## Choice of Divestiture Method in South Africa: Spin-Off or Sell-Offs

by

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#### Abstract

This study investigates a company's characteristics that may determine whether to sell-off or spin-off. The empirical findings from logistic regressions and mean comparison t-tests, using a sample of 63 spin-offs and 81 sell-offs in South Africa from 1995 to 2013 are as follows. First, companies in financial distress, with high capital expenditure, high leverage and with a high return on equity choose to divest through a sell-off. Second, large parent companies and with a large number of business segments also choose to sell-off in order to refocus on core business lines. Third, spin-offs are preferred if the unit size is large and performing well in order to be independent. Finally, this study does not find evidence for hypothesized corporate governance factors such as the director's equity ownership and CEO/board chair office to be possible determinants of the choice of divestiture method.

Keywords: Spin-Offs, Sell-Offs, Corporate Divestiture

## 1. Introduction

Divestitures allow firms to raise cash, remove negative synergies, streamline and refocus their operations (Bergh, Johnson and Dewitt, 2008) with the overall objective of unlocking shareholder wealth. Spin-offs, sell-offs and carve-outs are alternatives modes of divesting. These of divestitures modes differ in terms of how they are structured and how they affect the parent firm, which affect decisions on how companies choose among them. A sell-off occurs when a firm sells a subsidiary/unit to a third and receives a cash consideration or other securities Ravenscraft and Scherer's (1987). With a spin-off there is no cash consideration involved but the shares of the divested subsidiary are distributed to existing shareholders and a new company will be formed Nixon et al (2000). An equity carve-out involves a public sale of the equity holdings in the subsidiary. However, the subsidiary will have little autonomy as the parent generally retains a controlling interest (Slovin, Sushka & Ferraro 1995). In South Africa and the rest of the world spin-offs and sell-offs are the two most commonly used routes to divesting (Bergh, Johnson & Dewitt 2008, Nichols et al. 2014)

The choice of spin-off or sell-off is driven by various factors which include, the characteristics of the divesting company, the level financial performance or financial distress, size of the unit to be divested, number of business segments and the corporate governance factors like independence of office of CEO and board chair (Steiner 1997). Steiner (1997) reported a preference for sell-offs when the division or company is characterised by; weaker financial performance, higher financial leverage, a high number business segments and a lower percentage of ownership by officers and directors. Nixon, Roenfeldt and Sicherman (2000) found that companies with smaller board of

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directors, separate offices for CEO and board chair and large business units to favour divesting through spin-offs. They also found that companies in financial distress are more likely to choose to sell-off than spin-off as a form of divesture. Kaplan and Weisbach (1992) suggest that the choice of type of divesture is influenced by financial performance, the size of the company's debt ratio and a need to focus on core business. Chen and Guo (2005) found that the need to refocus and the size of the company are major determinants of divestiture method chosen. The majority of the studies on the determinants of divestitures choices have largely focused on developed markets, for example Kaplan and Weisbach (1992); (Steiner 1997); Nixon, Roenfeldt and Sicherman (2000). Emerging markets like South Africa have been ignored. Given the uniqueness of South Africa in terms of the institutional setting and corporate governance systems, examining the subject in South Africa might yield different results in relation to those reported from developed countries like USA, where the majority of prior studies focused on.

The purpose of this study is to identify determinants of the choice of corporate divestiture approach in South Africa. The study is based on a sample of 144 corporate divestiture transaction in South Africa over the period 1995-2013. The results of this study show that companies in financial distress, high capital expenditure and high leverage and companies with a high market return choose to divest through a sell-off rather than a spin-off. In addition large companies with a high number of business segments prefer to divest through a sell-off; Spin-offs are preferred if the unit size is large and the unit is performing well. This suggests that the choice to spin-off may be considered if a unit is large enough to be independent. This study does not find support for hypothesized corporate governance factors such as the director's equity ownership, CEO and board chair offices being separate, as determinants of the choice of divestiture method.

## 2. Literature review

#### 2.1 Sell-offs versus spin-offs

The choice of whether to spin or sell-off assets is determined by the various factors classified by, performance, gearing and financial distress, company diversification, company size and corporate governance.

