**ABSTRACT**
Nearly 20 years after inception, the Insurance Accounting project of the International Accounting Standard Board (IASB) is nearing completion. The recently published June 2013 IFRS 4 Exposure Draft represents a likely picture of the future of global insurance accounting and it is important that insurers begin to understand and prepare for the changes it will bring. This paper explores the key principles and likely impacts of the IFRS 4 Phase II standard, in its current proposed form, in the South African life insurance context. In particular, the proposed IFRS 4 Phase II approach to profit reporting is contrasted with the current Financial Soundness Valuation (FSV) approach for simple illustrative term and endowment assurance products. The results of this comparison are used to identify and discuss the major impacts which the new profit reporting standard will have on insurance contract liabilities and hence profit profiles over time. This paper focuses on key areas where there is a high degree of certainty in the exposure draft, and touches more lightly on those areas where change is still expected. The findings of the paper indicate that a greater degree of profit deferment and initial strain will occur under IFRS 4 for profitable policies, however marginally profitable and unprofitable policies may have less profit deferment and initial strain than currently under the FSV approach. IFRS 4 will also reduce the discretion which insurers have in introducing additional profit deferment and will thereby serve to increase comparability between insurer financial results.

**KEYWORDS:**
IFRS 4 Phase II; Financial Soundness Valuation; FSV; profit reporting; South Africa; life insurance; long term insurance; insurance accounting; discretion
1. INTRODUCTION
In general, financial reporting methods do not affect the overall profit arising on contracts, but serve to change the pattern of recognition of that profit. This fact is probably most relevant to insurance accounting given the long-term nature of most insurance contracts. The result of this is that a change in reporting method can have a significant impact on profit arising for an insurance contract over a period. For the financial performance and financial position of insurance companies to be understood by users and comparable (both with other insurance companies and with any other companies) it is therefore important that the principles underlying insurance accounting are consistent with other accounting principles and applied consistently by insurers across the world.

1.1 Development of Insurance Financial Reporting Systems
Over time, life insurance accounting has evolved in a piecemeal fashion around the world. This has led to significantly different insurance accounting practices being in place in different countries and jurisdictions. In addition to the internal inconsistencies of insurance accounting, the unique nature of insurance contracts has meant that insurer financial reporting is rarely directly comparable with the financial reporting of other industries.

Historically financial reporting by insurers was aligned to statutory solvency reporting and included a significant degree of prudence, deferring profits late into the policy term. This approach was suitable for the mutual companies which dominated the insurance market at the time as a high degree of solvency was viewed more favourably than a high level of profitability (Fagan, 1991). Over time, as insurance companies demutualised, there has been an increased focus on obtaining a more realistic measure of insurer profitability to meet shareholder and other stakeholder requirements. In recent decades this focus has been taken a step further with the development of value measures, such as embedded value, to determine the value of future insurer profits.

1.2 Types of Insurance Financial Reporting Systems
At a high level one could consider financial reporting systems to be of two types: those that allow profit to emerge at inception, and those that do not (Waugh, 1998). The Financial Soundness Valuation (FSV) method of financial reporting currently used in South Africa requires a portion of profit to be deferred via compulsory margins but allows the remaining profit to emerge at inception. Additional deferment of profit can occur at the discretion of the insurer via discretionary margins in order to control the amount of profit emergence at inception and to prevent losses in future policy years.
The IFRS4 proposed method for profit reporting does not allow profit to emerge at inception and the discretion applicable is more second-order in nature (compared to the FSV approach). Around the world there is broad consensus that financial reporting systems ought to avoid the recognition of excessive profit at inception, especially where it relates to future services or risk transfers.

As with any reporting system, financial reporting systems need to strike a balance between rules and principles in their approach. A principles-based approach will aim to capture all material risks, but will allow for discretion and company-specific risks to be catered for on a company level. In contrast, a rules-based approach typically prescribes a formula with set parameters providing little or no room for discretion and company-specific customisation. A move towards a principles-based approach can be seen as consistent with a move towards enterprise risk management and typically requires more sophisticated (i.e. customised) tools and actuarial judgement. Notably, effective principles-based reporting standards require a strong governance process to be in place, to ensure that the freedom allowed in the principles is used to improve reporting and is not abused.

To some extent, both the FSV and IFRS4 methods have elements of rules- and principles-based approaches. With regard to rules, the FSV and IFRS4 both specify a minimum level of margin that must be added to best-estimate liabilities (either through compulsory margins under FSV or through the contractual service margin and risk adjustment under IFRS4). Arguably, IFRS4 has the more stringent ‘rule’ since it does not allow any profit emergence at inception. With regard to principles, both the FSV and IFRS4 approaches require that profit be recognised in an appropriate manner over the life of the policy. While this principle is common to both methods, the manner in which it is put into practice may differ. The FSV approach allows for significant discretion through the use of discretionary margins to increase the value of insurance liabilities which may be inherently risky. IFRS4 allows discretion in the calculation and run-off of the risk adjustment and some discretion, within specified requirements, for the run-off approach used for the contractual service margin. The potential impact of discretion on insurer liabilities and profits is therefore far higher under the FSV approach than under IFRS4.

