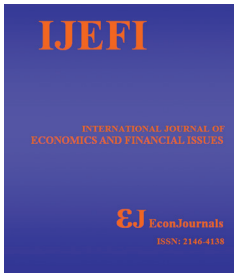

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Tracking the Performance of Listed Shares: A Comparison Between JSE Single- and Dual-listed Shares

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ABSTRACT

The measurement of a stocks return over a time period is analysed for several reasons. The most obvious and most important one is to inform investors' expectations regarding future earnings potential. Therefore, the study made a comparison using the financial performance of single-listed shares versus dual-listed shares that trade primarily on the South African stock market (JSE). The time-period for the comparison of financial performance of single- and dual-listed shares was from 2005 to 2020 to confirm or refute the general perception surrounding superior returns of dual-listed companies as opposed to single-listed companies. Utilising financial ratios can be imperative when making informed judgments about investment portfolios. Seven of the most important financial ratios were used to measure the performance of company shares within nine specified industry sectors in South Africa. These included the earnings per share ratio (EPS), price-earnings ratio (P/E), market to book value ratio (M/B), current ratio (CR), debt to equity ratio (DER), and the return on equity ratio (ROE). The nine identified industries included the transport, consumer staples, printing, pharmaceutical, mining and manufacturing, technology, luxury goods and services, financial services, and real estate industries. The results indicates that the dual-listed companies do indeed outperform single-listed companies on the JSE for the majority of the financial ratios over the specified period. This study contributes to portfolio management by informing equity allocation in the short-term and long-term.

Keywords: Single-Listed, Dual-Listed, Volatility, Performance, Shares, Financial Ratios
JEL Classifications: G11, G17, G19

1. INTRODUCTION

Investors often encounter financial risks when investing in shares (Sulaiman, 2012). As such, investors aim to invest in companies that will create value and continuously perform well. Superior decision-making by financial managers will give investors and portfolio managers the confidence to include a specific company's share in their portfolio (Putri and Rahyuda, 2020). The overall performance of a company is also important as it indicates whether the company can create wealth for its shareholders through the capital that they generate from its shareholders (Murekefu and Ouma, 2012). Reported financial ratios are very important when considering investing in shares listed on the Johannesburg Stock Exchange (JSE). Some companies are only single-listed whereas others are dual-listed. Single-listed companies only issue shares on a single stock exchange. Dual-listed companies, which almost account for a fifth of the JSE's Main Board market cap, are listed on more than one exchange. The motivation behind a company listed on more than one stock exchange is that it allows them to raise more capital by reaching more investors (JSE, 2021).

The COVID-19 pandemic has changed the lives of investors, as well as the economic environment in which companies operate globally (PWC, 2020). For as far as new infections were reported, governments worldwide started to restrict their countries by implementing nationwide lockdowns to prevent COVID-19 from

spreading. The lockdown had a massive disruptive impact on the global economy and spread uncertainty among investors (PWC, 2020). It is not the first time that financial markets have faced a crisis and this type of economic disruption has historically always been predicted by economists. However, this was the first time that a financial market crashed because of a biological disease (Smales, 2021). Aggarwal et al. (2020) studied the impact of the COVID-19 pandemic on global stock markets throughout multiple countries. The study found that the panic reaction by investors as an effect of the COVID-19 pandemic harmed overall returns. This is a result of investors expecting higher risk premiums during volatile market conditions. The effect of the lockdown negatively impacted the returns of stock markets and company growth. It is a possibility that COVID-19 and the lockdown hurt the performance of single-listed companies; however, it affected the performance of dual-listed companies more severely since they are exposed to exchange rate fluctuations as well. Therefore, this might result in some investors wanting to exclude international exchange rate risks from their portfolios.

Investors have different needs and risk tolerances and based on this they will be able to decide in which shares and at which level of risk they are willing to invest (Sulaiman, 2012). Investors are required to take multiple different factors into account when it comes to investing in shares since they intend to convert their money into shares. Investors are said to make more conservative investments during times of uncertainty, such as the COVID-19 pandemic (Bird and Yeung, 2012). Therefore, investment options can be analysed thoroughly by conducting a fundamental analysis together with a company analysis. Fundamental analysis can be used to identify periods of volatility in the market by taking all relevant economic factors into account, such as the current interest rate, inflation, and GDP. Company analysis includes evaluating certain companies which are considered for inclusion in the portfolio. It typically includes the history of a company, its core operations, if they are dual-listed, and how its shares usually perform on certain stock exchanges. A common method used to analyse a company's finances is to use financial ratios, which paint an overall picture of the financial performance of a company and supply information concerning the internal mechanisms of the company (Namazi and Rostami, 2006). Performance ratios can give a good indication if a company is worth investing in as it is the oldest method used to evaluate companies' performance. The confidence that investors have in financial markets could be affected by performance ratios. A company's financial performance is usually reported annually in its financial statements (Arkan, 2016).

