

Abstracts of articles in other South African journals

DE JURE

Millard, D (2016). *PK Harikasun v New National Assurance Company Ltd* (190/2008) [2013] ZAKZDHC 67 (12 December 2013). Of red herrings, sardines and insurance fraud: something's fishy: recent case law. *DJ* 49(1), 155–67

Fraudulent insurance claims may be divided into three broad categories. The first is unfounded or fabricated claims and these are claims for losses that never occurred (Reinecke et al. *South African Insurance Law* (2013) 375–6). Here, the insured fraudulently attempts to obtain a benefit he would not have been entitled to, were it not for his fraud. The second is fraudulently exaggerated claims, which refers to those claims where the insured inflates the value of what was lost. The third category refers to claims that are fully valid but which are accompanied by fraudulent means or devices—this means that the claim is valid but because the insured is of the opinion that the fraud is necessary to render the claim valid, he perpetrates fraud. At common law, the principle is that an insured cannot claim more than he is actually entitled to. Insurance companies often deal with insurance fraud by including fraudulent claims clauses into their contracts. Standard fraud clauses entitle the insurer to repudiate such claims and, in some instances, the insurer may also be entitled to cancel the contract. These clauses confirm the parties' rights and where an insurer has, for instance, compensated a policyholder and it later transpires that the claim was fraudulent, the insurer has the right to recover benefits that were mistakenly paid to the policyholder.

INVESTMENT ANALYSTS JOURNAL

Verheyden, T, De Moor L & Vanpee, R (2016). Mutual fund performance: a market efficiency perspective. *IAJ* 45(1), 1–15

This study reconciles existing literature on stock market efficiency and mutual fund performance by developing a framework to test whether fund managers are able to exploit market inefficiencies. We find a positive relationship between alpha and weak-form market

efficiency. Most funds are unable to outperform the market systematically, although a few are able to exploit relatively inefficient markets. Top performing funds are characterised by a better management of downside risk in times of market distress, whilst simultaneously exploiting learning effects when markets return to equilibrium. By conditioning fund performance on the state of the underlying market, we propose a conditional alpha ratio, which helps to better understand fund performance and can improve the fund selection process for investors.

Ryu, D, Ryu D & Hwang, JH (2016). Corporate social responsibility, market competition, and shareholder wealth. *IJAJ* **45**(1), 16–30

This paper examines the association between corporate social responsibility (CSR), product market competition (PMC) and shareholder wealth by analysing CSR and market data from January 2006 to December 2012 (excluding 2009) in Korea. We focus on the role of PMC, which has been ignored in previous studies of CSR. Our empirical analyses indicate that PMC plays a significant role in explaining the relationship between a firm's CSR activity and its stock returns. More specifically, we find that CSR activities significantly increase stock returns when PMC is low. This result implies that when competition is low, the effect of CSR is consistent with the stakeholder value maximisation theory.

Page, D, Britten, J & Auret, C (2016). Idiosyncratic risk and anomaly persistence on the Johannesburg Stock Exchange (JSE). *IJAJ* **45**(1), 31–46

This study examines arbitrage costs and the persistence of the size, value and momentum premiums on the Johannesburg Stock Exchange (JSE). Two arbitrage costs are considered: transaction and holding costs. Transaction costs refer to indirect and direct costs of engaging in arbitrage. Holding costs relate to the level of idiosyncratic risk that arbitrageurs expose themselves to in pursuit of an individual strategy. We examine monthly price and accounting data of all JSE listed shares over the period 1 January 1992 to 30 November 2014. The effects of idiosyncratic risk are evaluated with asymmetric and GARCH-in-mean models using zero-cost portfolio return series. The results reveal significant and persistent value and momentum effects. The value premium is highly sensitive and negatively related to direct transaction costs. Conversely, momentum has greater sensitivity to indirect transaction costs and displays a negative relationship. An increase in idiosyncratic risk results in an increase in the value premium. However, the momentum premium does not react positively to an increase in idiosyncratic risk. The findings imply that the costs of arbitrage play a large role in the persistence and existence of the value premium, yet the same cannot be said for medium-term momentum in share prices.

Munro, B & Bradfield D (2016). Putting the squeeze on the sample covariance matrix for portfolio construction. *IJAJ* **45**(1), 47–62

Portfolio construction plays a critical role in adding performance to a fund. Central to portfolio construction are the two primary inputs: the vector of forecast returns and the covariance matrix. Our focus is on the covariance matrix. With guidance from the literature we consider the suitability of two simple estimators, four shrinkage estimators and three blended

estimators for mean-variance portfolio construction in the South African environment. Our assessment frameworks comprise a risk-centric framework based on minimum variance portfolios (MVPs) as well as a return-centric framework. Our findings based on a South African equity setting reveal that there are notable differences between the compositions of the MVPs of the covariance estimators. Furthermore, we find that alternative covariance estimators do yield better out-of-period performance in terms of lower realised risks than the sample covariance matrix. In our return-based assessment framework, we considered scenarios of perfect skill and less-than-perfect skill at forecasting returns. In the former case, we found that all of the estimators produced optimal portfolios that substantially outperformed the optimal portfolio derived from the sample covariance matrix. Considering the MVP framework, as well as the return-based framework, we conclude that all of the estimators considered performed better than the sample covariance matrix, effectively reducing the sampling error in the sample covariance without introducing too much specification error. However, no one estimator could be singled out as consistently superior in the South African setting over a range of test metrics considered.

Swart, B & Van Zyl, J (2016). Recovery of asset information from options prices. *IAJ* 45(2), 110–22

Past data on an asset is of limited value to market agents seeking information about an asset's future behaviour. Options, on the other hand, are forward-looking instruments: their payoff is based on the distribution of the underlying asset's future price at the time of maturity of the option. Current prices of traded options therefore contain information about the market's view on future asset prices and allow us to find implied risk-neutral probability distributions for such assets. David Shimko developed a method which gives an analytic expression for implied risk-neutral probability density functions, and a procedure for generating lognormal tails for the distribution (Shimko, 1993: Bounds of probability. *Risk*, 6(4), 33–37). Researchers have noted that the distributions generated by his formula are not quite satisfactory in terms of area under the density function, skewness and kurtosis. In this paper, we prove that the 'Shimko formula' (Shimko, 1993: 36) contains errors, and we derive the correct formula. This new expression for the density function now gives an area below the curve equal to one, and improved values for the kurtosis and skewness of distributions. We also provide a new way of generating non-lognormal tails for the density function.