1.3 IFRS4 Background
The IFRS4 project began in 1997 when the International Accounting Standards Committee (IASC) set up a steering committee to begin the task of producing an insurance accounting standard. At the time, insurance contracts were excluded from other relevant accounting standards and the accounting practices for insurance contracts were difficult to understand and diverse, differing from practices in other sectors. The work of the committee resulted in an Issues Paper being published in 1999 (IASC, 1999). The paper highlighted the range of issues which need to be considered when developing an international accounting standard and the tentative view of the IASC on these matters.
Industry comments on the paper were evaluated and considered in the development of the Draft Statement of Principles (DSOP) which was presented by the steering committee to the International Accounting Standards Board (IASB, which had replaced the IASC) in 2001 (IASB, 2001). The DSOP outlined the principles which the IASB saw underlying an insurance accounting standard. It focused on the need for insurers to provide relevant and reliable information that users of financial statements could employ in making economic decisions. In particular, the IASB moved towards specific objectives for the standard: to improve financial reporting by providing a consistent basis for the accounting for insurance contracts; to make it easier for users of financial statements to understand how insurance contracts affect an entity’s financial position, financial performance and cash flows; and to enhance comparability across entities, jurisdictions and capital markets.

In 2002 it was decided to split the IFRS 4 project into two phases. An interim standard, Phase I, was finalised in 2004 and focused on the classification and disclosure of insurance contracts, allowing most previous insurance accounting approaches to continue. With Phase II still in development, IFRS 4 Phase I is currently adhered to in countries which have adopted IFRS reporting, allowing a wide range of accounting practices for insurance contracts.

Since 2004 Phase II has been under development by the IASB Working Group. In 2007 the first Discussion Paper with Preliminary Views on Insurance Contracts was published by the IASB (IASB, 2007). Based on this discussion paper the US accounting standards board, the Financial Accounting Standards Board (FASB), joined the IASB in an attempt to jointly publish a truly global insurance accounting standard. However, sufficient agreement was not reached by 2010 when the IASB alone issued the first exposure draft for the IFRS 4 Phase II standard. The FASB has subsequently released an exposure draft which shares many similarities with the IASB proposal, but also contains material differences.

Based on extensive deliberations, input from the IFRS 4 Working Group, results from field tests, global round-table talks with industry and comment letters to the 2010 Exposure Draft, the IASB published a second exposure draft in June 2013 (IASB, 2013). This second exposure draft re-exposes five of the most contentious issues of the 2010 Exposure Draft and allows further comment on the overall sensibility and cohesion of the standard as a whole. The re-exposed issues are:

- Treatment of contracts that require an entity to hold underlying items and specify a link to returns on those underlying items.
- Adjusting of the contractual service margin for changes in estimates of future cashflows.
- The classification of interest expense in profit and loss versus other comprehensive income.
- Presentation of insurance contract revenue and expenses.
- Proposed effective date and simplifications applicable on transition to the draft IFRS 4 Phase II standard.
Based on comments received regarding the June 2013 Exposure Draft the IASB hopes to finalise and publish the IFRS 4 Phase II standard in the first half of 2014. Following publication, the IASB has indicated that it will grant approximately three years before the published standard will be mandatory for IFRS-compliant financial reporting. This means that insurers can expect the standard to be applicable for reporting periods from 2017 onwards at the earliest, but given the significant changes which will be introduced by this standard, insurers have been urged to start planning for its implementation as soon as possible. Given the delays in reaching this stage of the development of Phase II, it is however possible that further delays in publication of Phase II will push the implementation date into 2018 and beyond.

The challenge for the IASB is to publish an insurance standard which is applicable globally to a diverse range of insurance products (some of which have been developed specifically to leverage local accounting features). The standard should provide reliable and relevant recognition of insurance profit and insurance liabilities and should not introduce artificial accounting volatility of profits where underlying economic volatility does not exist. These ideals of stable, relevant, reliable and useful results need to be balanced against complexity in the insurance standard, in terms of practical implementation by insurers and understanding and interpretation by users of financial statements.

1.4 South African Financial Soundness Valuation (FSV) Profit Reporting

Background

Prior to 1994 there was no single compulsory method for South African insurers to use when publishing their annual actuarial valuation results, although a net premium approach was the most common. In 1994, it became compulsory for life insurers to use the financial soundness basis (we call this the ‘old FSV’ to distinguish it from the ‘new FSV’ employed from 1998). The old FSV brought about a significant improvement in measurement and disclosure, but lacked clarity on profit recognition and the level of prudence to be used.

To address this, the Actuarial Society of South Africa requested a profit reporting sub-committee to draw up an exposure draft for an improved FSV basis which would address the shortcomings of the old FSV basis. Following consultation, internal review within the Actuarial Society and external review by the South African Institute of Chartered Accountants (SAICA) and the Financial Services Board (FSB), the new FSV basis came into use in 1998 (Kruger & Franken, 1997). Since then, barring minor refinements, the new FSV basis has remained largely unchanged and is the current published reporting basis for insurers in South Africa.

The new FSV basis was developed to address specific shortcomings of the old FSV basis and to provide a prudently realistic picture of the overall financial position of an insurer. To attain these objectives, the Actuarial Society specified the following principles required of the profit reporting framework (Kruger & Franken, 1997):

— Published financial statements should fairly present the financial position of an insurer.
— Confidently profitable insurance contracts should not give rise to a loss at inception.
— Profits should be recognised prudently over the term of each contract (i.e. premature profit recognition and subsequent losses in future years should be avoided).
— It should be possible to reconcile the financial position of the insurer to the profit and loss account.
— Current legislation and accounting and actuarial concepts and standards should be complied with.
— Meaningful disclosure should be encouraged.

In summary, insurance liabilities under the new FSV basis are calculated using best-estimate assumptions (50% probability of experience being worse than expected) with explicit and defined compulsory and discretionary margins. Best-estimate assumptions should be made regarding all the possible factors that have an impact on the financial position of an insurer, bearing in mind policyholder reasonable expectations. Compulsory margins serve to add a minimum (and quantifiable and comparable) degree of prudence to best-estimate assumptions which prevents premature profit recognition in the event of adverse future experience over the life of a policy. Discretionary margins then provide flexibility for insurers to add an additional level of prudence (also quantifiable) which would allow for excess uncertainty and result in profits emergence which is consistent with policy design or company practice.