According to Emamgholipour et al. (2013), evaluating a company's performance is done using financial ratios. These include the earnings per share ratio (EPS), price to earnings per share ratio (P/E) as well as the ratio of market value to book value (M/B). The EPS ratio evaluates the prices of shares, profitability, and the risks that are associated with earnings from shares, while the P/E ratio evaluates investors' willingness to buy a certain share based on the earnings that they would receive from that company (Emamgholipour et al., 2013). Generally, an increase in the P/E ratio is associated with a growing company. The M/B ratio reveals fundamental problems in a company and risks that can be associated with the investment and is often used to predict the future performances of a company based on historical performances (Emamgholipour et al., 2013). Additionally, a few other ratios can be used to track the performance of a company, such as the current ratio (CR), the debt-to-equity ratio (DER), as well as the return on equity ratio (ROE). These ratios aim to indicate the liquidity, solvency, activity, and profitability of companies, respectively (Asmirantho and Somantri, 2017). Adequate liquidity within a company is very important as it also influences the profitability and dividend payments to shareholders. Portfolio managers and investors would want to consider this when looking at potential investments (Rehman and Saleem, 2011). The financial performance of a company is not the only factor that needs to be considered during the process of equity investment.

Share prices also play an important role for investors when searching for investment opportunities. When a company's share price increases, it shows that value is being created from an investor's perspective. According to Atiyet (2012), value creation and cash flows are generally seen as the most important performance measurements for companies. Fernández (2002) stated that shareholder value is created when shareholder returns are greater than the required returns to equity. Companies face additional risks during volatile economic periods, such as the COVID-19 pandemic, because of the uncertainty around the stock markets and future sales of the company (Alam et al., 2020). Investors experience panic as an effect of the COVID-19 pandemic, and it may be the case that this makes them more risk-averse as they are expecting an increased risk of falling share prices (Aggarwal et al., 2020). The global COVID-19 pandemic made investors and portfolio managers aware that performance ratios used when making investment decisions are essential, especially in times of volatile economic conditions. However, ratio analysis should always be conducted when considering possible investments.

Investors and portfolio managers rely heavily on performance ratios to determine where and how long they plan to invest their capital. However, single-listed, and dual-listed shares would theoretically handle volatile periods differently. The performance of dual-listed companies might not decrease as significantly as the performance of single-listed companies. Therefore, this study will be focusing on measuring the performance ratios of dual-listed and single-listed companies primarily listed on the JSE. There have been extreme market events before, but this is the first time that it is due to a biological epidemic (Smales, 2021). There exists a general feeling of uncertainty among investors and companies during volatile economic periods and identified trends regarding performance ratios can provide some insight into whether to invest or not (Aggarwal et al., 2020). Investors and portfolio managers need to understand the impact of including dual-listed shares in a portfolio, as well as how these shares react to volatile economic periods. This study will aim to contribute to the current body of knowledge and to create a responsible investing environment. Additionally, providing investors and portfolio managers with insight regarding performance ratios and identifies a trend in single- and dual-listed share performance, if there are any, during volatile periods such as, but not limited to, the COVID-19

pandemic. The objective of this study is therefore to measure the performance of JSE single-listed companies and compare them to JSE dual-listed companies focusing on the year 2005 until 2020.

2. LITERATURE REVIEW

Companies can decide to finance their growth through capital acquired on the JSE. This is referred to as a JSE single-listed company. According to market capitalisation, the JSE trades as one of the top 20 biggest stock exchanges in the world (JSE, 2021). This has been a secure, regulated marketplace that offers liquid capital to issuers for over 130 years and serves as motivation as to why companies would choose to be listed on the JSE. There are certain requirements that companies need to meet when they decide to list their shares on a stock exchange. The company needs to reach the minimum level of market capitalisation and provide certain documentation such as their financial statements (Onyuma et al., 2012). JSE single-listed companies gain benefits from their listing in the form of publicity, as these companies get media exposure to build up their reputation and investor confidence in the company (JSE, 2021). Companies can also choose to issue their shares on more than one stock exchange, and they are known as dual-listed companies (JSE, 2021). The purpose would be to seek more capital for the company to finance growth. The transfer of capital in South Africa faces limitations and therefore the capital offered in the country might not be sufficient, resulting in the decision to list a company on a foreign stock exchange (Omarjee, 2014). Dual-listed companies also need to meet the requirements of the foreign country where they are secondary listing, and this process could become very costly but beneficial for dual-listed companies. Companies generally make decisions that will maximise their profits, therefore the decision to dual-list would theoretically create value for the company and improve the wealth of shareholders (IMF, 2009). The IMF (2009) also points out other factors that can contribute to the performance of dual-listed companies. These factors include the increasing liquidity of the stock market, diversification of investors' portfolios, improving the transparency of company information, as well as the reputation of the company, and creating jobs by employing more labour locally and internationally. The IMF (2009) found that companies are usually already well-established in the country where they are primarily listed before they decide to dual-list on a foreign stock exchange.

