Financial analysis of the South African life insurance sector – An empirical decomposition of economic value added

Paul Alagidede*
WITS Business School

Takalani Mangenge#
WITS Business School

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Abstract

This article examines the determinants of economic value added (EVA) in insurance industries. It addresses the key components of EVA, the value drivers that are more important in managing economic value and the combination of these value drivers that best explain EVA as a group. The study covers the life insurance sector in South Africa, specifically focusing on the big five companies: Discovery Holdings, Liberty Holdings, MMI Holdings, Old Mutual plc, and Sanlam Ltd for the period 2004-2014. Variance and principal component analyses are used to identify the main drivers of EVA. Five main drivers were prominent, namely: underwriting, asset management, costs, opportunity cost and strategic investments. The implications of the results for best practice in the insurance industry are discussed.

Keywords

Economic Value Added; Performance Metrics; Life Insurance; Principal Components Analysis; South Africa.

***Prof P Alagidede** is professor at the Wits Business School, University of the Witwatersrand, Johannesburg, South Africa [paul.alagidede@wits.ac.za].

#Mr T Mangenge is a Masters student at the Wits Business School, University of the Witwatersrand, Johannesburg, South Africa.

1. INTRODUCTION

Corporate finance teaches us that companies are in business to generate and maximise value for their shareholders. Corporate managers are expected to make decisions that best create and maximise this shareholder value by focusing on capital budgeting, capital structure and working capital decisions. In capital budgeting, managers source and select the most valuable of projects for the company to embark on. In capital structuring, managers pick optimal mix of equity, debt and preference shares to finance selected projects. Lastly, managers manage working capital to ensure that the day-to-day operations of the company are smooth and value-adding.

Externally, shareholder value is best measured as returns an investor earns on a stock over a period of time (usually a year) – that is, appreciation of share price plus dividends. Internally, managers have traditionally used accounting metrics such as revenue, profits before interest and tax (PBIT), profits after interest and tax (NPAT), earnings per share (EPS), return on equity (RoE) and return on capital (RoC), net asset value (NAV), free cashflow (FCF) as their own internal measures of value created. Another internal measure of value currently enjoying the spotlight is the economic value added (EVA) metric. This metric entered the mix in 1991 when Bennett Stewart published his book *The Quest for Value*. The EVA gained its fame for two reasons: (1) it adjusts net profits for opportunity cost to the shareholder by deducting cost of capital employed in generating profits; (2) it proposes over 100 potential adjustments in an attempt to convert accounting figures into economic equivalents (Stewart, 1991).

Since its introduction in 1991, the EVA metric has had a mixed reception both in academia and the corporate world. A number of studies have demonstrated that the EVA is superior to traditional accounting metrics (Stewart, 1994; Lehn & Makhija, 1997; Lefkowitz, 1999; De Medeiros, 2005). But some have demonstrated the opposite, that EVA is not any superior to traditional accounting metrics (Biddle et al., 1997 and 1999; Ismail, 2006; Peterson & Peterson, 1996; Anastassis & Kyriazis, 2007).

Sharma and Kumar (2010) reviewed a total of 112 papers published between 1994 and 2008. They found that a large majority of papers (80 out of 112) were empirical and not theoretical in nature. In South Africa, over 15 articles were covered in the literature review and very few of these present evidence against EVA – with De Wet (2005) as the first article to do so. Hall (2002) assumed EVA's superiority as a starting point before dissecting EVA into "value drivers". Only a few sector-specific studies were undertaken – Geyser and Liebenberg (2003) examined EVA in agribusiness, Hall and Geyser (2004) examined EVA in agricultural co-ops context while De Wet (2005) examined a composition of 89 industrial companies.

Amongst many research gaps, Sharma and Kumar (2010) outlined two very important ones. The first gap stems from the fact that majority of studies cover developed countries – this presents an opportunity to undertake emerging markets studies. The second gap stems from the fact that the manufacturing sector is over-represented in EVA-related research – this presents a gap to undertake research in other sectors of the economy. In reviewing the literature, this study found the third main gap, which is methodological in nature. The third gap is that none of the articles reviewed as part of this study subjected EVA to robust empirical analysis—a weakness this study addresses by applying principal component analysis (PCA). An advanced statistical tool such as PCA allow us to identify the most important components/drivers, and thus helps corporate leadership to select the right metrics for managers to focus on and hence mitigate against potential agency problems.

The primary focus of this study is on the life insurance sector in South Africa as listed on the Johannesburg Securities Exchange (JSE). The life insurance sector is crucial because insurance companies make up 5.86% of the JSE All Share Index. In fact Old Mutual alone accounts for 2.76% of the JSE All Share Index. The life insurance sector also manages significant assets on behalf of policyholders. For example, in 2014 the life insurance sector had around R1.9 trillion assets under management. This makes the life insurance sector special in the context of the South African economy, and yet, to the best of our knowledge, we are unaware of any study that analyses the drivers of economic value in this sector of the economy (see PWC, 2014; IMF, 2015).

This study is similar to that by Hall (2002) in that it takes EVA's superiority as a starting point before dissecting EVA into 14 components, namely, net earned premiums, return on assets, total assets, fee and commission income, other income, net claims and benefits incurred, changes in contract liabilities, interest expense, acquisitions costs, general marketing and administration expenses, other items, income tax expense, cost of capital and capital employed. The study finds that these value drivers can be grouped into five clusters: underwriting, asset management, cost cluster, opportunity cost and strategic investments. For each cluster, managers have a couple of levers they can pull to generate shareholder value. Insights from top performers in the sector are that focusing on asset management, shareholder opportunity costs and profitable strategic investments could be the secret formula to shareholder value creation.

The rest of the article is organised as follows: section two presents a brief overview of the life insurance industry in South Africa; section three reviews the literature both in South Africa and globally. Section four presents a description of the data employed and how the variables are constructed for the study. The methodology is specified in section five and this is followed by a detailed analysis of each of the insurance companies and the entire insurance industry. Section six concludes the study by providing insights for best practice.

2. THE LIFE INSURANCE INDUSTRY: AN OVERVIEW

The insurance sector constitutes a very important component of the financial system in South Africa by virtue of the amount of premiums it collects, the scale of its investment and, more fundamentally, the essential social and economic role it plays in covering personal and business risks. Available data shows that in 2013, assets held by insurers accounted for nearly 23% of financial sector assets in South Africa. As at the end of 2013, there were 78 long-term insurers, 87 short-term insurers, 6 reinsurers and 11 captive insurers (excluding cell captive insurers) (see IMF, 2015). Life-based insurance contracts in South Africa, as in many other parts of the world, tend to fall into two major categories: a) protection policies – designed to provide a benefit, typically a lump sum payment, in the event of specified event and b) investment policies – where the main objective is to facilitate the growth of capital by regular or single premiums. There is a high degree of concentration in the long-term insurance sector. The top five conglomerates analysed in this article are the following: Discovery Holdings Limited (Discovery), Liberty Holdings Limited (Liberty), MMI Holdings Limited (MMI), Old Mutual plc (Old Mutual) and Sanlam Limited (Sanlam). These companies accounted for over 73% of total industry assets in 2013, while the short-term insurance industry, led by Absa Insurance Company Limited (Absa), Mutual and Federal Limited (M&F), OUTsurance Holdings Limited (OUTsurance), Santam Limited (Santam) and Zurich Insurance Company South Africa Limited (Zurich), are less concentrated. The insurance sector is adequately served by a wide range of intermediaries, with approximately 10,992 financial services providers (FSPs) as at March 31, 2014 (IMF, 2015). Thus the sheer size of the life insurance industry

in South Africa and the role of insurance in mitigating various types of risk call for a close examination of the industry. Missing in this very analysis is the components that drive economic value added to which this article addresses itself.