Katzke, N & Garbers, C (2016). Do long memory and asymmetries matter when assessing downside return risk? *IAJ* 45(3), 123–48

In this paper we set out to test whether, on sector level, returns series in South Africa exhibit long memory and asymmetries and, more specifically, whether these effects should be accounted for when assessing downside risk. The purpose of this analysis is not to identify the most optimal downside risk assessment model or to reaffirm the often regarded stylised fact of the existence of long memory and asymmetry in asset returns series. Rather, we set out to establish whether accounting for these effects and allowing for more flexibility in second order persistence models actually leads to improved downside risk assessments. We

use several variants of the widely used GARCH family of second order persistence models that control for these effects, and compare the downside risk estimates using Value-at-Risk measures of different model formulations and compare the out-of-sample performances. Our findings confirm that controlling for asymmetries and long memory in volatility models improve risk management calculations.

Lee, Y-H & Mo, W-H (2016). Analysis of price discovery and non-linear dynamics between volatility index and volatility index futures. *IJF* **45**(3), 163–76

This study utilises a smooth transition vector error correction model with a Generalised AutoRegressive Conditional Heteroskedasticity GARCH model to investigate the price-discovery and non-linear dynamics at different times when a deviation occurs in the co-movement equilibrium between the spot volatility index (VIX) and futures. Our results show support for relative price-discovery contribution from both VIX spot and VIX futures markets. Moreover, we provide evidence that information traders obtain profits by exhibiting more confidence in exploiting large deviations from the equilibrium in these two markets, whereas noise traders expand their mispricing behaviour. Both VIX spot and VIX futures in turn continue to deviate from equilibrium with the existence of large deviations from the co-movement.

Prettejohn, B & Van Vuuren, G (2016). The effect of yield curve shape and level on bond immunisation effectiveness. *IJF* **45**(3), 177–93

The effect of different-shaped yield curves on the effectiveness of bond immunisation was investigated. Bonds were priced using historical yield curves of various shapes and simulated interest rate shocks applied. The resulting end-values of these bonds were calculated and compared at relevant duration dates using symmetrical (positive and negative) shocks. Yield curve shape and position were found to be important factors for immunisation effectiveness and results also demonstrated that—all else held constant—immunisation effects are asymmetrical for shocks of different sign. Changes in bond value are consistently less pronounced for positive shocks, regardless of yield curve shape or level.

Jahangir, A, West, D & Willows, G (2016). The value of financial advice: an analysis of the investment performance of advised and non-advised individual investors. *IJF* **45**(Sup1), 63–74

This study investigates the value added by financial advisors on the investment performance of advised versus non-advised individuals. A sample of 4 142 individual investors from a large South African investment house were analysed over a period of 10 years from 1 January 2005 to 31 December 2014. The data was analysed to draw conclusions on the return and trading behaviour of investors. The results indicate no statistical difference between the returns generated between advised and non-advised investors. However, advised investors make statistically significantly more trades than non-advised investors. The results indicate that there is no significant additional benefit of utilising a financial advisor, after the initial fund selection decision has been made.

JOURNAL OF SOUTHERN AFRICAN STUDIES

Fombad, MC (2015). Governance in public-private partnerships in South Africa: some lessons from the Gautrain. *JSAS* 41(6), 1199–217

This article explores the application of principles governing public–private partnerships (PPPs) to a particular case in South Africa and suggests ways in which governance principles could be incorporated more effectively within its designated objectives. Despite an increasing recognition of the need for active research into the effectiveness of governance principles within PPPs, there remains very little research about the effectiveness of PPP governance as a developmental project. The Gautrain Rapid Rail Link is a project by the Gauteng provincial government (GPG) to provide efficient public transport options and good governance, using the build, operate and transfer type of PPP. This article draws on both a background case study of the Gautrain and the conceptual framework of governance to evaluate the extent to which effective governance has been achieved through the Gautrain. It sheds light on some governance issues and on the lessons learned that might be useful in enhancing governance in PPPs in South Africa. If the PPP mega-rail transportation system is to provide a new approach to delivering goods and services to citizens in post-apartheid South Africa, PPPs will need to be viewed as governance tools, promoting transparency, accountability, risk allocation, responsiveness, collaboration, mutual commitment, social and community obligations and proper strategic representation of costs in their planning and implementation.

Waldman, L (2016). Strands of struggle: dealing with health citizenship in the aftermath of asbestos mining. *JSAS* 42(5), 947–63

Asbestos mining is banned in many parts of the world, and promoted in others. This article examines the effects of asbestos mining in South Africa, 30 years after the mines closed. Focusing on mining communities, it explores the political struggles that the communities have engaged in to address environmental threats, rehabilitate land, and secure compensation for their ill-health. Drawing on the concept of ‘bio-citizenship’, and reviewing national policies introduced to protect South Africans against asbestos exposure, this article shows how different forms of compensation (for illness contracted during employment versus pollution and illness from residential proximity to asbestos mines) shape and inform degrees of belonging and of citizenship.

MANAGEMENT DYNAMICS

Lotter, R (2016). “I wish it were Friday”: do analysts and investors get distracted at the end of the week? *MD* 24(3), 21–32

This study explores whether investors and analysts might be less attentive at the end of the week for a variety of reasons, including being distracted by the coming weekend or having other information that competes with relevant financial information for their attention. A database containing 22 626 recommendations over the 2000–2011 period was analysed to

compare analyst and investor activity on Fridays with their activity during the rest of the week. Analyst activity on Fridays was generally higher than during the week, although it was the highest on Mondays—possibly because they had more time to reflect over the weekend. Analysts issued more positive recommendations on Fridays than during the three preceding days, and issued a higher proportion of negative recommendations on the weekdays with the lowest overall activity. Investors exhibited lower levels of attention on Fridays, and reacted most strongly to analysts' opinions on Tuesdays.