Dual-listed companies are generally seen as well-established and would theoretically perform better than single-listed companies. This is supported by Onyuma et al. (2012) who state that companies can access capital at a lower cost through a secondary listing. Companies can use this capital to invest in new projects and add to the value of the company, which will lead to a prosperous company with the potential to grow in the future (Onyuma et al., 2012). Another study conducted by Bahlous (2013) stated that shareholders also gain through the secondary listing of a company through increased liquidity, transparent information, and the ability to diversify their portfolios. Bahlous (2013) also identified some advantages for the dual-listed company such as lower cost of capital, access to more investors and new customers, a more attractive public profile, and the possibility of partnering with new suppliers and financial institutions. However, Onyuma et al. (2012) studied the impact of dual listing on the financial performance of companies in Eastern Africa. Financial ratio analysis was used to find empirical evidence on the liquidity, profitability, and gearing of three Kenyan companies after they decided to dual-list their shares. The results were positive and showed that the liquidity, as well as the P/E ratio and the confidence of these companies, improved after the dual-listing (Onyuma et al., 2012). The profitability and gearing ratios of these companies also improved, but the improvement was statistically insignificant. The results also reflected a reduction in the dividend yield, but these results were statistically insignificant. Overall, it can be said that companies do benefit from dual-listing their shares, especially in terms of confidence and liquidity (Onyuma et al., 2012). The study also revealed no clear evidence that companies with dual-listed shares create more value for their shareholders. Financial ratio analysis becomes relevant when investigating the financial performance of a company, as each of the ratios reveals the financial performance of a company from a different perspective (Adam, 2014).

Financial ratios reflect the financial, as well as operational situation of a company (Islam et al., 2014). Furthermore, these ratios generally reflect the current market situation and portfolio managers, and investors can use them to make important long-term decisions. Islam et al. (2014) stated that the EPS ratio is one of the most important factors on that investors base their investment decisions. Investors use the EPS ratio to determine a company's share price and value. The EPS ratio is closely linked to a company's share price and profitability and is also used to determine the P/E ratio. Theoretically, a company with a high EPS ratio would also have a high share price. It would positively affect investors, leading to an increase in demand for the share, but the opposite is also true for a company with a low EPS ratio. Islam et al. (2014) also studied the relationship between a company's share price and its EPS ratio concluding that the relationship is more circular rather than direct. The expectation was that as EPS increased, the share price of the company would also increase but the results showed that the share price did not increase as much as the EPS increased. The EPS is not the only indicator that can be used to evaluate a company, and therefore investors should look at several financial ratios before making a decision.

A previous study by Apak and Uyar (2009) investigated the impact that the global financial crisis in 2008 and 2009 had on EPS in the textile and food industry. It was found that both industries experienced sharp declines in their EPS ratios. They also found the food industry to be more of a domestic-orientated market whereas the textile industry is said to be an export-orientated market. Therefore, the EPS of the textile industry declined more drastically during the crisis months than that of the food industry. This suggests that the weakened competitiveness in international markets caused the decline in profitability in these industries, as well as the EPS ratios.

The P/E ratio is a popular measure to use when evaluating the shares of companies in the same industry because these companies are affected by similar factors in the market (Gottwald, 2012). The level of interest rates can affect the P/E ratio of a company

because of the effect it has on the earnings of a company. The P/E ratio can also provide the investor with information about the value that a company creates, as well as possible future growth opportunities for a company. Wu (2014) argues that the P/E ratio also reflects the risk, expected earnings growth, and expected rate of return associated with a certain company. The cost of equity capital can also be estimated with the use of the P/E ratio to explain the movement of share prices (Wu, 2014). According to Gottwald (2012), a high P/E ratio means that a company is not creating value for its shareholders. To support this statement, a study by Wu (2014) stated that portfolios that mostly consist of shares with a low P/E ratio and very few shares with a high P/E ratio had significantly positive returns. Therefore, the P/E ratio is a very important financial ratio that portfolio managers use to recommend shares for portfolio inclusion, but certainly not the only ratio. The management of assets and equities within a company is also an important factor to consider.

The M/B ratio reflects the market price of a company concerning its equities. Sharma et al. (2013) described the M/B ratio in the following different ways: it reflects the value of a company's equities or net assets that the marketplaces on it, it can also be described as the manager's ability to effectively use the assets of a company to ensure growth but in contrast, the M/B ratio is also said to be linked to risk. Therefore, the M/B ratio can give a clear indication of whether a company is well-managed or not. This mostly includes the assets of a company as the effective management thereof is essential for future growth and decisions about additional capital investments (Sharma et al., 2013). If a company makes good decisions in terms of its assets, it means that they offer good returns which will attract investors. Thus, it can be argued that the relationship between the returns of the investor and the M/B ratio represents a risk and return trade-off. If the assumption is made that the market is efficient, and a high M/B ratio means high returns for the investor then the M/B ratio represents risk. Consequently, the higher the M/B ratio, the higher the risk. However, Sharma et al. (2013) also argue that the M/B ratio can theoretically be seen as a measurement of the performance of a company because it takes historical and future performance predictions into account. Another measure of performance can include a company's ability to keep up with short-term debt to keep operations running.