While the typical insurance industry in many African countries experiences low penetration of less than 1%, the South African market is generally very well developed. The South African market generates 90% of Africa's life insurance income (see Adewusi, 2015). As discussed in Beck et al. (2011), the embryonic state of many African insurance markets is linked to lack of regulatory oversight, including but not limited to consumer protection to develop viable insurance markets, the dominance of state-owned insurance companies, low incomes, monetary instability and weak contractual frameworks. Moreover, the insurance sector in many African countries is overwhelmingly dominated by non-life insurance business lines, such as automobile, health, and industrial insurance policies. This is largely driven by mandatory insurance schemes to mitigate the moral hazard associated with underinsurance.

3. LITERATURE REVIEW

3.1 EVA research in South Africa

Over the past 20 years (from 1994 to 2014), a considerable amount of research has been undertaken on EVA-related topics (for a recent survey of the literature see Sharma and Kumar 2010).

De Villiers (1997) is the earliest EVA-related study in South Africa. His paper studied the extent to which inflation distorts EVA. De Villiers (1997) finds that EVA cannot be used under inflationary conditions to estimate the actual profitability of a firm. He formulates an adjusted EVA (which he labelled AEVA), which he argued is better than plain EVA. Hall and Brummer (1999) intended to determine which internal performance measures of a company correlate the best with its external performance measure as represented by the MVA – MVA is the market value added, which is the sum of present value of all future expected EVAs. Hall and Brummer (1999) found "that the market value of a company best correlate[s] with the internal performance measurement Economic Value Added (EVA)". Hall and Brummer (1999) also touch on the issue of adjusting EVA for inflation.

Hall (2002) dissected EVA into components (value drivers) with the intention of identifying which of these value drivers contributed most to EVA. Hall (2002) observed that in the early stages of conscious value creation, income statements metrics are the strongest drivers of EVA, but as companies mature, balance sheet metrics dominate value creation. Our study is similar to that by Hall (2002) in that it takes EVA's superiority as a starting point before dissecting EVA into 14 components.

Geyser and Liebenberg (2003), as reviewed by Sharma and Kumar (2010), is the earliest sector-specific study in South Africa. Geyser and Liebenberg (2003) examined introducing EVA as a performance measure for agribusiness and co-ops in South Africa. Hall and Geyser (2004) then compared EVA against traditional measures of value for co-ops in South Africa. The most recent sector-specific study is that by Prinsloo (2010). Prinsloo (2010) did a comparative analysis of South African platinum producers in term of economic value added (EVA).

The study by De Wet (2005) was the first South African study to analyse EVA's superiority as a measure of shareholder value – as reviewed by Sharma and Kumar (2010). Contrary to Hall and Brummer's (1999) findings that EVA is the most correlated to MVA, De Wet (2005) suggested a

stronger relationship between cash flow and MVA instead. De Wet (2005) also "found very little correlation between MVA and EPS, or between MVA and DPS". De Wet and Du Toit (2007) exposed weaknesses inherent in both return on equity (RoE) and EVA and concluded that both are insignificantly correlated to shareholder returns but that of EVA is slightly superior to RoE. De Wet and Hall (2007) highlighted the importance of economic profits (EVA) and their long-term effects on shareholder value (MVA) for JSE-listed companies.

De Wet (2008) studied the effects of changes in company tax and secondary tax (STC) regimes on cost of capital and shareholder value. He finds that contrary to initial expectations, the introduction of STC (and lowering the company tax rate at the same time) did not decrease the cost of capital of South African organisations. The key point made by De Wet (2008) is that the relationship between value drivers and external economic environment factors such as legislation and tax is non-linear. Scenario-type analysis needs to be performed in order to correctly model the effects of changes in the outside environment.

De Wet (2012) examined the contentious issues of executive remuneration in South Africa by studying the relationship between executive pay and EVA/MVA and also between executive pay and RoE/RoA. He finds that though the relationship between executive pay and EVA/MVA is strong, it is relatively weaker than that between executive pay and RoE/RoA. Accordingly, De Wet (2012) recommended that South African companies modify their executive incentive schemes to align with the firm objective of creating and maximising shareholder value.

In more recent times, Makhele (2014) added an interesting perspective to the EVA versus accounting metrics debate. He compared EVA to EPS, RoC, RoA and RoE in measuring post-acquisition performance of acquiring firms in South Africa. Makhele (2014) finds that acquiring firms show marginal improvements when traditional measures are used but this value evaporates when cost of capital is factored in. Within the life insurance sector in South Africa, Metropolitan merged with Momentum to form MMI Holdings in December 2010. Contrary to the findings by Makhele (2014), MMI Holdings has consistently generated positive EVAs since the merger.

Despite all this coverage and the general feeling that EVA is superior and most suitable to align shareholder and management interest, EVA is rarely implemented in South Africa. A focus group discussion of financial experts established that South African companies will benefit from using EVA in conjunction with other metrics (see Van der Poll et al., 2011). This insight is consistent with Hall and Brummer's (1999) recommendation a decade earlier.

3.2 Insurance-specific EVA research globally

The review of South African literature above revealed that not a single study has been undertaken to focus on life insurance in the country. The situation is similar at a global level, with the majority of studies being manufacturing and industry-specific in nature (Sharma & Kumar, 2010).

One of the earliest articles on insurance is that by Skeunkel (1999), which is a case study of an American life insurance company, Protective Life. One of the fundamental questions addressed was "how can EVA be applied to a life insurance company?" Skeunkel (1999) found that there are three ways that EVA can be effectively used in a life insurance company, namely: (1) to assess the relative desirability of existing activities; (2) to assess new business ventures; (3) for compensation purposes. Skeunkel (1999) then moved on to focus on value drivers behind EVA. For this, he said that there are four general ways for a life insurance company to increase EVA if it decides to adopt it. The four general ways as outlined by Skeunkel (1999) are: (1) by increasing return on capital (RoC); (2) by deploying shareholder capital at a rate higher than cost of capital;

(3) by using less capital in businesses for which RoC is less than cost of capital; (4) by reducing the cost of capital.

Other early work on insurance EVA took the form of panel discussion papers published by the Society of Actuaries in the late 1990s. In fact, most of Skeunkel's (1999) insights were initially discussed at the Valuation Actuary Symposium hosted by the Society of Actuaries in 1996. At the 1998 panel, Erhardt (1998) said the following with regard to his experience interacting with insurance companies: "We're also beginning to see management compensation, (other than the standard stock options) tied to EVA". At the 1998 symposium as well, Da Palo (1998) spoke of his personal experience implementing EVA at a mutual insurance company, The Guardian. Da Palo (1998) said the following regarding reasons as to why The Guardian wanted to implement EVA: "One reason is that, in today's world, we want to link part of senior management's compensation to the increasing value of the company, so we needed a viable way to measure it".

A common thread from this early coverage of EVA in the insurance sector is the use of EVA for compensation purposes. This way of designing incentive schemes has the potential to reduce the agency problem because shareholder and management interests are the same – increasing EVA. Insights from our paper can be used in a similar way – by linking the few important value drivers to compensation schemes.

In summary, the insurance sector is generally underrepresented both in developed countries and emerging markets. This could be because the insurance sector is unique in that products sold are long term in nature and hence profitability analysis is not straightforward. Another reason could be that since insurance is heavily regulated with a number of prescribed measures of value such as embedded value, researchers could be ignoring EVA in insurance. This underrepresentation, however, presents a good research area.

4. DATA AND METHODOLOGY

4.1 Data Description and Sources

This study analysed five (5) life insurance companies as listed on the Johannesburg Securities Exchange (JSE): Discovery Holdings Limited (Discovery), Liberty Holdings Limited (Liberty), MMI Holdings Limited (MMI), Old Mutual plc (Old Mutual), and Sanlam Limited (Sanlam). Discovery, Liberty and MMI have a 30 June year-end, while Old Mutual and Sanlam have 31 a December year-end. These five companies are publicly listed and accounted for about three-quarters of the assets of the insurance industry at the end of 2013 (IMF, 2015).