The main change the new FSV basis brought about was that the compulsory level of prudence was explicitly stated. This was done by changing the future cashflow assumptions used in the reporting basis from “prudent best-estimate” to “best-estimate plus compulsory margin”. The magnitude of compulsory margins was prescribed and stipulated explicitly as a percentage of liability components, removing mystery around un-quantified implicit margins which were in use in prudent estimates in the old FSV basis. The new FSV basis also explicitly excludes any implicit allowance for severe adverse experience in the future cashflows assumptions, which may have been included in the old FSV basis.

1.5 Purpose and Structure of this Paper
The purpose of this paper is to evaluate the IFRS 4 Phase II proposals, as published in the June 2013 Exposure Draft by the IASB (from here on these will be simply referred to as ‘IFRS4’), in the South African context. To do this, the IFRS4 measurement proposals are applied to simple illustrative South African life insurance products and the overall liability and profit profiles under the FSV and IFRS4 approaches are compared. These comparisons serve to highlight the differences between the two approaches, and the financial impact these differences will result in.

Section 2 explores the IFRS4 Exposure Draft in detail and compares it to existing financial reporting systems commonly used in South Africa. This provides a
theoretical background and identifies the key theoretical differences between the FSV and IFRS4 approaches.

Section 3 goes into the detail of the IFRS4 approach and methodology used in the investigation to produce the results, which are seen in Section 4. The focus of the results is a comparison of the impact of the differences between the FSV and IFRS4 approaches for a set of illustrative policies. The results of the investigation and the differences arising from the comparisons are displayed and discussed in Section 4 before conclusions are made in Section 5.

Throughout, focus is steered away from issues which are currently contentious under the latest IFRS4 Exposure Draft, including: the treatment of the impact of changes in interest rates through “other comprehensive income”; practicalities of premium revenue calculation; and the applicability of the mirroring approach. A more detailed list of the issues not considered in this investigation is outlined in Appendix A. Appendix B contains a detailed list of the assumptions underlying the illustrative policies considered in the various scenarios.

2. IFRS4 EXPOSURE DRAFT – JUNE 2013
In June 2013 the IASB released the second and what should be final exposure draft for the IFRS4 Phase II insurance accounting standard. The exposure draft re-exposes five of the most contentious issues in the initial exposure draft, and seeks comment on these issues only.

The investigations performed in this paper and the conclusions drawn thereon are on the basis of the IFRS4 standard as in the June 2013 Exposure Draft. Although it is inevitable that changes will happen between the exposure draft and the final published standard, the changes are most likely limited to the re-exposed issues and overall are unlikely to significantly impact the results seen in these investigations.

This is partially because these investigations aimed to steer clear of the re-exposed issues (expanded on in Appendix A), but also because the core principles of the standard have been agreed upon and do not form part of the re-exposed issues.

This section outlines the IFRS4 Exposure Draft and how it compares to existing insurance financial reporting methods currently used in South Africa.

2.1 Objectives and Principles
The objective of IFRS4 is to provide users of insurer financial statements with more relevant and reliable information about the nature, amount, timing and uncertainty of cashflows from insurance contracts. In particular, IFRS4 is intended to make it easier for users of financial statements to understand how insurance contracts affect an entity’s financial position, financial performance and cashflows. In doing so, IFRS4 is intended to create more consistent and comparable financial results not only between different insurers within a jurisdiction, but between insurers operating in different jurisdictions and also between non-insurance entities.
In achieving the above objective, the IASB has produced an exposure draft which adheres to the following set of principles (CFO Forum, 2006):

— An insurance contract should be measured using a current value approach that incorporates all of the available information in a way that is consistent with observable market information.
— Insurance contract revenue should be presented such that it depicts the transfer of promised services arising from an insurance contract in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those services.
— Expenses should be presented as an entity incurs them.
— Accounting profit should be realised in line with release from risk. The consequence of this is that on initial measurement no accounting gains or losses should arise.
— Insurance liability measurement should be based on a current best-estimate of the present value of all future cashflows. An allowance should also be made for inherent risk and uncertainty. The consequence of this is the building block approach (outlined below), where assumptions underlying the liability calculation are periodically reviewed and updated.
— Assets and liabilities should be measured on a consistent basis, reflecting the way in which the reporting company manages risk. The consequence of this is that accounting mismatches should be avoided where no economic mismatch exists, however where an economic mismatch exists this should be reflected in the accounting used to prepare the financial statements.

Overarching the objectives and principles is the consideration of balance between the benefit of more relevant, timely and faithful information about insurance contracts and the costs of greater operational complexity in preparing the information as well as to users in understanding the information.

2.2 Outline and Summary
IFRS 4 aims to provide a single recognition standard for all insurance liabilities (including long and short-term insurance contracts, reinsurance contracts, investment contracts with discretionary participation features; but excluding employee benefit plans, product warranties, residual value guarantee contacts, fixed-fee service contracts and some others). Within the standard there is allowance for a simplified measurement approach for certain contracts with duration of less than approximately one year (premium allocation approach) as well as specific allowances for the recognition and treatment of reinsurance contracts. This paper however focuses on the approach applicable to the majority of long-term insurance contracts, the building-block approach, together with some of the presentation and transition arrangements that are applicable.
2.2.1 Recognition and Measurement

Under IFRS 4, an insurer should recognise an insurance contract at the earliest of:

— The beginning of the coverage period.
— The date on which the first payment from the policyholder is due.
— The date on which the portfolio of insurance contracts to which the contract will belong becomes onerous.