Babalola and Abiola (2013) defined CR as the relation of a company's current assets to its current liabilities. The current assets of a company refer to those assets that are in the form of cash and cash equivalents, or easily convertible into cash within a short period (usually less than one year). Current liabilities refer to the short-term debt of a company. The CR indicates a company's ability to pay off its current liabilities with its current assets (Babalola and Abiola, 2013). As such, the CR is also a measure of the safety of a company's ability to cover its short-term obligations. A comparison between profits made from a company's assets or capital can also be made to determine if the company performs well (Nuryani and Sunarsi, 2020). A high CR means that a company's operations work efficiently and effectively together with good fund management. Generally, a high CR is when the current assets are twice the current liabilities (Babalola and Abiola, 2013). The CR has a massive impact on a company's dividend growth and investor confidence. Nuryani and Sunarsi (2020) tested the effect of the CR on dividend growth and found that the CR contributes to 40.4 per cent of a company's dividend growth. The CR reflects the liquidity of a company, and this could be affected during a recession. A previous study conducted by Osmani and Deari (2016) found evidence that the liquidity of 23 selected companies listed on the Macedonian Stock Exchange was reduced by 4.5% during a recession between 2011 and 2012. However, their liquidity increased by 97.5 per cent during the period after the recession between 2012 and 2013. Their profit margins only increased by 16.7 per cent during 2012 and 2013, implying that companies rather focused on liquidity rather than profitability.

Amanda (2019) defined the DER as a leverage ratio that reflects a company's capital and its total debt. The DER indicates how much funds provided by creditors are being used to cover the debt of the company. In other words, the DER shows what portion of a company's equity is used to finance the debt of a company (Heikal et al., 2014). When the DER of a company is high, it means that its risk of failure is much higher than when its DER is low (Amanda, 2019). Therefore, the higher the DER, the greater its debt burden, as well as interest cost (Heikal et al., 2014). This means that the profit of a company will be reduced because of too much debt, but it will also depend on the size of the company to determine its ability to handle large debt burdens. This means that debt is not always a bad thing for large companies, as they will be able to pay their debt and use it to develop and grow the company. Heikal et al. (2014) state that companies that already have a high DER will experience difficulty in finding external finance in the future. However, a company with a high DER can use it to benefit its operations in terms of generating future earnings, growth, and profits. Not only is it important for a company to be able to manage its debt, but also its assets.

According to Kijewska (2016), investors and portfolio managers regard the ROE ratio as one of the most important factors when considering potential investments. Correspondingly, Ahsan (2012) agreed that the ROE ratio is one of the most popular financial ratios among investors and portfolio managers as it links the income statement to the balance sheet. The ROE ratio is a measurement of the earnings performance of a company. It shows the investors whether a company utilises its funds efficiently to generate profits or not. Consequently, it reveals a company's ability to generate profit and the management's ability to use those profits efficiently (Kijewska, 2016). A company with a high ROE ratio manages to use capital received from shareholders effectively to generate profits. Investors can use the ROE ratio of a company to compare it to competitors, benchmarks, and historical figures to identify a trend. When the ROE ratio of a company is improving it means that the company can generate profits with existing capital from shareholders without the need for acquiring additional funding (Kijewska, 2016). The management of a company is responsible for investigating the historical ROE ratios of the company and identifying relevant strategies to improve on them, as well as why it is declining if that is the case.

In the end, single-listed and dual-listed companies exist to make a profit. By doing this, a company needs to grow and provide its

shareholders with adequate returns (Nuryani and Sunarsi, 2020). It is however very tough to do so with increasing competition and therefore the management of a company must utilise the available resources as effectively and efficiently as possible to reach the goals of the company. The performance of a company is reflected in its share price and that will attract investors, thus it is important to continuously improve the company in terms of financial performance (Nuryani and Sunarsi, 2020).

During this study, financial ratio analysis will be employed to compare the financial performance of single-listed companies and dual-listed companies primarily listed on the JSE. It is one of the most important steps that investors and portfolio managers follow when constructing a portfolio (Innocent et al., 2013). This is done to test whether dual-listed companies indeed perform better than single-listed companies because of their international exposure and increased capital inflow. The most effective way of analysing financial ratios is to compare them to a benchmark or a norm. A single financial ratio on its own does not always reflect reality. Financial ratio analysis also helps the investor to simplify a lot of information to make a decision. The investor needs to conclude the performance of companies based on their financial ratios. Innocent et al. (2013) state that the financial ratios of a company should not be looked at in isolation but as one picture painted by the company representing its financial performance.

3. METHODOLOGY

The preceding sections described the theoretical part of the seven most important financial performance ratios. In this section, the study focused on the empirical part of the financial ratio analysis. Knowing which ratios are important and what they tell the investor about a company is essential. Investors and portfolio managers need a better understanding of how to interpret performance ratios and how identify trends in company share performances (Aggarwal et al., 2020). It is also very important for them to understand the impact of including dual-listed shares in a portfolio and to know how they react to volatile economic periods (Bird and Yeung, 2012). Therefore, this study aims to contribute to the current body of knowledge to encourage a responsible investing environment. The study aimed to track the performance of JSE single-listed shares and to compare it with the performance of JSE dual-listed shares using seven of the most important financial ratios.