IFRS stands for International Financial Reporting Standards, which is designed to give companies a common business language across the globe. All companies covered in this study publish their IFRS financial statements, and this makes the figures comparable. IFRS 4 covers insurance contracts and came into effect 1 January 2005. This gives us at least 10 years' worth of data for each company except for MMI, which was formed in December 2010 after the merger of Metropolitan and Momentum. This is sufficient for the purposes of this study. All data used in this study was compiled from published annual financial statements. The annual financial statements of these five companies were accessed from their websites. There are a number of occasions where financial statements from previous years are restated in the subsequent years. In such situations, only restated numbers were captured in our database.

4.2 The Concept of EVA

The book *The Quest for Value*, by G. Bennett Stewart, introduced a new metric to measure the true economic value created by companies. The basic idea behind EVA is that shareholders incur an opportunity cost when they choose to invest in any given company. Investors could have invested in other companies of similar risk and potentially earn a better return. This opportunity cost is measured as the minimum required return that investors expect from a given company – the weighted average cost of capital. The EVA formula takes the following form:

EVA = NOPAT – Opportunity Cost = NOPAT – Capital Employed * Cost of Capital.

where:

- *NOPAT* - Net profits after tax but before financing costs. We adjust for financing costs to avoid double-counting the cost of debt by including in both profits and WACC components of the formula. This figure also excludes all non-operating items such as dividends and interest income from assets held outside the business.
- *Capital Employed (CE)* - This is the total amount of capital utilised in the company. This is a sum of equity and all interest-bearing debt instruments on the balance sheet (both long- and short-term).
- *Cost of Capital (CoC)* - This is the weighted cost of capital (WACC), which reflects a weighted mix of equity and debt investors in the company. The Capital Asset Pricing Model (CAPM) is used to calculate *Cost of Equity* (K_e) for companies in the life insurance sector. The study uses the six-month JIBAR (Johannesburg Interbank Rate) as a proxy for the Risk Free Rate in South Africa. 48 months' worth of daily returns prior to start of financial year is used to calculate beta for each company in this study. *Equity risk premium* – Biennially, PricewaterhouseCoopers (PwC) publishes Valuation Methodology Surveys covering Southern Africa. The document outlines industry practices and assumptions used in setting discount rates and risk premiums for valuation purposes. PwC (2012) stated that the historical returns approach is the most widely used in calculating equity risk premiums in Southern Africa. PwC (2012) used data from 1900 to 2012 to show that average real equity returns were 7.2% versus bonds real return of 1.8%. Using this insight, this study uses a constant equity risk premium of 5.4% (7.2%-1.8%). Cost of debt (K_d) is calculated as a percentage of actual interest payments during the year to total opening debt capital. Interest includes amounts paid for both long-term and short-term debt. A similar approach is used to calculate Cost of Preference shares (K_p). Data used for the calculations is available from the authors of the study upon request.

4.3 Components of EVA – the "value drivers"

At a very basic level, EVA can be broken down into three drivers, namely: Net Earnings or NOPAT, Cost of Capital and Capital Employed. This study took this breakdown of EVA a step further by splitting Earnings. In total, EVA was divided into fourteen (14) components:

(1) Net Earned Premiums; (2) Return on Assets; (3) Total Assets; (4) Fee and Commission Income; (5) Other Income; (6) Net Claims and Benefits Incurred; (7) Change in Contract Liabilities; (8) Interest Expense; (9) Acquisitions Costs; (10) General Marketing and Administration Expenses; (11) Other Items; (12) Income Tax Expense; (13) Cost of Capital; and (14) Capital Employed.

$$EVA = NEP + RoA*TA + FCI + OI - IE - NCBI - CCL - AC - GMAE - OI2 - Tax - CoC*CE \quad \textbf{(1)}$$

Before we move onto outlining the methodology, below is a high-level description of the components:

Net Earned Premiums (NEP) – is the net amount that remains after paying reinsurers. *Return on Assets (RoA)* – Total investment income divided by total Assets under Management (AuM). *Total Assets (TA)* – This is AuM. *Fee and Commission Income (FCI)* – Life insurers charge an asset management fee for managing third party and policyholder funds. They also earn commissions for financial advice to policyholders. *Other Income (OI)* – This is income that cannot be classified as Net Earned Premiums or Fee & Commission Income. *Net Claims and Benefits Incurred (NCBI)* – This is all claims and benefits paid/allocated to policyholders. *Change in Contract Liabilities (CCL)* – Changes in liabilities due to passage of time and changes in underlying assumptions. *Interest Expense (IE)* – This is total expense incurred in paying interest and coupons on debt instruments or incurred in repaying principal on maturing debt instruments. *Acquisitions Costs (AC)* – This is the sum of all direct costs incurred in writing life insurance policies for the year. *General Marketing and Administration Expenses (GMAE)* – Indirect operating expenses fall into this category. *Other Items (OI2)* – To make the financial statements as comparable as possible, a number of small items were grouped together under "Other Items". These items will not change study insights if they are listed as stand-alone components of EVA. *Income Tax Expense (Tax)* – This is the effective rand amount paid to tax revenue agencies for a particular year. *Cost of Capital (CoC)* – This is the weighted average cost of capital (WACC) rate for the company. *Capital Employed (CE)* – This is the sum of all debt, preference shares and equity employed by the company to earn EVA.

4.4 Outline of Methodology

Principal Components Analysis (PCA)

PCA is a dimension-reduction technique that uses powerful statistical techniques to reduce high-dimensional data down into a set of fewer linearly uncorrelated components (called principal components). PCA applies eigenvector statistics to compute these principal components. There are several methods for delimiting the components, but discussing these is beyond the scope of this paper. For an exhaustive discussion see Jolliffe (2002). In this paper principal components were computed one at a time as follows:

- The First Principal Component (PC1) is a linear combination of underlying variables that explain the maximum variation in observed data. This is the best linear combination of all possible linear combinations in explaining variation in the data. The equation for PC1 is of this form:

  $$PC1 = a1(NEP) + a2(RoA) + a3(TA) + a4(FCI) + \ldots + a14(CE)$$

  Basically, the coefficients a_i are selected such that PC1 explains maximum variation. This is however subject to a condition that the sum of squares of these coefficients equals 1. This constraint is necessary to make the answer unique.

- The Second Principal Component (PC2) is a linear combination that explains most of the remaining variation after PC1. Equation for PC2 takes the following form:

  $$PC2 = b_1(NEP) + b_2(RoA) + b_3(TA) + b_4(FCI) + \ldots + b_{14}(CE)$$

Because we are trying to discover new dimensions (like new axes), correlation between PC2 and PC1 must be zero. To achieve this, two conditions are imposed on coefficients b_i. Coefficients are selected such that their sum of squares equals 1 plus correlation between PC1 and PC2 equals 0.

- The Third and Subsequent Principal Components (PC3, PC4, etc.) – their equations take a form similar to PC1 and PC2 and conditions are imposed on the coefficients such that their sums of squares equal 1 while ensuring the new principal component has a correlation of 0 with all principal components already computed.
- This is repeated until a pre-determined percentage of observed variation (say 95%) is explained by these principal components or until contradictory results emerge. Each principal component has an eigenvalue. The number of required principal components is determined by adding principal components until percentage cumulative eigenvalues to total eigenvalue of all principal components exceeds threshold.