In general, unbundling of insurance from investment components and components to provide goods and services is not required for measurement under IFRS 4. However, in the specific case where the insurance component of a contract is distinct (i.e. the components of the contract are not highly inter-related and a separate contract with equivalent terms is sold or could be sold in the same jurisdiction) then unbundling may apply. Unbundling is also required for the disclosure of premium revenue: an insurer should disclose investment premiums or deposits (i.e. premiums that are received which will be paid back to the policyholder whether a claim occurs or not) separately from insurance premium revenue, even if that investment component is not distinct. This unbundled premium disclosure is part of one of the re-exposed issues in the June 2013 Exposure Draft.

The main focus of the investigations performed in this paper is the measurement approach used under IFRS 4 and how this compares to the FSV approach. The IFRS 4 approach is referred to as the building-block approach, and as with the FSV approach, has best-estimate cashflow estimates at its core. The key components, or building blocks, are the present value of fulfilment cashflows (which can be further broken down into expected future cashflows, risk adjustment and discounting) and the contractual service margin, as illustrated in Figure 1.

The future cashflows component typically forms the bulk of the insurance contract liability (either positive or negative). Discounting is applied to the future cashflows to obtain a present value of future cashflows referred to as the best-estimate liability. The best-estimate liability together with the risk adjustment are referred to as the fulfilment cashflows. The fulfilment cashflows together with the contractual service margin then constitute the overall insurance liability at any point in time.

The fulfilment cashflows (i.e. the future cashflows, discounting and risk adjustment) are determined at inception in the same way as they are in subsequent measurement. They are prospective measures which look at the expected future experience of the policies over their lifetime. The contractual service margin however has a different approach to measurement at inception and subsequently.

Future cashflows

The future cashflows considered should relate directly to the fulfilment of the portfolio of contracts under consideration. The estimates should be current, explicit and reflect the perspective of the entity (whilst simultaneously being consistent with the market). The estimates should include all cashflows within the boundary of a contract and
should reflect, in an unbiased way, all of the available information about the amount, timing and uncertainty of all cash inflows and outflows that are expected to arise. Only directly attributable expenses (both initial and renewal) should be included in the estimate of expenses.

IFRS 4 requires that the expected future cashflows are estimated on the level of a portfolio of insurance contracts. A portfolio of contracts under IFRS 4 is a group of insurance contracts that are managed together and that provide coverage for similar risks that are priced similarly relative to the risk taken on. The benefit of portfolio estimates is that practically it may be easier to make estimates in aggregate for a portfolio level (e.g. expenses) rather than on an individual policy basis. However, in principle the expected value of estimates made at a portfolio level should reflect the expected value of estimates attributed to individual contracts and therefore should not produce a different result.

**Discounting**

To discount value of the future cashflows on a portfolio, an insurer should use a discount rate which is consistent with observable market prices for instruments whose characteristics (timing, currency and liquidity) are consistent with those of the insurance contract. Insurers have the choice as to whether they use a bottom-up approach (i.e. starting with a risk-free rate and adjusting it for factors that are...
relevant to the insurance contract – e.g. an increase in the discount rate to allow for the illiquidity of the insurance contract liability) or a top-down approach (i.e. starting with an actual portfolio of assets, or reference portfolio, and removing factors that are not relevant to the insurance contract, such as market risk premiums for credit).

**Risk Adjustment**

The final component of the fulfilment cashflows is the risk adjustment, which measures the compensation that the entity would require to make the entity indifferent between:
— fulfilling an insurance contract liability that has a range of possible outcomes; and
— fulfilling a liability that will generate fixed cashflows.

The current exposure draft does not specify a technique to determine the risk adjustment; however the previous draft specified approaches of cost of capital, confidence interval and value at risk. Despite the approach not being specified in the current draft, the risk adjustment should meet the requirements of a coherent risk measure. The risk adjustment should also be translated into a confidence interval value for disclosure purposes. This allows insurers freedom in determining their own risk adjustment, bearing in mind the inherent risk and complexities of their business, but still allowing some degree of comparability between results published by different insurers.

The risk adjustment should be measured allowing for diversification benefits to the extent that the entity considers those benefits in determining the compensation it requires for bearing that uncertainty. Effectively this means the entities have the discretion to include diversification benefits to the extent they expect to receive them.

**Contractual Service Margin**

The contractual service margin or CSM is set at initial recognition and is run off over time. Assuming no pre-coverage cashflows, the CSM at inception is equal to the opposite of the fulfilment cashflows (unless the portfolio of insurance contracts is onerous, in which case the fulfilment cashflows are positive and the CSM is set to zero). The CSM at inception is determined at the level of a portfolio of insurance contracts which is consistent with the portfolio of contracts considered in deriving estimates of best-estimate liability cashflows. The result of the CSM is the absorption of any profits which could arise otherwise at policy inception.

After initial recognition, the CSM runs off over the lifetime of a portfolio of contracts in a systematic way which best reflects the remaining transfer of services provided under the contracts. The CSM run-off over time should be recognised in profit and loss at a level of aggregation such that once coverage period of an insurance contract has ended, the related CSM has been fully recognised in profit and loss.

The CSM may be ‘unlocked’ at subsequent reporting dates: when changes to the estimates of future cashflows are made, a corresponding and offsetting change is made
to the CSM to prevent a net change in the insurance liability. In this way the CSM acts as a buffer against adverse cashflow assumption changes.

However, should estimates of future cashflows change so significantly as to eliminate any residual CSM, the CSM will not take on a negative value. Rather, the insurance liability will increase to allow for the expected future adverse experience and this increase will be realised as a loss in the current period.

Overall, the CSM can be built up over a reporting period as follows:

— Opening CSM
— Plus interest accreted on the carrying amount of the CSM
— Minus amount recognised for services provided during the period (i.e. run-off)
— Plus a favourable change in the present value of future cashflows relating to future services
— Minus an unfavourable change in future cashflows relating to future services (to the extent that the CSM is sufficient to absorb such a change).