3.1. Empirical Study

To track the performance of JSE single-listed shares and compare them to JSE dual-listed shares, an empirical study using secondary quantitative data was conducted. A financial ratio analysis formed the basis of the empirical study and contained an analysis of JSE single-listed and dual-listed shares. These financial ratios include the EPS ratio, P/E ratio, M/B ratio, CR, DER, and the ROE ratio. These financial performance ratios were sourced from IRESS BFA (2021) over the specified research period of 16 years. The study used annual data over the 16 years from 2005 until 2020. These were identified as the most important financial performance ratios and they were sourced and analysed during the study. These ratios aim to indicate the liquidity, solvency, activity, and profitability of a company and this highlights the importance and usefulness of these ratios (Asmirantho and Somantri, 2017). Adequate liquidity within a company is very important as it also influences the profitability and dividend payments to shareholders. Portfolio managers and investors would want to consider this when looking at potential investments (Rehman and Saleem, 2011). The analysis included comparative tables constructed in Microsoft Excel 2019.

3.2. Target Population and Sampling Frame

The target population for the financial ratio analysis included nine JSE single-listed shares and nine JSE dual-listed shares. The purpose of the study was to find single-listed shares to compare with dual-listed shares in the same or similar industries. The included shares had to fulfil the following requirements:

- The shares should have been listed on the JSE, although a primary listing on the JSE was not a requirement for dual-listed shares;
- Data on the relevant financial performance ratios should have been available for each share for the specified sampling period which was from 2005 until 2020; and
- Each chosen share should have had a competitor in the same or similar industry to compare the results of the two shares.

Therefore, the study identified nine industries and 18 shares within the analysis. The nine industries consist of transport, consumer staples, printing, pharmaceuticals, mining and manufacturing, technology, luxury goods and services, financial services, and real estate.

3.3. Hypothesis

According to a previous study by Onyuma et al. (2012), dual-listed companies have access to increased capital and are generally well-established companies. These companies can use the additional capital to invest in new developments to perform better financially over the long term. Bahlous (2013) also supports this view as this previous study stated that shareholders also benefit significantly from buying dual-listed shares. This increases the liquidity and diversification of the shareholder's portfolio. Hence, dual-listed shares attract shareholders, and this might be the reason for their superior performance over single-listed shares (Onyuma et al., 2012).

Therefore, the following hypotheses were formulated to achieve the primary objective of this study:

- H_0: JSE dual-listed shares perform better than JSE single-listed shares.
- H_a: JSE dual-listed shares do not perform better than JSE single-listed shares.

The study consisted of various industries and shares to test the hypotheses over the specified sample period. The 16-year specified sample period was considered sufficient to identify trends and distinguish between the performance of the two shares.

3.4. Statistical Analysis

Seven of the most important financial performance ratios that portfolio managers and investors use daily formed the basis of the financial ratio analysis. The ratios and how they were calculated

are set out below. Data on each of these ratios have been collected from IRESS BFA (2021) for the specified sample period.

$$EPS = \frac{Profit\ after\ tax}{Number\ of\ ordinary\ shares\ issued} \quad (1)$$

$$P/E = \frac{Market\ price\ of\ share}{EPS} \quad (2)$$

$$M/B = \frac{Market\ value\ of\ equity}{Book\ value\ of\ equtiy} \quad (3)$$

$$CR = \frac{Current\ assets}{Current\ liabilities} \quad (4)$$

$$DER = \frac{Total\ liabilities}{Total\ equtiy} \quad (5)$$

$$ROE = \frac{Earning\ after\ tax}{Total\ equity} \quad (6)$$

4. EMPIRICAL RESULTS

Financial ratios form part of the financial statements of a company. This is essential information that portfolio managers and investors can use to make informative investment decisions (Widyanty and Oktasari, 2020). Table 1 represents the average EPS, P/E, M/B and CR from 2005 to 2020.

4.1. Earnings per Share

The EPS ratio evaluates the prices of shares, profitability, and the risks that are associated with earnings from shares (Emamgholipour et al., 2013). The performance of EPS within the transport, consumer staples, and real estate industries was very similar when the single-listed shares were compared to the dual-listed shares. The EPS within these industries followed the same trends over the past 16 years for both single-listed and dual-listed shares. The most noticeable period of volatility was during 2020 as a result of the global COVID-19 pandemic. All non-essential goods and services were prohibited to operate during the lockdown period which spread uncertainty among investors and consumers. This affected company sales, profits, and share prices (PWC, 2020). Consumer staples shares performed very similarly in the consumer staples industry during the 16 years. On average, the single-listed consumer staples share outperformed the dual-listed share. This may be because the single-listed shares' operations focus on essential consumer goods including medication while the dual-listed share focused on catering for higher-income level consumers. There will always be a demand for medication as people rely on pharmacies for their monthly shopping as well as in times of illness.