#### 2.2 Performance

Literature supports the view that the performance of the parent company and the unit to be divested is a major determinant of the divestiture choice. There is a fair amount of consensus for the view that companies characterised by poor profitability will tend to engage in sell-off. This view is supported by Steiner (1997) who found that poor performance encourages sell-offs. Prezas and Simonyan (2012) found that assets that underperform relative to their full potential are more likely to be the subject of a sell-off rather than a spin-off. Ravenscraft and Scherer's (1987) found the rate of sell-offs to be higher when the company or subsidiary unit performance is performing poorly. Chen and Guo (2005) found that companies with a low cash flow ratio may be encouraged to sell off units that are underperforming.

#### 2.3 Gearing and Financial Distress

There is a fair amount of consensus in literature in support of the view that companies with high levels of debt and financial distress would opt for sell-offs rather than spin-offs as a form of divesture. The reason for their preference is that, unlike spin-offs, sell-offs generate liquid assets

which can be used to settle debts. Steiner (1997) and Chen and Guo (2005), found evidence that companies in financial distress and with high leverage will be more likely to sell-off assets as a form of divesture. This finding is supported by Ling-li and Hua-ming's (2012) for companies in China. Chen and Guo (2005) made use of the debt to equity ratio, as a measure of gearing whereas Steiner (1997) made use of the long-term debt to total assets ratio; both studies suggest that companies with higher debt ratios may have a high probability of choosing a sell-off rather than spin-off as a form of divesture. Whilst there is a fair amount of consensus in literature in support of the view that companies with high levels of debt would opt for sell-offs rather than spin-offs as a form of divesture, there are exceptions. Johnson, Klein and Thibodeaux (1996) found evidence of companies with high leverage preferring spin-offs to sell-offs. A high degree of debt, according to Nixon et al (2000) does not necessarily mean a company is under financial distress.

#### 2.4 Size of the unit and parent

The size of the divesting company and that of the unit to be divested play a major role in determining the choice of divestiture method. Chen and Guo (2005) found that where large units are considered for divestment companies tend to favour spin-off as a method of divestment where management regards them as potentially independent of the core business.

#### 2.5 Corporate governance

Corporate governance factors such as the number of directors on board, whether the CEO is also the board chair and the level of director's equity ownership in the company may play a significant role in the choosing a divestiture type. Jensen (1993), Steiner (1997) and Nixon et al (2000) argue that small board sizes, separating the offices of CEO and board chair and a high level of director equity ownership are positively related to spin-offs. In contrast, Bergh and Sharp (2012) find no support for the CEO/board chair office variable being influential. Management with low equity ownership may have preference for sell-offs since they provide potential for discretionary cash. Managers not aligned with shareholders may misuse the cash as suggested by Jensen (1986).

#### 3. Data and methodology

#### 3.2 Data

#### 3.2.1 Sample

The sample is made up of divestiture transactions that happened over the period from 1995-2013 for companies listed on the Johannesburg Stock Exchange (JSE). The transactions were extracted from McGregor BFA database with cross-references made to the Bloomberg database to ensure completeness of the sample. The initial sample consisted of 483 transactions and these were reduced to a final sample of 144 transactions after taking into account the following criteria; companies with any evidence of regulatory/political influence on the divestiture decision, based on announcements and news on the Stock Exchange News Service (SENS), were eliminated from the sample; Companies that had unverifiable completion status of transactions and payment type were also eliminated; Only voluntary were selected

Year/Type	Spin-offs	Sell-offs	Total
1995-1997	5	5	10
1998-2001	25	25	50
2002-2005	8	19	27
2006-2009	13	14	27
2010-2013	12	18	30
Total	63	81	144

 Table 1: Number of divestiture transactions since 1995-2013

## 3.2.2 Dependent variable

The dependent variable is a dummy variable, *type*, which is coded 1 for a sell-off and 0 for a spin-off.

## 3.2.3 Independent variables

### Performance of the parent company

In measuring a company's pre-divestiture performance, several variables are considered. To measure operating performance, we use operating profit margin and book values of debt to assets ratio as used by Steiner (1997) and Nixon et al (2000). Operating profit margin is calculated by dividing operating income by net sales of the year prior to the divestiture. This study's measure of market performance is the return on equity (ROE) calculated as net income divided by book value of shareholders' equity.

## Financial leverage and distress

Consistent with the approach by Nixon et al (2000), the study examines financial leverage and the need for cash. As a measure of financial distress, the interest coverage ratio, calculated as Earnings before Interest and Tax (EBIT) divided by interest expense is used. A company is classified as distressed if the interest cover ratio is less than one. Other proxy measures used include debt to asset ratio, calculated as total debt divided by total assets. Capital expenditure requires cash generation for companies underperforming in the fiscal year prior to a divestiture. Therefore, we use the inputs given from Bloomberg database of the respective companies planned capital expenditure of the year preceding the divestiture as a cash need.

