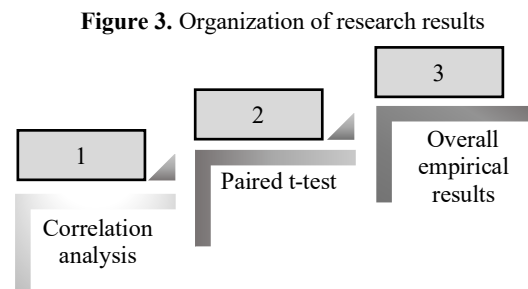
Share prices, included in the empirical study, were measured for three different timeframes: the market value 20 days before publication of financial statements, on the day of publication and 20 days after the publication. This method of share price collection was applied in the studies of Chabalala (2014) and Robbetze (2015). Data collection was performed with aid of INET BFA, formerly known as BFA McGregor, a financial reporting database for listed and unlisted companies. In order to reach a sure answer to the primary objective of the study, variables were analysed statistically. Two different research methods were applied:

- Correlation modelling; and
- Paired t-testing

The collected data were evaluated by means of the SPSS predictive and analytical software package (version 23.0).

EMPIRICAL FINDINGS

The purpose of this section is to provide a detailed analysis of the association between BEPS, DPS and share prices. Research results were organised as follows:



Source: Author

Correlation Modelling

Field (2009) posited that correlation coefficients express the association among variables by demonstrating whether it is related or unrelated. Correlation coefficients with a magnitude between 0.3 and 0.5, indicate that variables have a considerable correlation (Calkins, 2005). If the correlation coefficient is smaller than 0.3, there is little to no association among the variables. A perfect positive correlation is represented by 1, while -1 demonstrates a perfect negative correlation (Field, 2009). Correlation results were presented in a form of a Pearson product moment correlation coefficient, which is an analysis that ensures no assumptions of normality, linearity and homoscedasticity are made. Table 2 displays the correlations between BEPS, DPS, share price on publication date (PD), share price 20 days before publication date (20BP) and the share price 20 days after publication date (20AP).

Table 2. Correlation results

	BEPS			DPS		
2012	r	N	p	r	N	p
PD	.481**	40	.001	.464**	40	.002
20BP	.484**	40	.002	.464**	40	.003
20AP	.493**	40	.002	.479**	40	.003
2013	r	N	p	r	N	p
PD	.590**	40	.000	.520**	40	.001
20BP	.592**	40	.000	.528**	40	.000
20AP	.592**	40	.000	.534**	40	.001
2014	r	N	p	r	N	p
PD	.627**	40	.000	.572**	40	.000
20BP	.621**	40	.000	.575**	40	.000
20AP	.634**	40	.000	.584**	40	.000
2015	r	N	p	r	N	p
PD	.603**	40	.000	.399*	40	.011
20BP	.624**	40	.000	.398*	40	.010
20AP	.626**	40	.000	.401*	40	.011
2016	r	N	p	r	N	p
PD	.545**	40	.000	.389*	40	.011
20BP	.550**	40	.000	.430**	40	.005
20AP	.557**	40	.000	.433*	40	.013

**Correlation significance at the .01 level (two tailed)

*Correlation significance at the .05 level (two tailed)

Source: Author

From Table 2, it can be observed that BEPS delivered the highest correlation coefficients for all years under review. BEPS was able to provide a share variance (R^2) of between 29.7% and 40.1%, and therefore up to 40% of changes in share prices could be attributable to BEPS, at a confidence level of 0.01 (two-tailed). DPS delivered share variances of between 15.1% and 34.1%. Although this is also a valuable finding, it would seem that the variance is slightly lower than that delivered by BEPS. Therefore, it is submitted that BEPS has provided higher correlations with share price than DPS. For the measured timeframes, it can also clearly be seen that higher correlation is found 20 days after publication date. It would seem that investors therefore react upon the information within 20 days after publication and not necessarily before or on the publication date. The difference between the correlations and share variance were small. In the next paragraph paired t-testing was applied in order to determine whether such small differences may be considered as significant.