The EPS of the dual-listed share in the printing industry dropped dramatically during 2020. On average the dual-listed share did outperform the single-listed share, however, the single-listed share has had a very stable EPS over the past 16 years. The volatility of dual-listed shares may be because of their exposure to international markets. Therefore, it was much more vulnerable to market fluctuations. According to Ideal Printers (2019), the demand for printing paper decreased a lot over the past two decades as modern, digital methods are preferred by most consumers. This led to an increase in the price of paper and a decrease in sales and profit in this industry. The dual-listed pharmaceutical share outperformed the single-listed share on average and yearly for the past 16 years. Similarly, the EPS of the single-listed share performed quite consistently with the only exception being in 2020. Therefore, it appears that the COVID-19 pandemic during 2020 did not have much of an effect on the dual-listed share. This may be due to the essential nature of the company in terms of the supply of medication during a global pandemic pushing up demand and sales that lead to EPS rising. This refers to the pharmaceutical industry forming part of what is known as defensive investments. Louw (2019) described defensive investments as those shares which can withstand economic downswings because consumers simply cannot live without the service or product that they offer. Similarly, to the pharmaceutical industry, the dual-listed share of the mining and manufacturing industry outperformed the single-listed share on average and yearly over the past 16 years. Operations in Australia could have possibly contributed to the continued success of the dual-listed share during a pandemic. The dual-listed share managed to show growth during the COVID-19 pandemic in 2020 as most governments around the world, including Australia, still allowed mining operations to continue throughout national lockdowns.

Although, the effect of the COVID-19 pandemic can be seen through the decrease in performance of the dual-listed shares' EPS it still outperformed its counterpart single-listed share on average as well as yearly. This result makes sense as the dual-listed share is a well-established company and has a lot of business lines. In the financial services industry, the dual-listed share outperformed the single-listed share on average. With the only exception of 2008, the EPS of the dual-listed share outperformed the single-listed share yearly. In conclusion, dual-listed shares outperformed single-listed shares on average in five out of the nine industries. The only exceptions being the transport, consumer staples, luxury goods and services and real estate. The results of the performance of the consumer staples industry were consistent with the study of Apak and Uyar (2009). This industry seemed to have handled the 2008 GFC better than the other industries as its performance did not decline as much.

4.2. Price/Earnings Ratio

The P/E ratio evaluates investors' willingness to buy a certain share based on the earnings that they would receive from that company (Emamgholipour et al., 2013). A lower P/E ratio suggests that an investor pays less for each unit of earnings generated by the company. Alternatively, a high P/E ratio is not necessarily bad as implies that investors are expecting higher earnings growth in the future. Furthermore, some industries are expected to have a higher P/E ratio as opposed to others given the specific industry where the company is operating like the technology industry. This was supported by the P/E ratio of the dual-listed share in the technology industry with an average ratio of 42.5. The only two dual-listed shares that had a lower P/E ratio relative to the comparative single-listed shares were in the consumer staples and financial services industry. The dual-listed consumer staples

Table 1: Result summary of EPS, P/E, M/B and CR

	EPS		P/E		M/B		C/R	
	SL	DL	SL	DL	SL	DL	SL	DL
Transport	1198.5	1154.8	12.3	14.9	1.9	2.7	1.2	1.1
Consumer staples	335.9	247.3	20.3	16.6	8.3	5.2	1.1	1.3
Printing	103.0	285.1	13.1	63.5	1.2	2.0	3.6	1.3
Pharmaceutical	97.1	750.1	−4.3	19.7	5.2	4.0	1.0	1.4
Mining and manufacturing	−4.4	2305.4	−5.3	18.6	17.5	2.3	3.1	1.8
Technology	44.6	2763.8	8.1	42.5	1.4	4.2	1.9	2.1
Luxury goods and services	478.0	302.5	16.7	27.2	7.4	3.3	1.4	3.1
Financial services	24.5	167.7	12.9	10.3	0.7	1.3	2.1	2.2
Real estate	124.3	114.3	11.2	12.7	2.5	0.9	0.6	0.3

SL represents single-listed shares, and DL represents dual-listed shares.

shares' P/E dropped since 2016 which was a bad sign from the company's perspective but increased dramatically from 2019 onwards. The single-listed share showed an overall increasing trend in its P/E ratio over the past 16 years which was a good sign. The growing trend of the P/E ratios shows that these companies within the consumer staples industry have growth prospects for the future. The dual-listed printing share's P/E ratio performed very well in 2005 but dropped since 2006. When excluding the P/E of 2005 of the dual-listed printing share, then the single-listed share performed on average better.