MEDITARI ACCOUNTANCY RESEARCH

Ram, A, Maroun, W & Garnett, R (2016). Accounting for the Bitcoin: accountability, neoliberalism and a correspondence analysis. *MEDAR* 24(1), 2–35

PURPOSE: Given its innovative characteristics and increasing popularity, the Bitcoin, and other virtual currencies, are expected to become mainstream, leading to the need for a generally accepted accounting treatment. Currently, however, there are no accounting standards which offer guidance on the recognition and measurement of these virtual currencies. To this end, the purpose of this paper is to determine a conceptual approach for accounting for the Bitcoin, grounded in the theories of neoliberalism and stewardship.

DESIGN/METHODOLOGY: The research adopts an interpretive mixed-method approach. The relevant literature is analysed to identify key characteristics of the Bitcoin. These, as well as the elements of accounting policies inspired by neoliberalism and stewardship, form row and column headings in a correspondence matrix completed by 40 financial reporting experts. The correlations between rows and columns (developed using principal component analysis) are used to identify possible recognition and measurement requirements for the Bitcoin. Semi-structured interviews are used to complement the correspondence analysis.

FINDINGS: The correspondence analysis and interviews reveal an emphasis on cost and fair value proposed by models grounded in stewardship and neoliberalism, respectively. The primary factor at work is the need to account for the underlying economics of the unit of account, something which is informed heavily by an organisation's business model. Cost and fair value may be conceptual opposites, but in the eyes of respondents, these need to be used to achieve the single goal of communicating the economic rationale for holding the Bitcoin.

RESEARCH LIMITATIONS/IMPLICATIONS: The study is based on a purposefully selected sample of experts and lacks the exploratory potential of purely qualitative research. Nevertheless, it makes novel use of a correspondence analysis to provide an initial frame of reference for developing an accounting policy for unusual transactions and balances.

ORIGINALITY/VALUE: The paper is the first to provide a normative perspective on the accounting for this poorly understood 'currency'. It also adds to the limited body of interpretive accounting research which dispenses with traditional finance paradigms and positivist models to provide practical recommendations. Finally, the paper offers an innovative approach, using a correspondence analysis and detailed interviews, for developing an accounting policy for transactions not specifically within the scope of existing accounting standards.

Badenhorst, WM (2016). Acquisitions and the value versus growth phenomenon. *MEDAR* 24(1), 56–72

PURPOSE: The purpose of this paper is to investigate whether investors value the future growth from acquisitions and the subsequent realisations thereof accurately.

DESIGN/METHODOLOGY/APPROACH: The paper calculates conventional and adjusted market-to-book ratios and investigates abnormal cumulative returns over 20 quarters after portfolio formation for a sample of Standard & Poor's 500 firms using a hedge portfolio and regression approach.

FINDINGS: Hedge portfolios formed using adjusted market-to-book ratios underperform conventional hedge portfolios over a five-year period. Dividing the hedge into its comprising elements reveals that the underperformance of the adjusted hedge is mainly caused by weaker returns from value firms.

RESEARCH LIMITATIONS/IMPLICATIONS: Findings are specific to large firms in a specific setting, and future research is needed to determine if findings are equally applicable to other situations. Findings imply that investors underrate the growth from new acquisitions and overrate the extent to which this has materialised.

PRACTICAL IMPLICATIONS: The paper highlights that the extrapolation of future growth rates should be carefully considered in any equity valuation of a firm with current or past acquisitions.

ORIGINALITY/VALUE: This paper shows that inaccurate valuation of the growth of new acquisitions and the realisation thereof is at least partially responsible for the value versus growth phenomenon. It shows that the accounting information could be improved and highlights the importance of extrapolating past growth rates with care.

Abeydeera, S, Tregidga, H & Kearins, K (2016). Sustainability reporting—more global than local? *MEDAR* 24(4), 478–504

PURPOSE: In recognition of the potential for Buddhism to advance sustainability, this paper aims to investigate whether Buddhism appears to be informing the sustainability practices of corporations within a particular national context. Corporate sustainability reports are used as a site of analysis.

DESIGN/METHODOLOGY/APPROACH: Sixteen corporate sustainability reports from a set of sustainability award-winning corporations in Sri Lanka, a country with a strong Buddhist presence, are analysed. Evidence of Buddhist principles and values related to sustainability is sought to ascertain the extent to which Buddhism is evident in disclosures within the reports. The influence of global institutions is also considered.

FINDINGS: Analysis reveals surprisingly little evidence of Buddhist principles and values in the corporate sustainability reports of these award-winning corporations. Sustainability reporting practices are revealed to be highly institutionalised by global influences, with the majority of the reports examined explicitly embracing global standardisation. The standardisation of corporate sustainability reporting through the pursuit of globally accepted reporting frameworks is argued to have caused a disconnect between Buddhism as a prevalent institutional force in the local culture and context and the corporate representations evident

in such reporting. Potential consequences of this disconnect in relation to the ability for Buddhism to inform sustainability practices at the organisational level are considered.

ORIGINALITY/VALUE: The paper contributes to the literature on corporate sustainability reporting through considering whether local cultural context is represented within such reports and possible reasons and consequences.

ORiON

Oldele, OS & Bradfield D (2016). Low volatility sector-based portfolios: a South African case. *ORiON* 32(1), 55–78

Portfolios and indices that have been specifically constructed to have low risk attributes have received increasing interest in the recent international literature. It has been found that portfolios constructed by targeting low risk assets have predominantly outperformed portfolios constructed to have higher risks. This anomaly has led to renewed interest in constructing low volatility portfolios by practitioners. This study analyses a variety of low volatility portfolio construction methodologies using sectors as building blocks in the South African environment. The empirical results from back-testing these portfolios show significant promise in the South African setting when compared with a market capitalization-weighted benchmark. In the empirical analysis in the South African environment two techniques stand out as being superior low volatility construction techniques amongst the seven techniques assessed. Furthermore, the low volatility portfolios are blended with typical general equity portfolios (using the Shareholder-Weighted Index (SWIX) as a proxy). It was found that these blended portfolios have useful features which lead to enhanced performance and therefore can serve as effective portfolio strategies.