The resulting principal components are viewed as the new reduced dimensions of the observed data. Interpretations of principal component equations depend on the computation methodology used. There are two methodologies, covariance and correlation matrix: (1) The covariance matrix method works well when variables are measured in same units (say km/h) and values are closer to each other. It works well if all measurements are measured in millions instead of some units being in millions while others are in hundreds. This method uses the covariance of the underlying variables to compute the eigenvalues of principal components and the coefficients of equations. Correlation coefficients between underlying variables and computed principal components are calculated and then used to interpret the equations. (2) The correlation matrix method works well for variables measured in different units. Variables are standardised by subtracting mean values before dividing by standard deviation. A correlation matrix of these new standardised variables is used to compute eigenvalues and coefficients. Since the variables are standardised, the coefficients in the resulting PC equations are the same as the correlation coefficients of variables to principal components – so they are interpreted as they are.

For this study, principal component analysis is performed in three steps as outlined below:

- Step 1: Eigenvalue analysis of the correlation matrix. TABLE 4 contains three outputs:
  - eigenvalues for each PC,
  - portion of total variation a particular PC explains,
  - and cumulative variation explained by all PCs.
- Step 2: Analysis of eigenvectors or components loadings. For PCs determined in Step 1 above, a table containing coefficients for each and every underlying variable is produced. For each PC, the top two or three are highlighted for interpretation (see TABLE 5).
- Step 3: Interpretation of variables displaying high coefficients for each PC.

In summary, this is how principal components analysis was applied to see which of the 14 value drivers are significant. PCA was performed at two levels in this study: at company and industry levels. This study used the correlation matrix method because RoA and CoC are measured in percentage while the rest of the variables are measured in R millions.

5. RESULTS, ANALYSIS AND DISCUSSION

Before the results of principal components are analysed and discussed, the study analysed basic descriptive statistics first – to explore central tendencies of the data. Below are the results of the descriptive statistics followed by principal component analysis:

5.1 Descriptive Statistics

TABLE 1 shows EVA broken down into value drivers for the life insurance industry as a whole. At industry level, the life insurance industry generated close to R3.7 billion in economic profits per year on average. This is significantly less than the R18.4 billion average IFRS profits generated per annum. This means that the opportunity cost for the life insurance industry is very high (measured as CoC*CE) at about R14.7 billion – 80% of profits were required just to cover shareholder opportunity cost.

TABLE 1 shows that Investment Income (INV), Net Claims and Benefits Incurred (NCBI), Capital Employed (CE) and Net Earned Premiums (NEP) are the biggest components of EVA. It will not be surprising to see these four value drivers dominate the principal components analysis in sections that follow. (Note: In some sections of this research paper, Investment Income is broken down into Return on Assets and Total Assets, because these two are significant drivers of EVA on their own.)

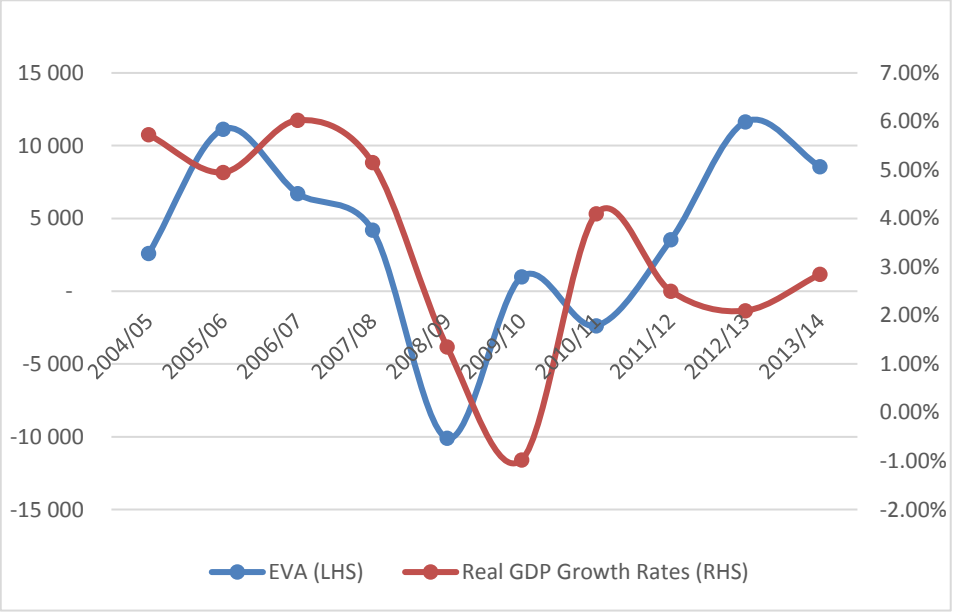

FIGURE 1: Industry EVA versus SA GDP growth rates for the past 10 years

Source: Statistics SA, authors' calculations

TABLE 1: Breakdown of total industry EVA into components

	EVA	NEP	INV	FCI	OI	NCBI	CCL	IE	AC	GMAE	OI2	Tax	CoC	CE
2013/14	8 561	133 345	229 975	30 057	5 705	185 715	100 356	1 779	19 597	48 776	7 973	10 729	10.6%	159 814
2012/13	11 643	132 481	220 024	24 433	3 528	171 755	99 225	1 799	19 130	40 185	8 255	11 507	9.9%	184 180
2011/12	3 540	113 906	121 474	21 123	2 956	110 040	59 641	2 011	16 564	35 322	6 305	8 516	11.1%	170 588
2010/11	-2 365	101 576	126 779	19 785	3 060	129 676	44 372	2 163	15 147	31 485	4 689	7 219	12.5%	162 705
2009/10	995	86 261	114 626	16 975	5 697	104 496	45 952	2 032	12 988	26 837	3 425	7 610	15.1%	136 641
2008/09	-10 200	69 868	9 510	13 407	-10 548	35 648	8 699	1 018	10 726	22 425	51	3 062	10.8%	107 242
2007/08	4 193	63 576	73 685	13 328	1 545	96 593	1 670	951	9 458	21 135	241	6 380	10.6%	115 556
2006/07	6 707	60 963	140 366	11 777	1 913	126 663	33 060	789	8 951	18 347	1 745	8 248	9.8%	113 143
2005/06	11 138	54 216	145 255	9 373	1 598	112 458	45 073	476	7 381	16 127	446	8 134	9.9%	96 901
2004/05	2 594	48 794	98 522	7 756	1 606	80 981	35 299	194	7 962	15 016	1 005	5 836	9.6%	82 556
Average	3 681	86 499	128 022	16 801	1 706	115 403	47 335	1 321	12 790	27 566	3 414	7 724	11.1%	132 933

Source: Authors' analysis

Notes: EVA – Economic Value Added; NEP – Net Earned Premiums; INV – Investment Income or RoA*TA; FCI – Fees & Commission Income; OI – Other Income; NCBI – Net Claims & Benefits Incurred; CCL – Changes in Contract Liabilities; IE – Interest Expense; AC – Acquisition Costs; GMAE – General Marketing & Administration Expenses; OI2 – Other Items; Tax – Corporate Income Tax; CoC – Cost of Capital; CE – Capital Employed.

Over time, industry EVA fluctuates between R10 billion loss and R12 billion economic profits. As expected, FIGURE 1 suggests that industry economic profits are related to overall economic growth in South Africa. It seems that the financial industry EVA leads country growth trajectory by about a year or so. The first potential explanation for this is that economic recessions are generally linked to financial crises in the economy – just like the 2007/08 financial crisis was followed by and linked to the 2008/09 recession. The second potential explanation is that because South Africa's financial sector is strongly linked to the global financial system as a whole, the financial crisis was transmitted from the US to South Africa through the financial sector. As a result, this sector suffered first before the crisis was fully transmitted to other sectors of the economy.