Paired T-Testing

According to Shier (2004), paired t-testing compares the means of two samples, under assumption that observations within the two samples can be paired. Pallant (2013) described a paired t-test as repeated measures used when data of one group of companies is collected for two different occasions or under two different conditions. It assumes a null hypothesis and that there are no differences in mean scores of outcomes (Huizingh, 2007). According to Pallant (2013), paired t-testing determines whether the mean scores of data sets differ at a level that is statistically significant. The paired t-test results of the study are presented in Table 3.

Table 3. Paired t-testing results

Pair	Variable sets	Mean	Standard deviation	T-tests	
				t-value	p-value
1	BEPS and PD	.5762	.05733	2.710	.033*
	DPS and PD	.4740	.07557		
2	BEPS and 20BP	.5756	.05789	2.582	.031*
	DPS and 20BP	.4814	.07182		
3	BEPS and 20AP	.5720	.05909	2.788	.031*
	DPS and 20AP	.4726	.08382		

*Correlations differ significantly at $p < .05$

Source: Author

Table 3 represents the paired t-testing results of the study. The t-test indicated that the correlations between BEPS and DPS differed significantly, at a probability level of 95% (two tailed). The statistical finding indicates that, although differences were small, these differences were significant. BEPS delivered the highest correlation coefficient, and it may be posited that BEPS provides higher correlation coefficients than DPS, when the relationship to share prices is measured. It is therefore submitted that BEPS is a better predictor of share price behaviour than DPS.

Overall Empirical Result

Overall, the statistical analysis proved that BEPS generated higher correlation coefficients than DPS and that the differences between correlation coefficients of BEPS and DPS differed significantly. Therefore, BEPS is a better variable for potential and current investors to base their investment decisions on, if such investors intend to evaluate the changes in market values of the top 40 JSE listed entities.

LIMITATIONS OF THE RESEARCH

In performing the study, the following limitations were identified:

- The results of this study cannot be generalised, the outcome is only applicable to the selected sample;
- The research only included 5 years of data. Results may be altered over the long term;
- The study was dependent on the accurate disclosure of BEPS and DPS figures by the selected companies included in the sample; and
- The aid used for data collection and evaluation could be faulty and could lead to possible errors.

RECOMMENDATIONS FOR FURTHER RESEARCH

The following areas for further research were identified:

- Duplicate the research method within different JSE sectors and observe whether different results are obtained per sector; and
- Apply a similar empirical analysis to other entities that are listed on other stock exchanges to observe whether research outcomes differ.

CONCLUSION AND CLOSING REMARKS

In this study, the association between BEPS, DPS and share prices of the top 40 JSE listed firms were evaluated. Share prices were measured 20 days (20BP) and after (20AP) publication, as well as on publication date (PD). The analysis was performed for a period of five consecutive years, 2012 to 2016. The association between the variables, BEPS and share price, and DPS and share price, were statistically measured by executing two tests: a Pearson correlation coefficient and a paired t-test.

In terms of the Pearson correlation test, it was determined that there are strong positive associations between BEPS and share prices. Regarding the paired t-test, it was found that the correlations obtained for BEPS and share prices

differed significantly from the correlations obtained from DPS and share prices, while the correlations obtained for the BEPS were higher than the correlations generated by DPS.

The research was undertaken to establish whether the share price behaviour of the top 40 listed entities depend more on BEPS or DPS. This study statistically concluded that share price is more dependent on BEPS than DPS. Subsequently, the research question can be answered as follows: BEPS has a greater impact on share prices than DPS, if the top 40 JSE listed companies are employed as sample. If investors consider investing in the sample under scrutiny, the evaluation of BEPS, rather than DPS, is recommended. Statistically, BEPS proved to have better correlations with share prices and will provide the investor with a better ability to anticipate changes in share prices. Although DPS is a significant associate of share price, it has proven to be secondary to BEPS in correlating with share price behaviour of the sample.

AUTHOR BIOGRAPHY

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