SOUTH AFRICAN JOURNAL OF ACCOUNTING RESEARCH

Bradfield, D, Gopi, Y & Tshivhinda, J (2015). The role of South African property in balanced portfolios. *SAJAR* 29(1), 51–70

The overriding objective of this paper is to establish the features that South African property brings to a balanced portfolio—and importantly to give insight into a strategic investment weight for this asset class. We acknowledge that listed and unlisted property are potentially two different asset classes and we conduct analysis on both listed and unlisted property. Using a mean-variance approach we find that listed property elevates the efficient frontier across the entire spectrum of risks having allocation weights in excess of 20% across typical risk mandates. Our non-parametric optimisation approach yields an optimal allocation to listed property of 23%, significantly higher than found in local pension funds. Using a non-parametric approach for tactical allocation considerations in differing economic regimes, we find there is indeed scope for tactical asset allocation to the listed property asset class. Considering the role of unlisted property separately in a balanced portfolio setting we

find that unlisted property plays a diversification role in low-risk portfolios. However we find its role in optimal portfolios is less clear as it tends to be substituted by listed property.

Dhai, R (2015). A comparison of the performance of the FTSE South Africa Islamic Index to the conventional market (JSE) in South Africa. *SAJAR* 29(2), 101–14

Over the past four decades there has been a growing interest in the emerging field of Islamic finance and investment (IFI) in South Africa and more generally in other parts of the Western world. One of the distinguishing features of IFI is that investment in any form of business enterprise has to meet certain criteria that fulfil the requirements of Islamic Law (*Shariah*). In South Africa there has accordingly been a concerted effort to embrace the principles of IFI in the market. The aim of this study is to identify whether there has been any difference in the financial performance of shares on the stock exchange meeting the Islamic investing criteria compared to those that do not, within an emerging market context. The proxy for the Islamic market is the Financial Times Stock Exchange (FTSE) South Africa Islamic Index. The returns on this index are compared to three proxies for the conventional market from 1996 to 2007 using single and multiple regression models: (1) the All Share Index on the Johannesburg Stock Exchange (JSE) in a single-factor regression; (2) the Resources Index and Financial-Industrial Index in a two-factor model; (3) and a four-factor model developed by Carhart (1997: On persistence in mutual fund performance. *The Journal of Finance*, 52, 57–82) that accounts for size, growth and momentum in the market in addition to the All Share Index. Looking at all three measures, no significant differences were identified in the performance of the Islamic index compared to that of the conventional market.

Pambutaj, HH, Chamisa, E, Abdulla, C & Smith C (2015). An analysis of corporate governance and company performance: a South African perspective. *SAJAR* 29(2), 115–31

This study examines the relationship between corporate governance mechanisms and company performance as measured by economic value added (EVA), return on assets (ROA) and Tobin's Q. A multiple regression model is used to compare the association between corporate governance mechanisms and company performance for 158 companies listed on the JSE Securities Exchange (formerly known as the Johannesburg Stock Exchange) for the year 2012. We report four main results. First, board size is found to be negatively and significantly related to EVA suggesting that firms with smaller boards perform better than those with larger boards. Second, the relationship between Tobin's Q and the proportion of non-executive directors (NEDs) on the board is both positive and significant, suggesting that companies with higher proportions of NEDs seem to perform better than those with lower proportions of NEDs. Third, frequency of board meetings is negatively and significantly related to both the ROA and the Tobin's Q suggesting that companies which hold board meetings less frequently appear to perform better than those holding board meetings more frequently. Fourth, the relationship between company size and two performance measures (EVA and ROA) is both positive and significant, suggesting that larger companies seem to perform better than smaller ones. Furthermore, the association between leverage and the ROA is negative and marginally significant, suggesting that companies with less debt appear

to perform better than those with more debt. Overall, based on the number and strength of associations between board characteristics and the measures of performance, we conclude that Tobin's Q has a better association with board characteristics than both EVA and ROA. The study also shows that the majority of firms listed on the JSE comply with the King III propositions that the majority of board members be NEDs and that the majority of the NEDs be independent.

Barnard, KJ & Bunting, MB (2015). Value and size investment strategies during the global financial crisis: evidence from the South African equity market. *SAJAR* 29(2), 177–96

Value/growth and size investment strategies involve the creation of equity portfolios on the bases, respectively, of intrinsic value relative to market value and market capitalisation. The propositions that a portfolio of high relative intrinsic value shares anomalously outperforms a low intrinsic value portfolio (in other words, there is a value premium) and a portfolio of low market capitalisation shares outperforms big company shares (a size effect) have attracted a great deal of academic and professional attention in recent decades. This paper examines the value premium and the size effect in the context of the South African equity market for the period July 2006 to June 2012, which includes the global financial crisis and its continuing economic aftermath. Two specific issues are investigated: firstly, whether the value premium and size effect exist in this market and this time frame, and secondly, whether the evidence in this context provides any support for a rational investor explanation for the observed state of the equity market. In terms of the first research objective, statistically significant results are found in support of the existence of the value premium in the specific context of small shares and the size effect in the context of value shares. In terms of the second, some evidence is presented that may support the argument that these particular equity market anomalies are not associated with differences in risk.

Dowie, G & Willows, G (2016). An investigation of investors' estimates of returns earned and the effect of anchoring on these estimations. *SAJAR* 30(1), 29–40

This study examines overconfidence and anchoring in an investing environment to determine if there is evidence of the phenomenon amongst a sample of academics at participating universities.

A survey was sent out to over 6,000 staff members at four South African universities assessing respondents' estimations of their returns earned in unit trusts in which they were invested, as well as assessing whether they would adjust their estimate when presented with an anchor—the relevant Johannesburg Stock Exchange (JSE) All Share Index return. A total of 466 completed responses were obtained, of which 81 respondents indicated that they were invested directly in a South African equity unit trust to allow for statistical testing. The data obtained were analysed for evidence of overconfidence and anchoring by comparing respondents' estimates of fund returns against historical returns and then checking whether they adjusted their estimate after being presented with an anchor.

The study found that investors were under-confident rather than overconfident. Furthermore, it was found that older respondents were better able to estimate their past returns than

younger respondents. The presence of an anchor appeared to have no effect on respondents' estimates.