TABLE 2: Summary Statistics

Panel A: Measures of Central Tendencies

Variable	*Mean*	*Median*	*Minimum*	*Maximum*
Discovery	814.589	617.960	329.153	1653.93
Liberty	1064.300	896.288	-1005.890	2580.47
MMI	109.396	350.262	-1182.920	825.033
Old_Mutual	-1239.862	-547.718	-9510.470	4813.71
Sanlam	2986.920	2307.170	-212.166	9428.76
Industry	4896.600	3866.720	-2365.290	11643.5

Panel B: Measures of Dispersion

Variable	*Standard Deviation*	*Critical Values*	*Skewness*	*Excess Kurtosis*
Discovery	475.102	0.583242	0.642042	-1.01671
Liberty	1259.790	1.183690	-0.222871	-1.23017
MMI	800.508	7.317540	-0.89034	-0.612685
Old_Mutual	2842.240	118.88200	-0.0380684	-0.306665
Sanlam	2834.740	0.949049	1.10475	0.745987
Industry	4538.740	0.926918	0.153586	-0.992892

Source: Authors' analysis

TABLE 2 summarises the central tendencies and dispersion of EVA. It shows that the sector standard deviation is about R4.5 billion per annum. This means that the industry can swing a few billion rand in either direction and it is still business as usual.

Discovery – The only company *never* to post a negative EVA. Its lowest EVA was R329 million positive EVA in 2006. Discovery is also the most stable generator of EVA over time – standard deviation for Discovery is only R475 million a year.

MMI – Of all companies covered, MMI was the most skewed towards negative EVAs. This means that although its average EVA is positive, MMI was more likely to post an economic loss than post a gain for any particular year. (Note that the study used only five years' worth of data for MMI.)

Liberty – This company had the highest excess kurtosis in the study. This means that Liberty was likely to post economic profits in the tails (a large loss or a large gain) relative to normal distribution. It also means that Liberty often posts figures very close to its historical average.

Old Mutual – was the only company with negative average annum EVA of the five companies covered. It posted R1.2 billion average EVA over the last 10 years. Old Mutual also scored the lowest single-year EVA of R9.5 billion in 2010. This dismal performance by Old Mutual is partially because of the high cost of capital. The average cost of capital for Old Mutual was 13.1% versus the industry average of 11.1%.

Sanlam – generated the highest average EVA over the period at about R3 billion. It also generated the highest single-year EVA of R9.4 billion in 2005. On average, Sanlam and Old Mutual generate similar IFRS profits of R6.7 - R6.8 billion per annum. But Sanlam uses only 73% of Old Mutual capital at a lower cost of capital of 10.35% versus 13.1% of Old Mutual.

In summary, all companies in the life insurance industry display special features relative to each other. Old Mutual seems to be drifting sideways; Sanlam is generating excessive economic profits; Discovery creates its profits in the most stable fashion; MMI is inclined to post a negative EVA than normal; and Liberty is the most likely to surprise with a very high gain or a loss relative to normal and own history.

Next, the study looked at the correlation between variables (dependent included) to see if any of them are strongly associated. If two variables are strongly correlated, then one of them could be eliminated from analysis and still be well represented by the other variable. Apart from finding out which variables are strongly correlated, a correlation matrix helps in justifying application of PCA. TABLE 3 displays the correlation matrix for all variables and EVA.

The correlation matrix suggests that there could be clusters of value drivers in this data. One possible cluster is total operational costs, made up of Acquisition Costs, General Marketing and Administration Expenses Other Items. Another potential cluster is made up of Fees & Commission Income and Total Assets – this makes sense since asset management fees are levied on total assets under management. Net Claims & Benefits Incurred and Changes in Contract Liabilities could be another cluster – when a life insurer pays claims, it reduces both assets and liabilities. The two-tailed critical value at the 5% significance level is 0.6319. This means that though cost of capital and return on assets seem strongly correlated to EVA, their association with EVA is not very strong. This could be because of the way we split EVA. For example, when investment income (RoA*TA) is used instead of RoA and TA separately, the correlation coefficient is 0.64, implying a very strong relationship.

In summary, it seems a number of value drivers are strongly correlated to each other. This justifies application of dimension reduction techniques like PCA to reduce the number of variables down to few.

5.2 Principal Component Analysis

As outlined in the methodology section, PCA was performed in three steps. Step 1 shows analysis of eigenvalues, step 2 shows eigenvectors and step 3 interprets the results.

TABLE 3: Correlation matrix for EVA components

EVA	NEP	RoA	TA	FCI	OI	NCBI	CCL	IE	AC	GMAE	OI2	Tax	CoC	CE	
1	0.1839	0.5672	0.2205	0.1724	0.0025	0.5218	0.5157	-0.2531	0.1257	0.1908	0.2457	0.6334	-0.5985	0.0744	EVA
	1	-0.1689	0.9834	0.9759	0.7072	0.7154	0.8238	0.8324	0.9966	0.9803	0.9648	0.6978	0.1828	0.9492	NEP
		1	-0.1201	-0.1954	-0.0374	0.4816	0.3614	-0.377	-0.2079	-0.1824	0.053	0.5374	-0.3528	-0.1854	RoA
			1	0.9954	0.7498	0.7775	0.8267	0.8031	0.9782	0.9933	0.95	0.7329	0.1691	0.9118	TA
				1	0.7593	0.7332	0.7867	0.8089	0.9756	0.9962	0.9234	0.6734	0.197	0.8939	FCI
					1	0.5878	0.6714	0.7338	0.7204	0.7429	0.7096	0.5585	0.6159	0.614	OI
						1	0.8549	0.4565	0.6869	0.7231	0.8046	0.953	-0.0785	0.6689	NCBI
							1	0.5021	0.8064	0.8106	0.9094	0.8835	-0.0449	0.7064	CCL
								1	0.8384	0.7833	0.7611	0.4289	0.641	0.9035	IE
									1	0.981	0.9598	0.659	0.2075	0.9395	AC
										1	0.9347	0.6729	0.1561	0.8847	GMAE
											1	0.8079	0.1234	0.916	OI2
												1	-0.0914	0.6697	Tax
													1	0.2773	CoC
														1	CE

Source: Authors' calculations

*Abbreviations: EVA – Economic Value Added; NEP – Net Earned Premiums; INV – Investment Income or RoA*TA; FCI – Fees & Commission Income; OI – Other Income; NCBI – Net Claims & Benefits Incurred; CCL – Changes in Contract Liabilities; IE – Interest Expense; AC – Acquisition Costs; GMAE – General Marketing & Administration Expenses; OI2 – Other Items; Tax – Corporate Income Tax; CoC – Cost of Capital; CE – Capital Employed.*

Step 1: Eigenvalue analysis of Correlation Matrix

TABLE 4: Eigenvalues for Insurance companies

Component	*Eigenvalue*	*Proportion*	*Cumulative*
Panel A: Discovery			
1	10.4749	0.7482	0.7482
2	2.1100	0.1507	0.8989
3	0.8304	0.0593	0.9582
Panel B: Liberty			
1	7.8849	0.5632	0.5632
2	2.7822	0.1987	0.7619
3	1.7153	0.1225	0.8845
4	1.1310	0.0808	0.9652
Panel C: MMI			
1	11.6456	0.8318	0.8318
2	1.6901	0.1207	0.9525
Panel D: Old Mutual			
1	6.7274	0.4805	0.4805
2	3.6968	0.2641	0.7446
3	1.7231	0.1231	0.8677
4	0.7584	0.0542	0.9218
5	0.7199	0.0514	0.9733
Panel E: Sanlam			
1	7.9634	0.5688	0.5688
2	3.8535	0.2753	0.8441
3	0.9082	0.0649	0.9089
4	0.5941	0.0424	0.9514
Panel F: Total Industry			
1	9.9791	0.7128	0.7128
2	2.3779	0.1699	0.8826
3	1.0432	0.0745	0.9572

Source: Authors' analysis

Discovery: From TABLE 4 we see that the first principal component (PC1) explains 74.82% of variation. The second principal component (PC2) explains 15.07% while PC3 explains 5.93% of total variation. The top three principal components explain 95.82% – which is more than the 95% threshold. We will focus only on these three PC for steps 2 and 3 below.