## Diversification level

The level of a company's diversification relates to the number of business lines it operates in. This study chose number of business segments as a proxy to represent this attribute. The number of business segments for each company for the year preceding the divestiture is acquired from the company's annual report. In addition, we use another measure of growth potential, Tobin's q, calculated as market value (enterprise value) of the company divided by book value of total assets.

## Size of the unit and divesting parent

In identifying the value of the unit divested, the study uses the value of the transaction as announced on company announcements and verified on Bloomberg database under *Mergers and Acquisitions*. For spin-offs that listed on the JSE, we use the initial market value of the unit by

multiplying the number of shares of the unit outstanding by the first closing price per share available on McGregor BFA. We also use the distributed shares value for spin-offs that were not listed. For sell-offs, the transaction value reported on company news and/or Bloomberg, is used as the size of the unit divested. To measure the parent market value before the divestiture, we use the enterprise value of the previous year before divesting was calculated as; the market capitalisation plus long term and short term debt plus preference shares less cash.

#### Corporate Governance

Measures of corporate governance proxies include; director ownership of equity (Nixon et al 2000) and the number of directors on board of a divesting company; whether the office of the CEO is separate to that of the board chair; a variable called *CEO duality* was coded 1 if the CEO was also the chairman of the board and 0 if otherwise.

#### **3.3 Research Methods**

Firstly, the mean values for each of the independent variables are obtained for each of the divesture options chosen by companies within the sample. The difference between these mean values is identified and the statistical significance of these differences is tested using the standard t-test. Secondly, a logistic regression analysis is conducted to incorporate the dichotomous nature of the dependent variable, *type*, (sell-off = 1, spin-off = 0). In line with Nixon et al (2000) this study performs a logistic regression analysis to analyse whether differences between the variables are associated with the choice between sell-offs and spin-offs. It provides, for each variable in the equations below, a non-standardised coefficient that ranges from positive to negative infinity and is distributed as a z score. The coefficients represent the effect of each independent variable on the probability that a particular event will occur, in our case the probability that a given divestiture will take the form of a sell-off rather than a spin-off. A positive coefficient indicates that an increase in the independent variable is associated with a lower probability of sell-off.

In addition, marginal effects are determined for each individual independent variable as a function of the other independent variables in a model. This is due to the limitation of the magnitude of logistic regression coefficients to be direct indicators of the per unit increase of independent variable. They are calculated using post estimation command in Stata with all variables held at their mean value. Model parameters are reflected in the Cox and Snell  $R^2$  that range from 0 to 1.

The following six empirical models are estimated and include: **Model 1:** Prob (Sell-off<sub>t</sub>) =  $F_{t-1}$  (OPM, D, SEG, OD, TA)

Where:

- OPM = Operating Profit Margin,
- D = Distress,
- SEG = segments,
- OD = Director Ownership,
- TA = Total Assets

# Model 2:

Prob (Sell-off<sub>t</sub>) =  $F_{t-1}$  (OPM, D, SEG, OD, ROE, S)

Where:

- OPM = Operating Profit Margin,
- D = Distress,
- SEG = segments,
- ROE = Return on Equity
- S = Size Proportion

# Model 3:

Prob (Sell-off<sub>t</sub>) =  $F_{t-1}$  (OPM, D, SEG, OD, ROE, S, CF)

Where:

- OPM = Operating Profit Margin,
- D = Distress,
- SEG = segments,
- OD = Director Ownership,
- ROE = Return on Equity
- S = Size Proportion
- CF=Cash Flow

# Model 4:

Prob (Sell-off<sub>t</sub>) =  $F_{t-1}$  (OPM, D, SEG, US, EV, BS)

Where:

- OPM = Operating Profit Margin,
- D = Distress,
- SEG = segments,
- US=Unit Size,
- EV=Parent Enterprise Value
- BS=Board Size

## Model 5:

Prob (Sell-off<sub>t</sub>) = F<sub>t-1</sub> (OPM, D, SEG,UNIT, EV, BOARD, CEO)

Where:

- OPM = Operating Profit Margin,
- D = Distress,
- SEG = segments,
- US=Unit Size,
- EV=Parent Enterprise Value
- BS=Board Size
- CEO=Chief Executive Officer

## Model 6:

Prob (Sell-off<sub>t</sub>) =  $F_{t-1}$  (OPM, D, SEG, OD, ROE, SIZE, CAPEX, US, EV)

Where:

- OPM = Operating Profit Margin,
- D = Distress,
- SEG = segments,
- OD = Director Ownership,
- ROE = Return on Equity
- US=Unit Size,
- CAPEX = Capital Expenditure
- US=Unit Size,
- EV=Parent Enterprise Value

## 4. Empirical results and discussion

This section describes the various empirical tests performed in this study and presents the results mostly in form of tables with the respective proportions and coefficients resulting from both mean comparison t-test and logistic regression analysis.

## Summary statistics of mean comparison t-test

Table 2 contains variables suggested by Steiner (1997) while Table 3 contains additional variables suggested by by Nixon et al (2000) and Chen and Guo (2005). The study also includes proxies for size of the parent company (enterprise value) and Debt to total assets in Table 3

Of the variables listed in table 2, the mean difference between the Debt/Equity ratio for companies opting for sell-off rather than spin-off as a means of divesture is significant at the 5% level. Similarly, the mean difference between the Book Values of Total Assets for companies opting for sell-off rather than spin-off as a means of divesture is significant at the 5% level. The mean difference between the number of business segments in companies opting for sell-off rather than spin-off as a means of divesture is significant at the 10% level.

 Table 2
 Summary statistics for financial performance, financial leverage, number of business segments, and director ownership for 63 spin-offs and 81 sell-offs from 1995-2013 in South Africa

Variable description	Spin-off mean	Sell-off mean	Mean Difference	p-value
Operating profit margin	14.42	17.11	-2.68	0.660
Debt to asset ratio	12.97	17.54	-4.57	0.017**
Book value of total assets (R millions)	29959.69	68172.77	-38213.08	0.040**
Director ownership	13.93	11.94	1.99	0.271
Director ownership squared	543.60	535.73	7.87	0.487
Square root of director ownership	2.75	2.54	0.21	0.306
Number of business segments	4.59	5.05	-0.46	0.094*

\*Significant at the 10% level

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\*\*Significant at the 5% level

The mean difference between the Operating Profit Margins and Director Ownership for companies opting for sell-off rather than spin-off as a means of divesture is not statistically significant.

Table 3 contains mean, median and proportions values for additional variables introduced by Nixon et al (2000) and Chen and Guo (2005). The mean difference between Interest cover for companies opting for sell-off rather than spin-off as a means of divesture is statistically significant at the 10% level. This suggests that companies engaged in sell-offs, on average, have a greater need for cash than companies opting for spin-off as a form of divesture. This is potentially due to these companies having difficulty meeting interest expense with their operating earnings. The analysis fails to reject hypothesis 2.

Variable description	Spin-off	Sell-off	Mean Difference	p-value
	mean	mean		
Interest cover	10.36	-12.25	22.61	0.094*
Distress: Interest cover<1	0.27	0.38	-0.11	0.076*
Cash flow ratio	1.97	1.15	0.82	0.133
Gearing : Debt to Equity	39.51	50.67	-11.16	0.084*
Capital expenditure in RMillions	878.3	2596.2	-1717.9	0.023**
Size: Unit as a proportion of parent >1%	0.90	0.77	0.13	0.011**
Return on Equity	14.16	22.09	-7.93	0.040**
Enterprise value of parent (RMillions)	29990.76	63383.24	-33392.5	0.044**
Market value of unit (RMillions)	20171.41	1150.06	19021.35	0.121
Board size: no of directors	11.05	11.80	-0.75	0.130
CEO office separate with board chair	0.13	0.11	0.02	0.613
Number of business segments	4.59	5.05	-0.46	0.094*

**Table 3** Summary statistics for additional variables in the choice of divestiture type for 63 spin-offs and 81 sell-offs from 1995-2013 in South Africa

\*Significant at the 10% level \*\*Significant at the 5% level

Alternatively, using an indicator variable, distress is equal to one if the interest cover is less than unity and zero otherwise. The difference is significant at 10% level with a p-value of 0.076. The relationship between distress and probability of choosing a spin-off instead of a sell-off is negative providing evidence and support to Steiner (1997).