From 2005 until 2019 the dual-listed and single-listed shares in the pharmaceutical industry followed the same trend in terms of the P/E ratio. The P/E of the single-listed share fell drastically during 2020 which was a negative sign. The dual-listed share outperformed the single-listed share during this period by having a positive higher P/E ratio. On average and yearly, the dual-listed technology share performed exceptionally better compared to the single-listed share. Within the luxury goods and services industry, the two shares performed very similarly over the past 16 years. The only two exceptions were during 2005 and 2020 when the dual-listed share performed much better in terms of P/E than the single-listed share. The single-listed share within the financial services and the dual-listed share within the real estate industry's P/E ratio spiked significantly during COVID-19 pandemic in 2020. During the whole period before 2020, the four shares within the financial services and real estate industries performed very similarly. In conclusion, most of the dual-listed industry shares outperformed the single-listed shares in terms of their P/E ratios. This was because the P/E ratios of the dual-listed companies were higher than those of the single-listed companies. Contrasting with previous literature by Wu (2014), which stated that investors and portfolio managers generally included more shares in the portfolio that had low P/E ratios. It was evident that shareholders were more willing to buy dual-listed shares than single-listed shares within these industries and based on their P/E ratios.

4.3. Market-to-book

The M/B ratio compares the market capitalization to the book value of a company. The book value per share is the total assets relative to the number of issued shares (Emamgholipour et al., 2013). According to Marx et al. (2021), a M/B value of more than one suggests that investors are willing to purchase the share at a premium whereas a M/B value of less than one implies that the share is trading at a discount. On average, only one single-listed and one dual-listed share displayed a M/B value of less than one. For five out of the nine industries, dual-listed companies had a M/B value less than that of single-listed companies but still displayed a value of more than one which implies that investors were willing to purchase dual-listed shares at a premium. In the printing and real estate industries, both the single-listed and dual-listed companies' M/B ratio reduced significantly in 2019. On a year-on-year basis, the only industry (both single and dual-listed) that showed an increase in its M/B ratio from 2019 to 2020 was consumer staples. Individual dual-listed companies in die pharmaceutical and mining industries also increased their M/B values. The outcome of the COVID-19 pandemic was especially apparent in the M/B ratio as a lower M/B ratio can only be achieved if the book value per share increases or the market price of the shares. For a majority of the listed companies, the latter was the most prevalent reason.

In conclusion, the results of the M/B ratios showed clear that the dual-listed shares performed better than the single-listed shares for the majority of the 16 years as investors were willing to pay a premium for these shares.

4.4. Current Ratio

The CR measures a company's ability to pay its short-term debts (Babalola and Abiola, 2013). A high CR is needed for companies that struggle to borrow on short-term notice. The results containing the performance of the CR were very inconsistent throughout the various industries. In the transport industry, both the single and dual-listed shares had a ratio of more than 1:1 but were still below the generally accepted ratio of 2:1. During 2020, the dual-listed share in the consumer staples industry managed to maintain the minimum acceptable ratio as opposed to the single-listed share that managed to outperform its counterpart. Similarly, in 2020 the printing industry, the single-listed share managed to increase its CR to over 4:1 thus outperforming the dual-listed share which only managed to maintain a ratio of 1.4:1. Supported by a strong M/B value, the current ratio of the dual-listed shares for pharmaceuticals and mining and manufacturing increased during the COVID-19 period as a result of an increase in current assets. Even though the CR for the dual-listed technological company decreased from 2019 to 2020, it still managed to maintain a CR of more than 4.2:1. In contrast, the single-listed share CR ratio decreased to below its long-term average of 1.9:1 to 1.4:1.

In conclusion, the results of the CR indicated that the dual-listed shares performed better than the single-listed shares over the

16 years. The liquidity of listed companies was expected to decline drastically during volatile periods such as in 2009 and 2020 as reflected in a previous study by Osmani and Deari (2016). This was evident in the majority of the single-listed shares cases but not for dual-listed shares (Table 2).

4.5. Debt to Equity

The DER of a company indicates how much funds provided by creditors are being used to cover the debt of the company. In other words, the DER shows what portion of a company's equity is used to finance the debt of a company (Heikal et al., 2014). The upper acceptable limit of the DER is generally 2:1, with no more than one-third of debt being long-term (Marx et al., 2021). When looking at the results of the DER, there were some major differences between the performances of single-listed and dual-listed shares. On average, dual-listed shares outperformed their respective single-listed competitors within transport, consumer staples, pharmaceuticals, mining and manufacturing, luxury goods and services, and real estate.

From 2019 to 2020 when the COVID-19 pandemic introduced previously unseen volatility levels, the DER of the dual-listed share spiked significantly from an already upper limit of 2.53:1 to 8.90:1. This was a negative sign for the dual-listed share as it meant that the company had an increase in the long term and short-term debt. The single-listed share in the printing industry outperformed the dual-listed share from 2005 to 2020. The dual-listed share in the pharmaceutical industry reduced its DER steadily since 2018. The short-term debt of the single-listed share in the mining and manufacturing industry increased significantly during the 2008 GFC. On an average basis, the dual-listed shares' DER remained constant suggesting a strong asset book and the ability to finance operations with their own capital as opposed to borrowing funds. Both the single-listed and dual-listed shares in the technology industry managed to maintain an average DER of below one for the past 16 years.