Liberty: Unlike Discovery, we need 4 PCs to get to the 95% threshold for Liberty. PC1 explains just over 56%, PC2 explains just less than 20%, PC3 and PC4 together explain just over 20%. The top 4 PCs account for 96.52% of variation.

MMI: For MMI, only two PCs are enough to reach the 95% threshold. PC1 alone explains over 83% of total variation. PC2 explains over 12%.

Old Mutual: For Old Mutual, a total of five PCs are required to explain 95% of the variation in observed data. PC1 explains only 48.05% of total variation – this is the lowest of all companies covered in this study. Interestingly, PC2 accounts for 26.41% of total variation – this is the highest for all companies covered. PC3, PC4 and PC5 combined explained a little less than 23%. Sanlam: For Sanlam, four PCs are required to get to the 95% threshold for this study. PC1 explains 57% of observed variation in EVA. PC2 explains close to 30% on its own while PC3 and PC4 explain just over 10% of total variation. More attention is afforded PC1 and PC2. Industry: At aggregate life insurance industry level, only three PCs are required to explain more than 95% of observed variation in EVA. The first PC explains close to 72%, the second one explains 17%.

Step 2: Eigenvector (component loadings)

TABLE 5: Eigenvectors for insurance companies

VARIABLE	*PC1*	*PC2*	*PC3*	*PC4*	*PC5*
Panel A: Discovery					
NEP	0.309	0.008	-0.034		
RoA	-0.002	0.626	-0.257		
TA	0.307	0.048	0.09		
FCI	0.307	-0.048	0.001		
OI	0.308	0.012	-0.001		
NCBI	0.302	0.087	0.146		
CCL	0.276	-0.005	-0.447		
IE	0.262	0.010	0.398		
AC	0.307	0.043	-0.007		
GMAE	0.307	-0.015	0.055		
OI2	0.052	0.577	-0.326		
Tax	0.304	-0.099	0.026		
CoC	0.082	-0.500	-0.659		
CE	0.307	0.001	0.019		
Panel B: Liberty					

VARIABLE	PC1	PC2	PC3	PC4	PC5
NEP	0.338	-0.154	0.089	-0.105	
RoA	0.256	0.080	0.041	0.637	
TA	0.164	0.482	0.235	-0.191	
FCI	0.340	-0.089	-0.090	-0.080	
OI	0.257	-0.383	-0.026	-0.090	
NCBI	0.251	-0.366	-0.153	-0.177	
CCL	0.292	-0.201	0.173	-0.372	
IE	-0.142	-0.314	0.513	0.010	
AC	0.330	-0.207	0.04	-0.260	
GMAE	0.344	-0.012	-0.06	-0.199	
OI2	0.307	0.184	-0.182	-0.261	
Tax	0.306	0.032	0.174	0.334	
CoC	0.008	0.157	-0.704	0.177	
CE	0.165	0.455	0.211	-0.333	
Panel C: MMI					
NEP	0.286	0.119			
RoA	0.230	-0.384			
TA	0.290	0.078			
FCI	0.290	0.06			
OI	0.145	-0.579			
NCBI	0.282	0.177			
CCL	0.269	-0.216			
IE	-0.278	0.235			
AC	0.281	0.096			
GMAE	0.291	0.054			
OI2	0.290	0.084			
Tax	0.279	0.084			
CoC	-0.271	-0.222			
CE	0.220	0.49			
Panel D: Old Mutual					
NEP	0.358	0.048	0.087	0.304	-0.134
RoA	-0.185	0.444	-0.132	0.095	0.005
TA	0.361	0.146	0.114	0.077	0.102

VARIABLE	PC1	PC2	PC3	PC4	PC5
FCI	0.337	-0.074	0.037	-0.293	0.266
OI	0.117	-0.092	-0.675	-0.264	0.061
NCBI	-0.055	0.508	-0.034	0.094	0.033
CCL	0.091	0.467	-0.233	0.223	0.031
IE	0.337	0.016	0.119	-0.471	0.205
AC	0.352	0.085	0.129	0.218	0.087
GMAE	0.366	0.067	-0.089	0.214	-0.17
OI2	-0.014	0.344	0.075	-0.537	-0.671
Tax	-0.218	0.32	-0.073	-0.189	0.589
CoC	0.197	-0.111	-0.619	0.061	-0.121
CE	0.332	0.209	0.128	-0.187	0.061
Panel E: Sanlam					
NEP	0.344	-0.091	0.074	0.047	
RoA	-0.030	0.500	-0.026	-0.159	
TA	0.350	0.005	0.022	-0.086	
FCI	0.340	0.011	0.081	-0.194	
OI	0.027	0.372	0.388	0.706	
NCBI	0.232	0.370	-0.077	-0.199	
CCL	0.200	0.344	-0.098	0.128	
IE	0.295	-0.223	-0.145	0.296	
AC	0.338	-0.135	0.021	-0.025	
GMAE	0.345	-0.017	0.180	0.157	
OI2	0.147	-0.342	0.497	-0.236	
Tax	0.208	0.363	-0.120	-0.409	
CoC	0.197	-0.175	-0.706	0.249	
CE	0.352	0.008	0.084	0.084	
Panel F: Total Industry					
NEP	0.310	0.054	0.162		
RoA	-0.010	0.583	-0.403		
TA	0.312	0.022	0.120		
FCI	0.307	0.067	0.138		
OI	0.251	0.127	-0.467		
NCBI	0.256	-0.331	-0.128		

VARIABLE	PC1	PC2	PC3	PC4	PC5
CCL	0.275	-0.261	-0.053		
IE	0.262	0.312	-0.132		
AC	0.308	0.081	0.163		
GMAE	0.307	0.050	0.171		
OI2	0.309	-0.067	0.059		
Tax	0.249	-0.361	-0.156		
CoC	0.075	0.454	-0.654		
CE	0.294	-0.100	0.109		

Source: Authors' analysis

Notes: PC is principal component. Thus PC1 is first principal component

Step 3: Interpretation

Discovery: PC1 – NEP and OI are the top two variables. An increase in NEP together with an increase in OI has resulted in higher EVA for Discovery over the last 10 years. OI is mainly Vitality – so, interestingly, revenue from Vitality is a significant source of economic value for Discovery. PC2 – RoA and OI2 are the top two variables. When other life insurers posted negative returns for 2008, Discovery posted a positive return on assets. This return on assets has consistently increased since then, generating significant economic profits. OI2/Other Items include items such as forex, puttable non-controlling interest fair value adjustments, amortisation of intangibles from business combinations and other non-core items. PC3 – CoC and CCL are the top two variables. An increase in cost of capital is associated with an increase in contracts for Discovery. These two items have a dilutive effect on EVA. Discovery could improve its economic value generation by reducing CoC, which is likely to reduce CCL too. In summary, Discovery should focus on revenue generation by selling more policies for premiums through Vitality. They should continue to increase return on assets and employ more debt to further reduce their cost of capital. (Significant Value Drivers: NEP, OI, CoC, RoA, OI2, CoC and CCL.)

Liberty: PC1 – Fees and commission income (FCI) and general marketing and administration expenses (GMAE) are the top two variables. This implies that Liberty was able to sell more fees and commission-based products, and they were able to reduce their general cost-to-income ratio, resulting in EVA generation. PC2 – Assets under management (TA) and Capital Employed are the top two variables. Shifting product mix from capital heavy life insurance to capital light investment products increases asset management fees and reduces capital requirements for Liberty. So Liberty was able to earn more income for the same capital base and hence improved EVA. PC3 – Cost of capital is the most significant variable for PC3. The gradual increase in cost of capital has eroded EVA for Liberty. Using more debt will not be very helpful for Liberty, since its cost of debt is very high (averaging more than 11% over the last 10 years). Since this PC explains over 12% of total variation, it is important that Liberty finds innovative ways to reduce its cost of debt. PC4 – Return on Asset (RoA) is the most significant variable for PC4. Over and above increasing assets under management, Liberty has been able to earn good returns on assets. In summary, Liberty has been able to improve EVA by shifting its product mix from capital heavy to capital light products, which has allowed the company to be cost efficient. The one thing it could

focus on in future could be to find innovative ways to reduce cost of debt. (Significant Value Drivers: FCI, TA, CoC, and RoA.)