Raemakers, K, Maroun, W & Padia, N (2016). Risk disclosures by South African listed companies post-King III. *SAJAR* 30(1), 41–60

The introduction of principles on the governance of risk in the King Code on Corporate Governance (King III), coupled with the drive for more integrated models of reporting, has highlighted the need for effective communication of risks and risk-management strategies to stakeholders. To date, however, there has been little research on trends in risk disclosure practices by large firms listed on the Johannesburg Stock Exchange (JSE). As such, this research adds to the body of integrated reporting literature by examining changes in the extent of risk disclosures by these companies from 2010 to 2012. The research finds that, although there has been an increase in disclosure over this period, there is a possibility of reporting on the governance of risk being a compliance-based exercise rather than an example of effective stakeholder communication.

Bradfield, D & Munro, B (2016). The role of gold bullion in South African balanced portfolios. *SAJAR* 30(2), 172–86

The objective of this paper is to establish the structural features that gold bullion brings to South African global-balanced portfolios and to establish a strategic weight for this potential asset. We consider two methodological approaches based on a 40-year history to establish a strategic allocation weight for gold bullion. Our first approach considers the strategic role of gold bullion in South African global-balanced portfolios by using a mean-variance efficient frontier framework. We also implement a second assessment methodology that utilises a non-parametric optimisation procedure. We find from our efficient frontier analysis that the primary strategic role of gold bullion in a South African multi-asset portfolio is to add diversification and reduce portfolio risk (rather than enhance return). Whilst our mean-variance results differ slightly from our non-parametric results we ultimately find evidence in support of an allocation of 4% to gold bullion for South African balanced portfolios. This finding is consistent with findings in the international literature.

SOUTH AFRICAN JOURNAL OF BUSINESS MANAGEMENT

Viviers, S & Smit, E vdM (2015). Institutional proxy voting in South Africa: process, outcomes and impact. *SAJBM* 46(4), 23–34

This study investigated the nature of institutional shareholder activism in South Africa with a particular focus on proxy voting as a public form of shareholder discontent. A total of 24510 votes cast by 17 local investment management companies in 2013 were analysed. Interviews were also conducted with selected investment managers to gain more insight into the proxy voting process at their companies. Based on this data, it was concluded that investment managers preferred to engage with investee companies in private and viewed

proxy voting as the last link in the shareholder activism chain. As a result, only 6.6 per cent of all votes were ‘against’ resolutions tabled by 347 JSE-listed companies in 2013. Resolutions regarding shareholders’ endorsement of companies’ remuneration policies; the election and re-election of directors, particularly those serving on audit committees; and the issuance of ordinary shares elicited the most opposition. Companies that were excluded from the JSE’s Socially Responsible Investment Index in 2013 attracted significantly more opposition than their counterparts who were included in the index when seeking shareholder approval on the election and re-election of directors and the placing of shares under the control of directors. The same applied to companies that had low environmental, social and governance disclosure scores in 2013 as regards the issuance of shares. It is recommended, amongst others, that shareholder activism in South Africa be promoted by enhancing investor education and effecting some regulatory changes.

Ramchander, M (2016). Measuring consumer knowledge of life insurance products in South Africa. *SAJBM* 47(2), 67–74

The financial services industry is characterised by product suppliers having more information than consumers regarding product features and services. The purpose of this article is to explore this information asymmetry with particular reference to the life insurance industry. Financial advisors, acting as intermediaries, are charged with the task of resolving this asymmetry through mandatory disclosures demanded by regulation. In South Africa, the Financial Services Board (FSB) monitors, regulates and supervises the financial services industry through the Financial Advisory and Intermediary Services Act of 2002 and The Code of Conduct for Financial Advisors. This paper distinguishes financial products from other products and highlights the need for disclosures regarding product features, by financial advisors. Using multistage sampling a national survey was conducted to establish whether consumers are knowledgeable of the features of basic insurance products. The findings were that consumers have a low to very low level of understanding of the features of basic insurance products. The study makes an important contribution to insurers’ understanding of consumers’ knowledge regarding the features of basic life insurance products. Furthermore, the findings would also contribute to insurers understanding the level to which intermediaries resolve the information asymmetry between product suppliers and consumers.

SOUTH AFRICAN JOURNAL OF ECONOMIC AND MANAGEMENT SCIENCES

Marcia, A & Maroun, W (2015). Relevance and corporate responsibility reporting in the South African context: an alternate view post King-III. *SAJEMS* 18(4), 500–18

This study tests for the value relevance of corporate responsibility reporting (CRR) based on a sample of companies listed on the Johannesburg Stock Exchange (JSE). It also provides evidence of the statistical significance of the potential contribution of CRR to share price values in the South African context at a particular point. On the basis of a sample of 82 companies on the JSE, hierarchical regression analysis was used to test the contribution of

levels of corporate social responsibility disclosures to company share prices, over and above the contribution of the size of a firm's equity and net income. In contrast with other findings which predict a positive relationship between company share price and levels of corporate social responsibility disclosures, the latter are found to have no significant association with company share price over and above the associations of the size of a firm's equity and net income. Bivariate associations, however, indicate a significant association between share price and levels of corporate social responsibility disclosures. On the basis of these findings, it is argued that disclosures increase for firms with larger endowments of equity, yet corporate social responsibility disclosures do not necessarily add value to company share price.

Kemda, LE, Huang, C-K & Chinhamu, K (2015). Value-at-risk for the USD/ZAR exchange rate: the variance-gamma model. *SAJEMS* 18(4), 551–66.

A country's level of exchange risk is closely linked to its financial stability, on a macro-economic scale. South African exchange rates, in particular, have a significant impact on imports, inflation, consumer prices and monetary policies. Consequently, it is imperative for economists and investors to assess accurately the associated exchange risks. Exchange rates, like most financial time series, are leptokurtic and contradict the classical Gaussian assumption. We therefore introduce subclasses of the generalised hyperbolic distribution as alternative models and contrast these with the normal distribution. We conclude that the variance-gamma model is the most robust for describing the log-returns of daily USD/ZAR exchange rates and their related Value-at-Risk (VaR) estimates. The model selection methodologies utilised in our analyses include the robust Kolmogorov–Smirnov test and the Akaike information criterion. Backtesting on the adequacy of VaR estimates is also performed using the Kupiec likelihood ratio test.