The dual-listed share in the luxury goods and services industry performed better than the single-listed for the majority of the 16 years. The single-listed share's DER increased drastically in 2020 when as a result of increased longer-term debt to sustain the company during the COVID-19 pandemic. The single-listed share in the financial services industry outperformed the dual-listed share since 2010. The DER of the dual-listed shares increased beyond the generally acceptable upper limit of 2:1, reaching a peak in 2020 of 12.2:1. The dual-listed share in the real estate industry managed to maintain an average DER of 0.5:1. The single-listed share reduced their DER ratio since 2014 to below 2:1 and managed to finance operations internally instead of acquiring additional long-term or short-term debt.

Table 2: Result summary of DER and ROE

	DER		ROE%	
	SL	DL	SL	DL
Transport	2.0	1.6	17.5	45.4
Consumer staples	2.1	2.0	40.9	27.6
Printing	0.2	2.3	10.2	4.1
Pharmaceutical	6.9	1.3	−1.2	21.4
Mining and manufacturing	3.5	0.8	−497.7	10.0
Technology	0.4	0.6	17.1	18.5
Luxury goods and services	1.0	0.4	33.1	14.4
Financial services	0.5	6.6	14.0	12.1
Real estate	2.8	0.5	23.3	13.5

SL represents single-listed shares, and DL represents dual-listed shares.

In conclusion, the results of the DER illustrated that the dual-listed shares generally outperformed the DER of the single-listed shares over the specified period. This is because the DER of the dual-listed companies was lower than those of the single-listed companies.

4.6. Return on Equity

The ROE ratio is a measurement of the earnings performance of a company. It shows the investors whether a company utilises its funds efficiently to generate profits or not. Consequently, it reveals a company's ability to generate profit and the management's ability to use those profits efficiently (Kijewska, 2016). In the consumer staples, pharmaceutical, and luxury goods and services, it was evident that the single-listed shares had higher ROE's for the majority of the period than their dual-listed competitors within their respective industries. The single-listed consumer staples company performed better than the dual-listed company from 2007 until 2020. In the printing industry, both single-listed and dual-listed companies displayed a negative ROE for the year 2020. This was primarily due to both companies sustaining losses. However, apart from the negative ROE in 2020, the single-listed share managed to maintain a fairly stable ROE since 2005.

The mining and manufacturing industry shares both had negative ROE's over the last 16 years, however, the dual-listed share managed to maintain stability since 2015 and maintained an ROE of more than 9%. The ROE of the single-listed mining and manufacturing share dropped drastically during 2011 but managed to increase again in 2012. The ROE of single-listed luxury goods and services decreased drastically in 2020. This can be attributed to the COVID-19 pandemic and national lockdowns. The financial industry was also vulnerable to the volatility brought forth by the COVID-19 pandemic and saw both share ROE reduces to below one per cent. The dual-listed share however managed to generate positive ROE's over the 16 years whereas the single-listed share had a negative ratio in 2019 and in 2009. Therefore, the ROE gave mixed answers in terms of whether it is better to invest in a single-listed or dual-listed share. In some cases, the single-listed shares outperformed the ROE of the dual-listed shares but in most cases, the two shares performed similarly throughout the industries. This showed that both single-listed and dual-listed companies were profitable and utilised their funds efficiently.

5. CONCLUSION

The study collected financial ratio data from nine different industries and included two companies within each of the industries. The study then aimed to compare the two companies within the same industry with one another using line graphs in Microsoft Excel 2019. The comparison comprised seven different financial ratios to reflect and compare the financial situation of the companies over the specified 16-year period from 2005 until 2020. There is a general perception that dual-listed companies perform

better financially than single-listed companies. In some instances, this theory had been proven to be correct, but it generally depends on what financial ratio the focus is on when making comparisons.

During this study, it was also found that the dual-listed companies performed better in some of the financial ratios, and single-listed companies performed better in others. The dual-listed companies performed better in terms of the EPS, PE, and M/B ratios. The single-listed companies on the other hand outperformed the dual-listed companies in terms of the CR, DER, and ROE ratios. Therefore, the dual-listed companies performed very similarly to the single-listed companies in terms of the number of financial ratios in which they dominated. However, the dual-listed companies have performed better throughout the majority of the six financial ratios. The H_0 hypothesis can therefore be accepted and that JSE dual-listed shares do perform better than JSE single-listed shares.

It is thus clear that the literature regarding the perception that dual-listed companies perform better financially than single-listed companies has been proven to be correct. This is important for investors and portfolio managers to take into consideration, as dual-listed shares might be more beneficial to a portfolio. However, the most important aspect to consider would be knowing which specific financial ratios to consider when choosing between single-listed and dual-listed shares. The study included seven of the most important financial ratios to consider when investing in shares and making a decision between single- and dual-listed shares. The line graphs gave investors a good representation of the trends of the companies over the past 16 years. It included the 2008 GFC and the COVID-19 pandemic in 2020. Therefore, the study enabled investors to conclude the performance of single- and dual-listed shares during low and high economic activity. However, the study left the discussion regarding why single-listed shares outperformed dual-listed shares and vice versa in future research studies. Future studies are also recommended to focus on why the seven identified financial ratios performed differently for each of the nine identified industries.

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