Chen and Guo's (2005) measure of the mean difference between gearing (Debt to Equity ratio) for companies opting for sell-off rather than spin-off as a means of divesture is also significant at the 10% level (p-value=0.084). This indicates that companies that are highly indebted relative equity in their capital structure, have preference for sell-offs in order to generate cash to meet their debt obligations.

The measure of the mean difference between Capital Expenditure for companies opting for sell-off rather than spin-off as a means of divesture is also significant at the 5%, suggesting that companies that have high planned capital expenditure in the pre-divestment year, prefer to sell-off assets to fund the capital need. This supports the suggestion by Chen and Guo (2005) that capital expenditure as a key factor in divestiture choice.

The measure of the mean difference between ROE for companies opting for sell-off rather than spin-off as a means of divesture is also significant at the 5% level (p-value=0.040). This is consistent with companies preferring to sell-off assets when the return on shareholders' equity is good, in order to generate excess cash for distribution or growth of the company.

When looking at the size of the unit being divested as a proportion of size of the parent company, the measure of the mean difference for companies opting for sell-off rather than spin-off as a means of divesture is statistically significant at the 5% (p-value of 0.011). This infers that companies prefer the spin-off option as a means of divesture. This may be associated with a minimum required size of a unit in order to be independent from the parent.

For the impact of the size of the parent company on the choice between spin-off and sell-off as a means of divesture, the analysis shows that the measure of the mean difference for companies opting for sell-off rather than spin-off as a means of divesture is statistically significant at the 5% (p-value=0.044). This indicates a preference for large companies to sell-off relative to spin-off when considering divesture. This can be attributed to the desire by management to focus on core businesses in an attempt to unlock and maximize shareholder value.

When looking at the cash flow ratio used by Chen and Guo (2005) as a measure of performance, the measure of the mean difference for companies opting for sell-off rather than spin-off as a means of divesture is not statistically significant (p-value=0.133).

Similarly, when looking at the market value of the unit divested as a measure if the impact of the size of the parent company on the divesture decision, the mean difference for companies opting for sell-off rather than spin-off as a means of divesture is not statistically significant (p-value=0.121)

The analysis shows that the mean difference for all proxies used to represent corporate governance i.e. the board size and the separation of the CEO office and the board chair role, are not statistically significant.

Whilst the mean comparison *t-test* conducted offers some explanation for possible determinants of a divestiture type, in an attempt to enhance the robustness of the analysis, this study also considered a logistic regression analysis on all the variables using the models 1 to 6 as defined earlier. The outcome of this analysis is discussed in the next section.

### Choice between spin-offs and sell-offs using logit regression analysis

A logistic regression analysis was conducted using the models defined earlier in this paper. Regression coefficient estimates and *t-values* are reported in Table 4 under the respective models labelled 1 to 6. This method is similar to the one used by Nixon et al (2000).

#### **Model 1:** Prob (Sell-off<sub>t</sub>) = $F_{t-1}$ (OPM, D, SEG, OD, TA)

In Model 1, the distress variable replaces the leverage ratio of debt to assets. The distress variable is significant at the 10 percent level (p-value=0.093). The marginal effect at the mean given in square brackets indicates that financially distressed companies that divest are 15.5% more likely to sell-off assets than to spin-off assets. The analysis shows that all other variables used in model 1 do not yield any statistically significant measure.

#### **Model 2:** Prob (Sell-off<sub>t</sub>) = $F_{t-1}$ (OPM, D, SEG, OD, ROE, S)

In Model 2, the statistical significance of the distress variable is significant at the 10 percent level (p-value=0.098). The marginal effect at the mean indicates that financially distressed companies that divest are 15.3% more likely to sell-off assets than to spin-off assets. The ROE coefficient is statistically significant at the 10% level (p-value=0.085). Companies with a high ROE prefer to sell-off relative to spin-off. Companies with a high shareholder return are 0.3% more likely to sell-off assets than to spin-off assets. The size proportion expressed as a percentage of unit divested over parent enterprise value, replaces the natural logarithm of total asset value. It is significant at 10% level (p-value=0.086) with a negative coefficient (-0.896). The probability of a sell-off relative to a spin-off in relation to unit size is negative suggesting that managers choose to spin-off assets that are large, probably due to the need to have the unit independent. The marginal effect at the mean indicates that companies wishing to divest assets that are large are 20.2% more likely to choose the spin-off option than they are the sell-off option. The analysis shows that all other variables used in model 2 do not yield any statistically significant measure.