Barros, C & Wanke, P (2016). Cost efficiency of African insurance companies using a finite mixture model. *SAJEMS* 19(1), 64–81

This paper evaluates the operational practices by African insurance companies from Angola and Mozambique, using a finite mixture model that allows controlling for unobserved heterogeneity. More precisely, a stochastic frontier latent class model is adopted in this research to estimate the cost frontiers for each of the different technologies embedded in this heterogeneity. This model not only enables the identification of different groups of African insurance companies from Angola and Mozambique, but it also permits the analysis of their cost efficiency. The results indicate the existence of three different technology groups in the sample, suggesting the need for different business strategies. The policy implications are also derived.

Botha, F, Snowball, J & Scott, B (2016). Art investment in South Africa: portfolio diversification and art market efficiency. *SAJEMS* 19(3), 358–68

Art has been suggested as a good way to diversify investment portfolios during times of financial uncertainty. The argument is that art exhibits different risk and return characteristics to conventional investments in other asset classes. The new Citadel art price index offered

the opportunity to test this theory in the South African context. Moreover, this paper tests whether art prices are efficient. The Citadel index uses the hedonic regression method with observations drawn from the top 100, 50 and 20 artists by sales volume, giving approximately 29 503 total auction observations. The Index consists of quarterly data from the period 2000Q1 to 2013Q3. A vector autoregression of the art price index, Johannesburg Stock Exchange all-share index, house price index, and South African government bond index were used. Results show that, when there are increased returns on the stock market in a preceding period and wealth increases, there is a change in the Citadel art price index in the same direction. No significant difference was found between the house price index and the art price index, or between the art and government bond price indices. The art market is also found to be inefficient, thereby exacerbating the risk of investing in art. Overall, the South African art market does not offer the opportunity to diversify portfolios dominated by either property, bonds, or shares.

SOUTH AFRICAN JOURNAL OF ECONOMICS

Du Plessis, S, Du Rand, G & Kotze, K (2015). Measuring core inflation in South Africa. *SAJE* **83**(4), 527–48

Measures of core inflation convey critical information about an economy. They have a direct effect on the policymaking process, particularly in inflation-targeting countries, and are utilised in forecasting and modelling exercises. In South Africa, the price indices on which inflation is based have been subject to important structural breaks following changes to the underlying basket of goods and the methodology for constructing price indices. This paper seeks to identify a consistent measure of core inflation for South Africa using trimmed means estimates, measures that exclude changes in food and energy prices, dynamic factor models, and wavelet decompositions. After considering the forecasting ability of these measures, which provide an indication of expected second-round inflationary effects, traditional in-sample criteria were used for further comparative purposes. The results suggest that wavelet decompositions provide a useful measure of this critical variable.

Polakow, D & Flint, EJ (2015). Global risk factors and South African equity indices. *SAJE* **83**(4), 598–616

South African equity is frequently portrayed as a market requiring a high degree of local expertise—to appropriately understand its many idiosyncratic features—as well as intimate knowledge of its unique drivers—to prudently invest in the same. This claim is evidenced by the amount of research and effort devoted to understanding South African-specific economics, interest rates and risks. The aim of this research is to debunk this perception with a simple yet robust and highly replicable statistical model (best-subsets regression) for the majority of the traded South African equity indices. We show how the South African equity market is mostly a one-way mirror of a confluence of international factors, all arguable largely unrelated to South Africa. We discuss why these models are currently less useful than their longer-term

predictive averages and note the current relevance of including implied volatility and interest rates as predictors.

SOUTH AFRICAN JOURNAL OF HIV MEDICINE

Whiteside, A, Cohen, J & Strauss M (2015). Reconciling the science and policy divide: the reality of scaling up antiretroviral therapy in South Africa. *SAJHM* **16**(1)

With the world's largest national treatment programme and over 340 000 incident cases annually, the response to HIV in South Africa is hotly contested and there is sometimes a dissonance between activism, science and policy. Too often, policy, whilst well intentioned, is informed only by epidemiological data. The state of the healthcare system and socio-cultural factors drive and shape the epidemic and its response. By analysis of the financial, infrastructural, human resources for health, and governance landscape in South Africa, we assess the feasibility and associated costs of implementing a universal test and treat programme. We situate a universal test and treat strategy within the governance, fiscal, human resources for health, and infrastructural landscape in South Africa. We argue that the response to the epidemic must be forward thinking, progressive and make the most of the benefits from treatment as prevention. However, the logistics of implementing a universal test and treat strategy mean that this option is problematic in the short term. We recommend a health systems strengthening HIV treatment and prevention approach that includes scaling up treatment (for treatment and prevention) along with a range of other prevention strategies.

SOUTH AFRICAN MEDICAL JOURNAL

Coetzee, LM, Cassim, N & Glencross, DK (2016). Implementation of a new 'community' laboratory CD4 service in a rural health district in South Africa extends laboratory services and substantially improves local reporting turnaround time. *SAMJ* **106**(1), 82–7

BACKGROUND: The CD4 integrated service delivery model (ITSDM) provides for reasonable access to pathology services across South Africa (SA) by offering three new service tiers that extend services into remote, under-serviced areas. ITSDM identified Pixley ka Seme as such an under-serviced district.

OBJECTIVE: To address the poor service delivery in this area, a new ITSDM community (tier 3) laboratory was established in De Aar, SA. Laboratory performance and turnaround time (TAT) were monitored post implementation to assess the impact on local service delivery.

METHODS: Using the National Health Laboratory Service Corporate Data Warehouse, CD4 data were extracted for the period April 2012–July 2013 (n=11 964). Total mean TAT (in hours) was calculated and pre-analytical and analytical components assessed. Ongoing testing volumes, as well as external quality assessment performance across ten trials, were used to indicate post-implementation success. Data were analysed using Stata 12.

RESULTS: Prior to the implementation of CD4 testing at De Aar, the total mean TAT was 20.5 hours. This fell to 8.2 hours post implementation, predominantly as a result of a lower pre-analytical mean TAT reducing from a mean of 18.9 to 1.8 hours. The analytical testing TAT remained unchanged after implementation and monthly test volumes increased by up to 20%. External quality assessment indicated adequate performance. Although subjective, questionnaires sent to facilities reported improved service delivery.

CONCLUSION: Establishing CD4 testing in a remote community laboratory substantially reduces overall TAT. Additional community CD4 laboratories should be established in under-served areas, especially where laboratory infrastructure is already in place.