There are a variety of ways to determine the CSM run-off over the lifetime of a policy. Despite this, the exposure draft does not provide specific guidance on the method used to run down the CSM, only that the method is a ‘systematic way that best reflects the remaining transfer of services that are provided under the contract’ (IASB, 2013).

Likely methods to do this would use one or more of the cashflow components as carriers of deferred profits: e.g. running CSM off by using a fixed percentage of the present value of future claims on a policy. Other possible vectors include premiums and expenses (or a combination of these), whilst a simplification may be to use a straight line run-down of the CSM over the life of a policy.

2.2.2 Presentation

Complying with the IFRS 4 Phase II presentation requirements will require a significant degree of investment by insurers. The added complexities around maintaining portfolio level data and assumptions for measurement, together with the other presentation requirements outlined below, are likely to be practically onerous for insurers as they differ from current practice.

IFRS 4 is likely to result in an increased use of “Other Comprehensive Income” (OCI) for the presentation of changes in asset and liability values as a result of changes in market variables. Most notably, OCI will be used to recognise and present the change in insurance liability as a result of changing discount rates from the rate used to determine the liability at inception and current discount rates as at measurement date. OCI will also be used in certain circumstances for contracts with a direct link to underlying assets in terms of the mirroring approach. Both of these suggestions are contentious under the current exposure draft and are not explored in detail in this paper.

In order to provide greater clarity around the extent of negative insurance liabilities allowed for, IFRS 4 requires insurers to disclose portfolios of insurance contracts in an asset position (i.e. negative liabilities) separately from those in a liability position.
This means that portfolios of contracts with a net positive liability will not be netted off by portfolios of contracts with a net negative liability in published financial statements. The same is applicable to reinsurance contracts and both of these requirements represent a change from the presentation required in the FSV approach.

The presentation of premium revenue will also be different under IFRS 4. Premium revenue related to insurance contracts under IFRS 4 should depict the transfer of promised services arising from an insurance contract in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those services. Effectively, this means that premium revenue expressed in the income statement does not reflect the amount of premium actually received by the insurer over the period. Instead, it comprises:

- the expected claims and expenses related to coverage for the period (excluding any repayments of investment components);
- any change in the risk adjustment; and
- the amount of the contractual service margin recognised in profit and loss for the period.

On the other hand, claims and other expenses relating to an insurance contract are presented in the statement of profit and loss in the period when they are incurred.

For the presentation of premium revenue and claims in the IFRS 4 statement of profit and loss, insurers will have to separate out non-distinct investment components (which were not separated from insurance contracts for measurement) from insurance components. This effectively requires unbundling of the premium and claim cashflows for presentation purposes, which was not previously required under the FSV approach.

Other than premium revenue, expenses and claims, the IFRS 4 profit and loss statement will also contain most of the other insurer earnings components for the year, including losses at initial inception, changes in the risk adjustment, changes in CSM that reflect transfer of services, changes in estimates of future cashflows which exceed the CSM absorption, changes in carrying amount for onerous contracts, changes in reinsurer credit standing and interest expense on insurance liabilities as per the locked-in rate at inception. Income and expenses relating to reinsurance should not be offset against one another and should be disclosed separately.

Other considerations around modification and derecognition of insurance contracts will be required under IFRS 4 but are not considered further in this paper.

2.2.3 Disclosure

Comprehensive and meaningful disclosures for insurance financial results are pivotal in the achievement of the goals of IFRS 4: to enable users to better understand the nature, amount, timing and uncertainty of future cashflows that arise from insurance contracts.

Disclosures under IFRS 4 should be reported at such a level of disaggregation (in terms of contract type, geographical area and reportable segment) that useful
information is not obscured by providing too much insignificant information, or aggregating items with different characteristics. Where irrelevant, certain disclosures may be omitted, but where insufficient, additional disclosures should also be considered.

IFRS 4 will require a number of reconciliations of amounts presented in the statements of financial position and financial performance. The first is the reconciliation of the line items in the profit and loss and OCI with the statement of financial position (i.e. reconcile the income statement with the movement in assets and liabilities). The movement in insurance liability will be reconciled considering two different categorisations: split into expected present value of future cashflows, risk adjustment and CSM; and split by incurred claims, liabilities for the remaining coverage attributable to amounts immediately recognisable in profit and loss and liabilities for the remaining coverage attributable to amounts not immediately recognisable in profit and loss. The above reconciliations should be done for both insurance and reinsurance contracts. A further reconciliation will also be required to show how the actual premium received in the period by the insurer relates to the premium revenue as recognised in the income statement.

Other than disclosures on amounts specified in the financial statements, IFRS 4 Phase II will require insurers to disclose the judgement used in the preparation of financial statements. In particular, the methods used to measure insurance contract liabilities (i.e. best-estimate liability, risk adjustment and CSM), as well as any inputs used to obtain these estimates (both quantitative and qualitative), will have to be disclosed. Further notable areas of judgement under IFRS 4 which require disclosure are the calculation of risk adjustment, the derivation of discount rates, the pattern of recognition of the CSM and the separation of non-distinct investment components for presentation purposes. Where any changes are made to the above methods over a period, these changes should be disclosed, along with the effect of that change. Where a technique other than a confidence interval was used for the calculation of risk adjustment, the entity should disclose a translation of the result into the confidence interval technique.