#### **Model 3:** Prob (Sell-off<sub>t</sub>) = $F_{t-1}$ (OPM, D, SEG, OD, ROE, S, CF)

In Model 3 the statistical significance of distress variable is significant at the 10 percent level (p-value=0.075). The marginal effect at the mean indicates that financially distressed companies that divest are 16.1% more likely to sell-off assets than to spin-off assets. The ROE coefficient is statistically significant at the 10% level (p-value=0.099). Companies with a high ROE prefer to selloff relative to spin-off. The marginal effect at the mean indicates that companies with a high shareholder return are 0.3% more likely to sell-off assets than to spin-off assets. The size proportion expressed as a percentage of unit divested over parent enterprise value is significant at 10% level (pvalue=0.093) with a negative coefficient (-0.868). The probability of a sell-off relative to a spin-off in relation to unit size is negative suggesting that managers choose to spin-off assets that are large, probably due to the need to have the unit independent. The marginal effect at the mean indicates that companies wishing to divest assets that are large are 19.4% more likely to choose the spin-off option than they are the sell-off option. The cash flow ratio as a measure of operating performance replaces the operating profit margin. Although the coefficient estimate is negative (-0.062) indicating companies prefer spin-offs when the cash flow ratio is good, it is not statistically significant (pvalue=0.238). The analysis shows that all other variables used in model 3 do not yield any statistically significant measure.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-1.106	0.212	0.146	1.068	-0.741	-1.785
	0.166	0.775	0.839	0.111	0.354	0.161
Operating profit	0.003	0.001	-	-	0.003	0.004
margin	(0.545)	(0.809)			(0.496)	(0.527)
	[0.0007]	[0.0002]			[0.000]	[0.001]
Distress	0.658	0.679	0.7189	0.730	0.791	1.122
	(0.093)	(0.098)	(0.075)	(0.060)	(0.059)	(0.013)
	[0.155]	[0.153]	[0.161]	[0.159]	[0.165]	[0.221]
No of business	0.063	0.089	0.1083	0.078	0.019	-0.018
segments	(0.496)	0.290	0.207	0.390	0.848	0.860
	[0.015]	0.020	0.0242	0.017	0.004	-0.004
Director ownership	-0.003	-0.004	-0.0039	-	-	0.000
	(0.713)	(0.637)	(0.671)	-		(0.979)

Table 4 Logit analysis of probability that divestitures occurred through sell-off relative to spin-off

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	[-0.0008]	[-0.001]	[-0.000]			[0.000]
Ln Total asset book	0.098	-	-	-		-
value	(0.297)					
	[0.0229]				-	
Return on Equity	-	0.014	0.0127	-	-	0.013
		(0.085)	(0.099)			(0.105)
		[0.003]	[0.003]			[0.003]
Size proportion	-	-0.896	-0.8681	-	-	1.412
		(0.086)	(0.093)			(0.074)
		[-0.202]	[-0.194]			[0.062]
Cash flow ratio	-	-	-0.0624	-	-	-
			(0.238)			
			[-0.014]			
Capital expenditure	-	-	-	0.0001	-	0.000
				(0.047)		(0.108)
				[0.000]		[0.000]
Ln(unit market value)	-	-	-	-0.2667	-0.434	-0.609
				(0.004)	(0.000)	(0.000)
				[-0.058]	[-0.091]	[-0.120]
Ln(parent enterprise	-	-	-	-	0.344	0.444
value)					(0.007)	(0.007)
					[0.072]	[0.089]
Board size	-	-	-	-	0.026	-
					(0.667)	
					[0.006]	
CEO & Chair	-	-	-	-	0.114	-
					(0.842)	
					[0.024]	
CHI <sup>2</sup>	0.2877		0.0343	0.0014	0.0015	0.0002
Pseudo R <sup>2</sup>	0.0314	0.0636	0.0689	0.0899	0.1182	0.1599

This table reports the estimated coefficients and p-values in parentheses for logit regressions that measure the likelihood of divesting through a sell-off relative to a spin-off. It includes 63 spin-offs and 81 sell-offs during 1995-2013. The marginal effects at the mean are in square brackets (change in probability with respect to change in the independent variable, dP/dX) of each independent variable.