Dyers, RE, Evan, J, Ward, GA, Du Plooy, S & Mahomed, H (2016). Are central hospitals ready for National Health Insurance? ICD coding quality from an electronic patient discharge record for clinicians. *SAMJ* **106**(2), 181–85

BACKGROUND: South Africa (SA)'s planned National Health Insurance reforms require the use of International Statistical Classification of Diseases (ICD) codes for hospitals to purchase services from the proposed National Health Authority. However, compliance with coding at public hospitals in the Western Cape Province has been challenging. A computer application was developed to aid clinicians in integrating ICD coding into the patient hospital discharge process.

OBJECTIVE: To evaluate the quality of ICD codes captured using the application and predictors thereof in a single hospital department.

METHODS: After six months, the quality of ICD codes was determined by comparing ICD code descriptors with medical concepts in a random sample of original patient records selected over a six-week period. Patient and personnel characteristics influencing quality of coding, derived from a theoretical framework, were collected.

RESULTS: Of 223 patient records, 45.3% (95% confidence interval (CI) 38.8–51.9) had complete ICD codes. Primary ICD code accuracy was 74.0% (95% CI 67.8–79.5). Patient characteristics such as female gender, younger age group and fewer co-morbidities, as well as seniority of clinician rank, were significantly associated with ICD coding being complete on adjusted analysis.

CONCLUSION: The results of this study describe ICD coding quality at a central hospital in SA supported by a computer application and the factors influencing this. More interventions are required to achieve reliable coding data, such as additional ICD coding validation tools, training and oversight of junior clinicians.

Nkosi, V, Wichmann, J & Voyi, K (2016). Comorbidity of respiratory and cardiovascular diseases among the elderly residing close to mine dumps in South Africa: a cross-sectional study. *SAMJ* **106**(3), 290–97.

BACKGROUND: Pollution arising from mine dumps in South Africa (SA) has been a source of concern to nearby communities.

OBJECTIVE: To investigate whether comorbidity of respiratory and cardiovascular diseases among elderly persons (≥ 55 years) was associated with proximity to mine dumps.

METHODS: Elderly persons in communities 1–2 km (exposed) and ≥ 5 km (unexposed) from five preselected mine dumps in Gauteng and North West provinces in SA were included in a cross-sectional study.

RESULTS: Exposed elderly persons had a significantly higher prevalence of cardiovascular and respiratory diseases than those who were unexposed. Multiple logistic regression analysis indicated that living close to mine dumps was significantly associated with asthma + hypertension (odds ratio (OR) 1.67; 95% confidence interval (CI) 1.22–2.28), asthma + pneumonia (OR 1.86; 95% CI 1.14–3.04), emphysema + arrhythmia (OR 1.38; 95% CI 1.07–1.77), emphysema + myocardial infarction (OR 2.01; 95% CI 1.73–2.54), emphysema + pneumonia (OR 3.36; 95% CI 1.41–7.98), hypertension + myocardial infarction (OR 1.60; 95% CI 1.04–2.44) and hypertension + pneumonia (OR 1.34; 95% CI 1.05–1.93).

CONCLUSION: Detrimental associations between comorbidity of the health outcomes and proximity to mine dumps were observed among the elderly in SA.

Gerber, AM, Botes R, Mostert A, Vorster A & Buskens E (2016). A cohort study of elderly people in Bloemfontein, South Africa, to determine health-related quality of life and functional abilities. *SAMJ* **106**(3), 298–301

BACKGROUND: An ageing population has become an issue of global importance. According to statistics, the number of people aged ≥ 60 years will outnumber children < 5 years by 2020.

OBJECTIVE: To identify chronic and comorbid diseases that contribute to reduced quality of life (QoL) and functional ability in elderly people living in nursing homes in Bloemfontein, Free State, South Africa (SA).

METHODS: This study used utility- and capability-based questionnaires EQ-6D and a modified ICECAP-O to identify chronic and comorbid diseases that contribute to reduced QoL and functioning in the elderly. An information leaflet was supplied to respondents, along with an informed consent form that each signed and dated. The respondents participated voluntarily and anonymously. Structured interviews were conducted. No algorithm for the EQ-6D or ICECAP-O is available for the SA population. Statistical Package for the Social Sciences version 16 was used to perform the sum score calculations. Data were presented using standard descriptive statistics (frequencies, medians, means, standard deviations and standard errors).

RESULTS: The total sample comprised 104 elderly respondents, 72.1% females and 27.9% males (mean age 77 years). Most suffered from at least two of the following diseases: hypertension (68.8%), joint disease (46.2%), heart disease (22.1%), cancer (19.2%) and psychological disorders (18.3%). The EQ-6D indicated that ‘pain’ (48.3%) and ‘mobility’ (36.2%) were the domains chiefly affected. Elderly subjects with extreme problems reported all domains to be equally affected, with the exception of ‘cognition’ (29.1%).

CONCLUSION: Our results confirm that diseases result in pain and affect mobility and cognition in old age. Access to healthcare and services for older people involves recognition of the importance of health promotion and activities that will help prevent disease, and there should be a focus on maintaining independence, prevention and delay of disease, and disability treatment. This includes improving QoL in elderly people with existing disabilities.

Reform of medical care services is essential to improve healthcare for the elderly and thus improve their QoL.

Mlangeni, N & Senkubuge, F (2016). Antiretroviral therapy programme outcomes in Tshwane district, South Africa: a 5-year retrospective study. *SAMJ* **106**(4), 365–68

BACKGROUND: Scaling up of antiretroviral therapy (ART) in South Africa (SA) has resulted in an increase in the number of patients on the national ART programme and an increased workload for ART service providers nationwide.

OBJECTIVES: To ascertain patient retention on ART after five years on treatment in one district of Gauteng Province, SA, establish the number of patients who remained alive on ART after five years of treatment, and identify patient-related factors that contributed towards the outcome of each indicator.

METHODS: A retrospective cohort study of patients initiated on highly active antiretroviral therapy (HAART) between January and March 2007 was carried out. A sample of 381 patients was randomly selected from 1004 records, and their records were reviewed for visits over the previous 60 months. Summary statistics, Pearson's χ^2 test and linear regression tests were performed.