MMI: PC1 – Four variables score highly for PC1. As expected, total assets (TA) and fees and commission income (FCI) tend to move together because the majority of fees are levied on assets under management. MMI increased its return on assets from about 9.5% in 2010 to about 14% in 2014. At the same time MMI increased its total assets from R198 billion in 2010 to R414 billion in 2014 (over 20% CAGR). This has greatly contributed to MMI's economic profits. But as MMI increased fee-based income, general and other expenses went up as well – however, since fees income increased faster than expenses for MMI, the net effect has been a net increase in economic profits. PC2 – OI/Other Income is the only variable that is significant for PC2. For MMI, this item represents other comprehensive income, which includes items adjustment to Metropolitan Staff Pension Fund, Land & Building revaluations and exchange differences in translating foreign operations. It is a bit worrying that a large part of variation in EVA could be as a result of these non-operating items in the income statement. In summary, changes in MMI's economic profits have mainly been due to aggressive bulking up of assets under management and making good decisions in picking investments in the market. It is however worrying that some significant variation in EVA was due to below-the-line items such as land and building revaluation. (Significant Value Drivers: TA, FCI, OI2, and OI.)

Old Mutual: PC1 – TA and GMAE are the two most significant variables for PC1. Of all companies covered in this study, Old Mutual is the biggest in terms of assets under management, with close to R600 billion invested. Though Old Mutual generates significant economic value this way, general marketing and administration expenses tend to dilute some of this value. PC2 – NCBI and CCL are strongly associated with the second dimension for Old Mutual. NCBI and CCL are linked to each other in that, as Old Mutual pays out claims, its obligations to pay more claims in future diminish. PC2 is very important because it explains over a quarter of observed variation – this implies that economic value generated through investment income in the first dimension is further eroded when benefits are allocated to policyholders, leaving small residuals for shareholders. PC3 – OI/Other Income and CoC are the two variables strongly associated with the third dimension for Old Mutual. Other Income includes items listed under "other comprehensive income" such as property revaluation, available-for-sale investments, shadow accounting and other related items. To demonstrate how sensitive Old Mutual EVA is to OI, in 2009 Old Mutual managed to generate a marginal positive EVA after posting R3.7 billion in other comprehensive income. With regard to CoC, Old Mutual has the highest cost of equity of all companies covered in this study. This is eroding significant economic profits for shareholders. PC4 – OI2/Other Items is the only variable strongly associated with the fourth dimension for Old Mutual. The main item in OI2 is collateral held against the company's hedging/trading activities. Interestingly, this item is much bigger than interest on long-term debt. The question here is whether hedging activities are economically viable for Old Mutual if it is going to cost R500 million or so in economic value per annum. PC5 – OI2/Other Items features again in the fifth dimension. To avoid contradiction, PC5 is excluded from the analysis. In summary, Old Mutual is able to generate economic profits by charging asset management fees. But most of this value is eroded by operational expenses, allocation of returns to policyholders, cost of capital and collateral held against hedging activities. As a result, very little is left for shareholders. Old Mutual has resorted to other comprehensive income in the past to post a positive EVA. Over and above increasing assets under management, Old Mutual could improve economic profits by earning high RoA, or by reducing the cost of capital via issuing more debt, or by reducing the cost of holding collateral via shifting the mix towards investment products. (Significant Value Drivers: TA, GMAE, NCBI, CCL, OI, CoC and OI2.)

Sanlam: PC1 – Total assets under management (TA) and total capital employed (CE) are strongly associated with PC1. Though an increase in capital employed increases the rand cost of capital, this is not a problem for Sanlam, as investment income earned to assets under management is large enough. This is because Sanlam's product mix is skewed towards the investment type. PC2 – Return on assets under management is the only variable strongly associated with the second dimension for Sanlam. So over and above doubling assets under management over the last 10 years, Sanlam has also improved return on assets to levels only seen before the 2007/2008 financial crisis. Return on assets explains close to 30% of variation in economic profits for Sanlam, so this is an important focus area for the company. PC3 – Cost of Capital (CoC) is the only variable strongly associated with the third dimension. This dimension alone explains about 6.5% of observed variation. Sanlam's cost of capital has been on a general upward trend. This trend is eroding shareholder value. PC4 – OI/Other Income is the only variable strongly associated with the PC4. The main item included in OI is "equity-accounted investments", which is effectively Sanlam strategic investments such as Shriram Capital, Letshego, Pacific & Orient and Sanlam Personal Loans. Over the past 10 years, Sanlam generated an average R530 million earnings per annum from associates and joint ventures. This is considerable economic value for shareholders. In summary, Sanlam has been excellent in pulling a number of levers for value creation. It was able to double assets under management while improving return on investments. Though its cost of capital is on an upward trajectory, it is still relatively low at about 10% per annum. Sanlam also made good strategic investments in associates and joint ventures. (Significant Value Drivers: TA, CE, RoA, CoC and OI.)

Total Industry: PC1 – Six variables are strongly associated with the first dimension, but they can be grouped into four clusters. NEP is a cluster on its own and it represents the traditional business – selling policies to earn premium income. TA and FCI form the asset management cluster – creating economic profits by charging asset management fees and increasing assets under management base. AC and GMAE make up the third cluster and they represent cost management – closely managing cost-to-income ratios to create value. The fourth cluster is represented by OI2 – it seems there are a number of items in "other comprehensive income" section of South Africa life insurance companies that significantly affect economic profits. PC2 – Return on Assets is the only variable strongly associated with the second dimension at industry level. This dimension alone explains close to 17% of observed variation – making it an important focus area. Return on Assets adds another lever to the asset management cluster mentioned in PC1 – economic profits can also be generated by originating great investment opportunities in the marketplace. This is over and above the two levers, which are charging asset management fees and increasing assets under management. PC3 – Cost of Capital is the only variable strongly associated with the third dimension. Rising cost of capital for the industry as a whole is gradually eroding shareholder value. The financial crisis of 2007/2008 indirectly transmitted a shock to cost of equity through risk-free rates, and directly transmitted a shock to cost of debt funding. In times like these, it is rather difficult to reduce cost of capital – but cost of debt is generally lower than cost of equity, so employing a bit more of debt is a good idea as long as it doesn't create financial distress for the company. In summary, economic value drivers for life insurance companies can be categorised into few clusters, namely: (1) Traditional underwriting, where levers selling are profitable policies in a well-considered mix for premiums. (2) Asset management business, where the three main levers are charging asset management fees, increasing assets under management and asset origination. (3) Managing cost-to-income ratios. (4) Reducing cost of capital. (5) And managing once-off items under Other Income or Other Items.

4. SUMMARY AND CONCLUSIONS

The debate about EVA versus traditional measures is on-going and will continue long into the future. The general feeling from the literature is that EVA is superior to traditional accounting measures. Rather than adding to this broad debate, this study took EVA's superiority as a starting point and sought to analyse value drivers and their levers behind EVA instead.