**Model 4:** Prob (Sell-off<sub>t</sub>) =  $F_{t-1}$  (OPM, D, SEG, US, EV, BS)

In Model 4 the statistical significance of distress variable is significant at the 10 percent level (p-value=0.060). The marginal effect at the mean indicates that financially distressed companies that divest are 15.9% more likely to sell-off assets than to spin-off assets. The ROE coefficient is statistically significant at the 10% level (p-value=0.099). Companies with a high ROE prefer to sell-off relative to spin-off. The marginal effect at the mean indicates that companies with a good shareholder return are 0.3% more likely to sell-off assets than to spin-off assets. The coefficient estimates for the unit market value and the capital expenditure for the divesting company are both statistically significant at 5% and 10% levels respectively. The capital expenditure need requires cash generation in order to sustain the company and hence the coefficient estimate has a positive relation to a sell-off albeit small. The coefficient estimate for unit size is negative (-0.267) and the probability of a sell-off decreases by 5.8% as the unit size increases relative to a spin-off. For large units it is better to divest through a spin-off due to their ability to stand alone. This also may support the

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minimal size requirement for a unit to be independent. The analysis shows that all other variables used in model 4 do not yield any statistically significant measure.

**Model 5:** Prob (Sell-off<sub>t</sub>) =  $F_{t-1}$  (OPM, D, SEG, UNIT, EV, BOARD, CEO)

The statistical significance of the distress variable is significant at the 10 percent level (p-value=0.059). The marginal effect at the mean indicates that financially distressed companies that divest are 16.5% more likely to sell-off assets than to spin-off assets. The coefficient estimate for unit size is negative (-0.434) and the probability of a sell-off decreases marginally by 9.1% as the unit size increases relative to a spin-off. Model 5 incorporates divesting company enterprise value, unit market value and corporate governance variables. Companies with a larger market value as measured by the natural logarithm of enterprise value prior to divestiture are more likely to sell off than spin-off as indicated by the positive coefficient estimate (0.344). The statistical significance of the market enterprise value variable is significant at the 5 % level (p-value=0.007). The marginal effect at the mean indicates that companies with larger market value larger market value that divest are 7.2%% more likely to sell-off assets than to spin-off assets.

According to Jensen (1993), a small board size and a CEO as board chair is an indicator of a strong internal control structure. The inclusion of proxy measures of strength of internal control structure, in model 5, as used by Nixon et al (2000:286), does not yield significant values. The analysis shows that all other variables used in model 5 do not yield any statistically significant measure.

#### **Model 6:** Prob (Sell-off<sub>t</sub>) = $F_{t-1}$ (OPM, D, SEG, OD, ROE, SIZE, CAPEX, US, EV)

Model 6 includes all the alternative proxy variables that were statistically significant from Model 1 to Model 5. The measure of financial distress, statistically significant at the 5% level (p-value=0.013), continues to be associated with the choice to sell-offs. The marginal effect at the mean indicates that financially distressed companies that divest are 22.1%, much higher than that in model 5. The coefficient estimate for unit size is negative (-0.609) and the probability of a sell-off decreases marginally by 12.0% as the unit size increases relative to a spin-off. Model 6 finds that the size proportion is associated with a sell-off rather than spin-off as in previous models. The parent market value is statistically significant at the 5% significance level (p-value=0.007). The marginal effect at the mean indicates that companies with larger market value larger market value that divest are 8.9%% more likely to sell-off assets than to spin-off assets. The analysis shows that all other variables used in model 6 do not yield any statistically significant measure.

#### 5. Summary and conclusion

Spin-offs and sells-offs alternative methods of divesting assets. This study investigates the determinants of the choice between the two divestiture methods in South Africa. A sample of 144 divestiture transactions between 1995 and 2013 was used. The study incorporates two methodologies, logistic regressions and univariate tests which all provide consistent results. The results of the study indicate that companies in financial distress, with high capital expenditure, high leverage and with a high market return choose to divest through a sell-off. This supports the suggestion that companies in need of cash prefer to sell-off to meet these needs. Large parent companies and companies with a large number of business segments also choose to sell-off as a form of divesture. This suggests a preference to sell non-core assets and focus on specific business lines. Spin-offs are preferred if the unit size is large and performing well. This suggests that the choice to

spin-off maybe considered if a unit is large enough to be independent and enables the parent company to share in the success of the divested portion of the business. This study does not find empirical evidence supporting the notion that the corporate governance factors are significant determinants of the choice of divestiture method in South Africa.

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