RESULTS: Of 381 patients, 156 (40.9%) remained alive and active on HAART at their initial sites. The overall mortality rate was 5.0% and the rate of long-term retention in care was 57.4%, excluding those transferred to another site. After six months on HAART the mean rise in CD4 count was 113 cells/ μ L, and after 60 months it was 288 cells/ μ L. Viral load suppression to <400 copies/mL was achieved in 74.0% of patients at six months and 91.0% at 60 months.

CONCLUSION: Immunological and virological outcomes after five years on treatment were good. Both these positive outcomes showed that the ART programme was a success. Improved data quality and patient follow-up will further strengthen programme outcomes.

Moodley, J, Stefan DC, Sewram V, Ruff P, Freeman M & Asante-Shongwe K (2016). An overview of cancer research in South African academic and research institutions, 2013–2014. *SAMJ* **106**(6), 607–10

BACKGROUND AND OBJECTIVES: Cancer is emerging as a critical public health problem in South Africa (SA). Recognising the importance of research in addressing the cancer burden, the Ministerial Advisory Committee on the Prevention and Control of Cancer (MACC) research working group undertook a review of the current cancer research landscape in SA and related this to the cancer burden.

METHODS: Academic and research institutions in SA were contacted to provide information on the titles of all current and recently completed (2013/2014) cancer research projects. Three MACC research working group members used the project titles to independently classify the projects by type of research (basic, clinical and public health—projects could be classified in more than one category) and disease site. A more detailed classification of projects addressing the five most common cancers diagnosed in males and females in SA was conducted using an adapted Common Scientific Outline (CSO) categorisation.

RESULTS: Information was available on 556 cancer research projects. Overall, 301 projects were classified as clinical, 254 as basic science and 71 as public health research. The most common cancers being researched were cancers of the breast ($n=95$ projects) and cervix ($n=43$), leukaemia ($n=36$), non-Hodgkin's lymphoma ($n=35$) and lung cancer ($n=23$). Classification of the five most common cancers in males and females in SA, using the adapted CSO categories, showed that the majority of projects related to treatment, with relatively few projects on prevention, survivorship and patient perspectives.

CONCLUSION: Our findings established that there is a dearth of public health cancer research in SA.

Egbujie, BA, Igumbor, EU & Puoane, T (2016). A cross-sectional study of socioeconomic status and cardiovascular disease risk among participants in the Prospective Urban Rural Epidemiological (PURE) Study. *SAMJ* **106**(9), 900–6

BACKGROUND: Cardiovascular diseases (CVDs) are a challenge to populations and health systems worldwide. It is projected that by 2020 about a third of all deaths globally will be caused by CVDs, and that they will become the single leading cause of death by 2030. Empirical evidence suggests that there is socioeconomic patterning in the distribution and prevalence of risk factors for CVD, but the exact nature of this relationship in South Africa remains unclear.

OBJECTIVE: To examine the association between socioeconomic status (SES) and risk factors for CVD in a cohort of adult South Africans living in rural and urban communities.

METHODS: This was a cross-sectional analytical study of baseline data on a population-based cohort of 1976 SA men and women aged 35–70 years who were part of the Cape Town arm of the Prospective Urban and Rural Epidemiology (PURE) Study.

RESULTS: We found a complex association between SES and CVD risk factors, its pattern differing between urban and rural participants. Marital status showed the most consistent association with CVD risk in both groups: widowed participants living in urban communities were more likely to be hypertensive as well as diabetic, while single participants in both locations were more likely to use alcohol and tobacco products. Level of education was the only SES variable that had no significant association with any CVD risk factor in either study group. All measured SES variables were significantly different between urban and rural participants ($p<0.05$), with diabetes, obesity and alcohol use significantly more prevalent in urban than in rural participants ($p<0.05$) while hypertension and tobacco use were not ($p\geq 0.05$).

CONCLUSION: In this cohort of South Africans, there were significant associations between SES and CVD risk, with marked differences in these associations between rural and urban locations. These findings highlight the need to consider SES and area of residence when designing interventions for CVD prevention and control.

Surender, R, Van Niekerk, R & Alferts, L (2016). Is South Africa advancing towards National Health Insurance? The perspectives of general practitioners in one pilot site. *SAMJ* **106**(11), 1092–95

BACKGROUND: The launch of the National Health Insurance (NHI) White Paper in December 2015 heralded a new stage in South Africa's advancement towards universal health coverage. The 'contracting in' of private sector general practitioners (GPs), though only one component of the overall reformed system, is nevertheless crucial to address staff shortages and capacity, and also to realise the broader vision of a single unified, integrated system.

OBJECTIVE: To report on the views and experiences of GP providers tasked with implementing the reforms at one pilot site, Tshwane District in Gauteng Province, providing an insight into the practical challenges the NHI scheme faces in implementation.

METHODS: The study was qualitative in nature, using a combination of convenience and purposeful sampling to recruit participants. A thematic analysis of the data was conducted using Nvivo 10 software.

RESULTS: The overall experiences of the GPs exposed a number of problems with the pilot. These included frustration with lack of appropriate infrastructure and equipment in NHI facilities, difficulties integrating into the facilities and lack of professional autonomy, as well as unhappiness with contracting arrangements. Despite strong support for the idea of NHI, there was general scepticism that private doctors would embrace the scheme on the scale required.

CONCLUSION: The study suggests that the current pilots are still a long way from the vision of a single, integrated health system. While it may be argued that the pilots are not themselves the completed NHI, the findings suggest that it will take much longer to establish than the timeline envisaged by government.

SOUTH AFRICAN STATISTICAL JOURNAL

Kloppers, PH & Kikawa, CR (2016). Multiple linear regression with constrained coefficients: application of the Lagrange multiplier. *SASJ* **50**(2), 303–12

In this paper, we present two unfamiliar novel estimation techniques (UNET) for the constrained regression coefficients in the framework of a standard multiple linear regression model. Estimation of a linear regression problem with constraints on the regression coefficients are firstly derived by minimising a formulated goal function that minimises the total sum of the squared errors, plus the sum of the linear constraints multiplied by a Lagrangian. We also show that the solution to the system of equations can be obtained without differentiating the goal function, rather expressed in terms of the known matrices. This is achieved by employing properties of a blocked linear system. The UNET is justified by a numerical simulated system of linear equations in three dimensions. The UNET yields estimates that are comparable to those generated by the Schur complement principle.