IFRS 4 Phase II will not introduce significant changes to the existing IFRS 4 requirements for disclosures in respect of risk and assumptions. This means that IFRS 4 Phase II will continue to require disclosures related to the nature and extent of risks that arise from insurance contracts. These disclosures should enable users of financial statements to understand the nature, amount, timing and uncertainty of future cashflows that arise from insurance contracts. At a minimum, there are a number of disclosures an entity should make (IASB, 2013):

— Exposure to insurance risks shown gross and net of risk-mitigating techniques together with meaningful sensitivities and disclosure of risk concentrations.
— Objectives, policies and processes for managing risks.
— The effect of each regulatory framework in which the insurer operates (e.g. minimum capital requirements and interest rate guarantees).
— The actual claims compared to undiscounted expected claims over a period of time as information is available.
— Other specific disclosures with regard to liquidity risk, credit risk and interest rate risk.

2.2.4 Transition
The application of the IFRS 4 standard (when it is applied for the first time) will constitute a change in accounting policy. On transition, insurers will therefore be required to make a number of one-off changes to facilitate the move from their current published reporting basis to IFRS 4. These changes include (IASB, 2013):
— Derecognition of any existing deferred acquisition costs relating to insurance contracts.
— Derecognition of certain intangible assets which were assumed in previously recognised business combinations. At the same time recognition of certain assets and liabilities acquired in a business combination, as per the new IFRS 4 standard, on the basis that would have applied on the date of business combination.
— Measurement of each portfolio of insurance contracts as the sum of fulfilment cashflows and CSM.
— Recognition, in a separate component of equity, of the cumulative effect of the difference in expected present value of cashflows using the current discount rates and the discount rates applicable when the portfolio of insurance contracts was initially recognised.

Where insurers find it impractical or impossible to perform a fully retrospective calculation in order to measure a portfolio of insurance contract on transition, IFRS 4 allows some simplifications. The goal of the simplifications is to enable insurers to determine the magnitude of the CSM on transition by maximising the use of objective data but without the insurer undergoing exhaustive efforts to do so. The possible simplifications allow insurers to avoid problems of lack of data when determining the best-estimate liability and risk adjustment at inception:
— For the determination of best-estimate liability at inception, actual historical cashflows can be used in place of expected cashflows for the period between inception and transition.
— The risk adjustment at inception can be assumed to be the same as the risk adjustment on transition.
— Approximate methods can be used to determine the discount rates to apply at policy inception.

2.3 Comparison of IFRS 4 with Existing Financial Reporting Methods
The purpose of this paper is to highlight the impact that the IFRS 4 standard will have on the published financial results of South African life insurers which currently use the FSV basis. To understand why differences would arise, and what differences are
expected to arise, it is important to contrast the FSV and IFRS 4 methods. Comparison of the methods from a theoretical standpoint will draw attention to which scenarios should be modelled in more detail in order to quantify the impact of these theoretical differences on a typical South African life insurance policy.

The FSV basis was developed for a specific purpose: for use as a published profit-reporting basis for South African life insurers. Similarly, IFRS 4 was developed as a profit-reporting basis for insurers, but it takes this purpose further and aims to be a profit-reporting basis applicable to insurers around the world, making insurer financial results comparable between countries, jurisdictions and also entities which are not insurers.

In their paper examining the FSV basis, Kruger and Franken conclude that “there is no superior profit reporting method and each method has its strengths and weaknesses” (Kruger & Franken, 1997: 1). Further, it is stressed that discretion in profit reporting should always be counterbalanced, or matched with meaningful disclosure. Both of these statements continue to ring true to this day in the context of IFRS 4 where the IASB and more recently, the FASB, have spent almost twenty years attempting to converge on a “superior” profit reporting approach. Certainly, disclosures now form a much larger portion of insurance company financials than they did when the FSV was developed.

Kruger and Franken outline a set of principles underlying the FSV profit reporting framework which can be used to contrast against IFRS 4 principles. These principles are contrasted in Table 1.

The IFRS 4 framework adheres to most of Kruger and Franken’s principles, with the exception of profit realisation at contract initial recognition. However, the FSV basis does stress that profits should be realised over the life of the policy in a manner which is appropriate given the risks and service transfer under the policy. To this end discretionary margins can be used to defer excessive profits at inception.

The IFRS 4 basis takes this one step further and makes it consistent for all insurers by eliminating any profits at inception, thereby converting some existing discretionary margins into an additional compulsory margin. Removal of discretion from the liability measurement methodology has the advantage that it eliminates the possibility of arbitrary basis or methodology changes and improves consistency of liability measurement between insurers. There is still however some discretion in the determination of the fulfilment cashflows and risk adjustment to the extent there is subjective judgment applied in determining best-estimate or other assumptions.

Kruger and Franken also compare different profit reporting methods from around the world by looking at certain features of the profit reporting framework. It is useful to use this framework to contextualise IFRS 4 in South Africa, by comparing it to the existing FSV basis, the proposed Solvency Assessment and Management (SAM) basis as it currently stands and the European Embedded Value approach as suggested by the CFO Forum and in use in South Africa for supplementary disclosures. The comparison of these different profit reporting methods is performed in Table 2.
Table 1 Principles of FSV method consistent with IFRS 4 Phase II