Overall, we found that Net Earned Premiums, Assets under Management, Fees & Commission Income, Return on Assets, General Marketing & Administration Expenses, Acquisition Costs, Cost of Capital, and Other Income are the main value drivers. These value drivers can be grouped into five clusters. NEP is a cluster on its own and it represents the underwriting cluster. TA, FCI and RoA form the asset management cluster. AC and GMAE make the third cluster, and they represent the cost cluster. The fourth cluster is represented by COC – the opportunity cost cluster. Other Income represents the "strategic investment cluster". In the underwriting cluster, management can create value by designing, marketing and selling profitable life insurance products. Another lever here is to sell the right mix of capital-light and capital-heavy products. In the asset management cluster, management has three levers available to it, namely: (1) increasing assets under management, (2) charging asset management fees and fees income and (3) increasing return on investment by originating great investment opportunities. In the cost cluster, the company must manage its cost-to-income ratios and benchmark against peers. In the opportunity cost cluster, management can reduce the cost of capital by employing cheaper debt without exposing the company to financial distress risks. We saw that most life insurance companies earn some sort of "other comprehensive income". So in the strategic investment space, managers can create value by making value-adding investments in associates and joint ventures.

Sanlam proved to be the star performer of the life insurance sector over the past 10 years. Sanlam created value by focusing on three clusters. In the asset management space, it managed to double assets under management by selling more investment-type products while improving return on assets. In the opportunity cost, it was able to source cheaper debt versus sector average. On the strategic investments space, it has a number of profitable investments in associated companies and joint ventures.

The main implication for a company trying to improve shareholder value is that it should focus on the five clusters. For each cluster, management has two to three levers it can pull to generate value. Insights from analysing top performers in the sector are that focusing on asset management, the opportunity costs of shareholder and profitable strategic investments could be the secret formula to shareholder value creation.

LIST OF REFERENCES

Adewusi, A.A. (2015). African Life Insurance Industry: Overview and Prospects. *The African Reinsurer*, Number 27, p. 5. http://www.scor.com/en/sgrc/insurance-market/item/2615-african-life-insurance-industry-overview-and-prospects.html. (Accessed 10 January 2016).

Anastassis, C. & Kyriazis, D. (2007). The Validity of the Economic Value Added Approach: an Empirical Application. *European Financial Management*, 13, pp. 71-100.

Beck, T., Maimbo, S.M., Faye, I., & Triki, T. (2011). *Financing Africa: Through the Crisis and Beyond*. The World Bank. Washington.

Biddle, G.C., Bowen, M. R. & Wallace, J.S. (1997). Does EVA beat Earnings? - Evidence on Associations with Stock Returns and Firm Values. *Journal of Accounting and Economics*, 24, pp. 301-336.

Biddle, G.C. (1998). Economic Value Added: Some Empirical Evidence. *Managerial Finance*, 24, pp. 60-70.

Biddle, G. C., Bowen, M. R. & Wallace, J.S. (1999). Evidence on EVA. *Journal of Applied Corporate Finance*, 12, 69-79.

Da Palo, A.M. (1998). Using Value-Added Information in Practice. Discussion Paper, Valuation Actuary Symposium: *Society of Actuaries*, 24, pp. 1-27.

De Medeiros, R. O. (2005). Empirical evidence on the relationship between EVA and stock returns in Brazilian firms. Available: http://ssrn.com/abstract=701421. (Accessed 12 December 2014).

De Villiers, J. (1997). The distortions in economic value added (EVA) caused by inflation. *Journal of Economics and Business*, 49, pp. 285-300.

De Wet, J.H. (2005). EVA versus traditional accounting measures of performance as drivers of shareholder value – A comparative analysis. *Meditari Accountancy Research*, 13, pp. 1-16.

De Wet, J.H. & Hall, J.H. (2006). An analysis of strategic performance measures of companies Listed on JSE Securities Exchange South Africa. *South African Journal of Economic and Management Science*, 1, pp. 57-71.

De Wet, J.H. and Toit, E. (2007). Return on equity: A popular, but flawed measure of corporate financial Performance. *South Africa Journal of Business Management*, 38, pp. 59-69.

De Wet, J.H. (2008). Secondary Tax and its Effect on the Cost of Capital and Shareholder Value of South African JSE Listed Companies. *Acta Commerciii*. Available: http://www.ajol.info/index.php/sabr/article/viewFile/85467/75398. (Accessed 12 November 2014).

De Wet, J.H. (2012). Executive compensation and the EVA and MVA performance of South African listed companies. *Southern African Business Review*, 16, pp. 57-80.

Erhardt, K.R. (1998). Using Value-Added Information in Practice. Discussion Paper, Valuation Actuary Symposium: *Society of Actuaries*, 24, pp. 1-27.

Geyser, M. and Liebenberg, I. E. (2003). Creating a new valuation tool for South African agricultural co-operatives. *Agrekon*, 42, pp. 106-115.

Hall, J. H. and Brummer, M.L. (1999). The Relationship between the Market Value of a company and internal performance measurements. Available: http://ssrn.com/abstract=141189. (Accessed 20 November 2014).

Hall, J. H. (2002). Dissecting EVA: The value drivers determining the shareholders' value of Industrial Companies. Available: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=304196. (Accessed 12 December 2014).

Hall, J. H. and Geyser, J. M. (2004). The Financial Performance of Farming Co-Operatives: Economic Value Added vs. Traditional Measures. Available: http://ageconsearch.umn.edu/bitstream/18084/1/wp040002.pdf. (Accessed 12 December 2014).

IMF (2015). South Africa: financial sector assessment program. Detailed assessment of observance on the insurance core principles. IMF Country Report No. 15/56. https://www.imf.org/external/pubs/ft/scr/2015/cr1556.pdf. (Accessed 10 January 2016).

Ismail, A. (2006). Is EVA associated with stock return than accounting earnings? The UK evidence. *International Journal of Managerial Finance*, 2, pp. 343-353.

Jolliffe, I.T. (2002). *Principal Component Analysis*, *2nd edition*. Springer, New York

Lefkowitz, S.D. (1999). The Correlation between EVA and MVA of companies. MBA Dissertation, California State University.

Lehn, K. & Makhija, A. K. (1997). EVA, accounting profits, and CEO turnover: an empirical examination 1985-1994. *Journal of Applied Corporate Finance*, 10, pp. 90-96.

Makhele, A.T. (2014). The measurement of post-acquisition performance in RSA using economic value added (EVA). MBA Dissertation, Wits Business School.

Peterson, P. P. and Peterson, D.R. (1996). Company Performance and Measures of Value Added. The Research Foundation of the Institute of Chartered Financial Analysts, Charlottesville, VA.

Prinsloo, J.J. (2010). A comparative analysis economic value created by South African companies in a growing platinum industry. MBA Dissertation, University of Pretoria.

PricewaterhouseCoopers (2012). Valuation Methodology Survey, 2012.

PricewaterhouseCoopers (2014).Opportunity knocks*:* Insurance industry analysis Insurance industry analysis.https://www.pwc.co.za/en/assets/pdf/insurance-industry-analysis-march-2014.pdf. (Accessed 12 December 2014).

Sharma, A.K. & Kumar, S. (2010). Economic Value Added (EVA) - Literature Review and Relevant Issues. *International Journal of Economics and Finance*, 2, pp. 200-220.

Skeunkel, W.E. (1996). T*he Interrelationship among Economic Surplus, Economic Value, and Appraisal Value*. Discussion Paper, Valuation Actuary Symposium: Society of Actuaries, 3, pp. 55-88.

Skeunkel, W.E. (1996). Economic Value-Added for a Life Insurance Company. *Society of Actuaries*, pp. 213-216.

Stewart, G.B. (1991). The Quest for Value, New York: HarperCollins Publishers.

Stewart, G.B. (1994). EVA: Fact and Fantasy. *Journal of Applied Corporate Finance*, 7, pp. 71-84.

Van der Poll, H.M., Booyse, N.J., Pienaar, A.J., Büchner, S. & Foot, J. (2011). An Overview of the implementation of Economic Value Added (EVA) performance measures in South Africa. *Southern African Business Review*, 15, pp. 112-141.