<table>
<thead>
<tr>
<th>South Africa FSV Basis</th>
<th>IFRS 4 Phase II</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Published financial statements should <strong>fairly</strong> represent the insurer’s financial position.</td>
<td><strong>Agreement</strong>. The objective of the measurement is to represent the notion of the insurer’s “fulfilment of obligations under the contract” and is always current (i.e. marked to market or current best-estimate assumptions).</td>
</tr>
<tr>
<td>2 Insurance contracts that are confidently expected to be profitable should not give rise to an initial loss.</td>
<td><strong>Disagreement</strong>. Contracts that are expected to be profitable should not give rise to a profit at inception, and can result in a loss at initial recognition as only direct costs incurred in originating a portfolio of insurance contracts should be treated as fulfilment cashflows. Indirect costs allocated to the acquisition of a portfolio of contract will thus give rise to new business strain.</td>
</tr>
<tr>
<td>3 Profits should be recognised <strong>prudently over the term</strong> of each contract to avoid premature recognition of profits that may give rise to losses in future years.</td>
<td><strong>Agreement</strong>. Profits are recognised with the release of the risk and contractual service margins. The risk adjustment is released over the contract period as the insurer goes off risk for the contract. The CSM should be released fairly over the coverage period in which services are provided.</td>
</tr>
<tr>
<td>4 The financial position of the insurer should be described in terms which can be <strong>explained readily in the context of a profit and loss account.</strong></td>
<td><strong>Agreement</strong>. The financial position of the insurer is described in terms of components of the profit and loss statements, with a requirement to reconcile the movement in financial position over a period to the profit and loss over a period.</td>
</tr>
<tr>
<td>5 The method should comply with current legislation as well as with existing accounting and actuarial concepts and standards.</td>
<td><strong>Agreement</strong>. IFRS 4 Phase II uses existing concepts for calculating best-estimate liabilities and brings in an internationally accepted principle of eliminating profit at inception.</td>
</tr>
<tr>
<td>6 Meaningful <strong>disclosure</strong> should be encouraged.</td>
<td><strong>Agreement</strong>. A minimum level of disclosure and reconciliation is specified and required under IFRS 4. Additional bespoke disclosures, where necessary, are also required.</td>
</tr>
</tbody>
</table>

The first difference that IFRS 4 will bring about is that profits will no longer be recognised at inception of a contract; instead all profits will be deferred over the life of the policy in a systematic manner through the use of the CSM. The other three methodologies commonly used in South Africa all allow profits at inception and this will constitute a significant change in philosophy.

Not only are profits at inception removed by IFRS 4, but any indirect acquisition costs are not allowed for in the fulfilment cashflows calculation, meaning that they would flow directly through as a loss to the profit and loss statement at inception. The FSV, SAM and EV bases all allow for the full amount of acquisition costs implicitly by including them in the projection of cashflows at inception.
Table 2 Comparison of insurance valuation methods used in South Africa

<table>
<thead>
<tr>
<th>Method</th>
<th>IFRS 4 Phase II</th>
<th>SA FSV</th>
<th>SAM</th>
<th>Embedded value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit recognised at sale</td>
<td>No</td>
<td>Dependent on discretionary margins</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Allowance for acquisition expenses</td>
<td>Split between explicit and implicit</td>
<td>Implicit</td>
<td>Implicit</td>
<td>Implicit</td>
</tr>
<tr>
<td>Lock in of assumptions</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Capitalisation of assumption changes</td>
<td>Once CSM has been reduced to zero</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Profit carriers</td>
<td>Risk adjustment and CSM</td>
<td>Compulsory and discretionary margins</td>
<td>Risk margin</td>
<td>Nil</td>
</tr>
<tr>
<td>Timing of profit</td>
<td>Regulated zero at point of sale</td>
<td>Dependent on discretionary margins</td>
<td>Dependent on risk margin</td>
<td>Upfront</td>
</tr>
<tr>
<td>Asset values</td>
<td>Fair value or DCF (IFRS9)</td>
<td>Fair value or DCF</td>
<td>Fair value or DCF</td>
<td>Fair value or DCF</td>
</tr>
<tr>
<td>Assumptions</td>
<td>Current best-estimate</td>
<td>Current best-estimate with planned margins</td>
<td>Current best estimate</td>
<td>Current best estimate</td>
</tr>
<tr>
<td>Discount rate</td>
<td>Net earned rate on matching assets</td>
<td>Net earned rate</td>
<td>Risk free rate</td>
<td>Risk discount rate</td>
</tr>
<tr>
<td>Disclosure of assumptions</td>
<td>Compulsory in detail</td>
<td>Largely voluntary</td>
<td>Compulsory in detail (to regulator)</td>
<td>Voluntary</td>
</tr>
</tbody>
</table>

It is interesting to note that at the time that the FSV basis was being finalised and discussed, it was noted that one of the shortcomings of the basis was that it was unlikely to be accepted internationally as it does allow for profits at contract inception. It was also noted that not allowing profits at inception would cause a strain on company funds, which might be a concern for insurance companies currently as they look to adopt IFRS 4 in the near future.

The CSM has been set up in order to eliminate any profits at inception; however it can subsequently be used to absorb the impact of adverse assumption changes. Even though IFRS 4 uses current best-estimate assumptions to determine the insurance contract liability at each point, any adverse changes in the future cashflows assumptions are first absorbed by the CSM. Only once the CSM has been depleted to zero will such adverse changes impact the statement of profit and loss (positive changes will however increase the CSM without limit).

The FSV basis uses a range of compulsory and optional discretionary margins to defer profits over the life of a policy; IFRS 4 uses the risk adjustment and the CSM for this purpose. Should a contract be onerous at inception, then only the risk adjustment will serve to defer and carry profits over the life of the policy (since there is no CSM).
This difference in profit carriers is likely to result in a difference between profit profiles of the two methods over time.

The assumptions used for all the methods are roughly in line. Cashflows are generally current, best-estimate (even for FSV, where explicit margins are added, the base cashflows are best-estimate). The different approaches make use of different discount rates; however they are all market-related and required to be kept in line with current market rates. For the FSV and IFRS4 approaches, the rates should be similar or even equal where the assets held to back the insurance liability are matched, since the rates should be consistent both with market rates and with the characteristics of the liabilities in terms of currency, timing and liquidity (but excluding factors not relevant to the cashflows in the insurance contract).

3.  METHOD
A spreadsheet model was created to project insurance contract liabilities and profits for both the FSV and IFRS4 approaches. The model was kept simple in order to illustrate key differences between the results of the two approaches for specific South African products and scenarios. Scenarios and sensitivities were chosen to highlight key differences between the two approaches and to estimate the potential impact of these differences under different scenarios. Due to the complexity of insurance products and insurance companies, not all features and possible discrepancies were investigated and in some cases reasonable simplifications were made in order to produce results which are applicable in general rather than to a very specific situation.

3.1  Assumptions and Simplifications
Only simple, illustrative life insurance policies were examined in this investigation. The focus of the investigation was a non-profit term assurance policy for which a variety of scenarios and sensitivities were explored. The investigation also looked at non-profit endowment and whole of life policies briefly. No linked products or products with discretionary participation features were examined.

The best-estimate cashflows for both the FSV and IFRS4 approaches were assumed to be the same in terms of the types of cashflows considered, their timing and their magnitude. The cashflows considered were premiums, expenses, commission, surrender benefits and maturity benefits, all impacted by interest rates. Under IFRS4, initial expenses were split into direct and indirect initial expenses and treated separately. For simplicity it was assumed that all renewal expenses were direct for the calculation of the best-estimate liability under IFRS4.

All cashflows were assumed to occur annually. Premiums, expenses and commission were assumed to occur at the start of each year whilst deaths, lapses and maturities were assumed to happen at the end of each year. Deaths were assumed to occur first at the end of the year, and lapse rates were applied to the policies in force after the death decrement. Maturities were then considered to be policies which had reached the end of their policy term and had not died or lapsed (i.e. after considering
all decrements for that period). The actual level of cashflows assumed in each of the projections, as well as all other assumptions used in the projection can be viewed in Appendix B.

For term and whole of life policies it was assumed that no surrender values are offered to policyholders. Commission is only assumed to be applicable at inception of the policy (no trail commission) and renewal expenses are assumed to be a fixed amount per annum (increasing with inflation) over the duration of the policy. Endowment policies were assumed to offer a surrender benefit which pays out the sum assured in proportion with the proportion of total premiums received under the policy.

A term structure of interest rates was used for discount rate, investment return and inflation assumptions. The discount rate and investment return assumptions were assumed to be equal to each other and to the nominal forward swap curves provided by the FSB for the Second South African Quantitative Impact Study (QIS2), relevant at 31 December 2011. The swap curve was assumed to be an appropriate discount rate to use for non-profit term and endowment products in terms of both the IFRS 4 and FSV approaches.

Inflation was assumed to be the difference between the real and nominal forward swap rates as per QIS2, plus an explicit 1% margin to accept that company expense growth is likely to be higher than implied inflation from the swap rates. It could be argued that an assumed inflation risk premium within the nominal curve provides a sufficient margin to allow for higher company expense growth, however the impact of this is considered to be immaterial to the analyses conducted and it is not considered further.

Actual experience was assumed to be in line with best-estimate assumptions for all scenarios. This means that for the FSV approach profits each year are the release of compulsory and discretionary margins in the period, whilst for IFRS 4 profits are the releases of CSM and risk adjustment for the period.

In all scenarios, tax is ignored and no investigation was conducted into the impact of tax on the results.

3.2 Scenario-specific Concerns

3.2.1 Inherent Profitability
Scenarios examining the impact of different levels of inherent profitability on a policy alter the level annual premium received over the life of a policy only. All other assumptions remain unchanged from the base scenario.

3.2.2 Premium and Sum Assured Escalation
Scenarios examining the impact of premium and sum assured escalations are considered. In these scenarios all escalations are assumed to be compulsory and are therefore assumed at policy inception, at the specified respective rates, for both the FSV and IFRS 4 approaches.
3.2.3 **Assumption Change Scenarios**
In the assumption change scenarios, a single assumption change at the end of the fifth policy year is considered. All experience prior to the assumption change and subsequent to the assumption change is assumed to occur as expected. All other assumptions are assumed to remain unchanged for the duration of the contract under consideration.

3.2.4 **Other Policy Types**
Endowment and whole of life policies are briefly considered in addition to the base term assurance policy. The endowment policy has a maturity value equal to death benefit (which is the same death benefit as in the base term assurance scenario). The whole of life policy also has a death benefit equal to that in the term assurance policy and assumes a maximum age of 104, as per the underlying mortality tables. Both the endowment and whole of life policies have all other assumptions equal to the base term assurance policy, except for the annual premium which is set to assume a reasonable level of profitability (approximately 10%).

3.3 **FSV-specific Concerns**
The base FSV scenario includes all compulsory margins but makes no use of discretionary margins in its calculation.

The FSV liability which is projected into the future is rebased at each future year. This means that for each projected liability it is assumed that best-estimate experience occurs up to the liability calculation date, but any subsequent cashflows include margins. The result of this is that each projected liability is held for a number of policies which is projected to be in force at the calculation date according to best-estimate assumptions.

The magnitude of compulsory margins is as per the Actuarial Society of South Africa Standard of Actuarial Practice 104 (SAP104). In scenarios where discretionary margins are considered (i.e. zeroisation of negative liabilities and additional mortality margins), no changes to compulsory margins or any other assumption are made.

3.4 **IFRS4-specific Concerns**

3.4.1 **Best-estimate Liability**
The best-estimate liability considered for IFRS4 is the same as for FSV, with the exception that initial expenses are split into direct and indirect. Indirect expenses are then excluded from the IFRS4 best-estimate liability and are instead passed straight through to profit and loss. Varying the proportion of initial expenses which are considered to be direct and indirect is considered in certain scenario analyses. In these scenarios only changes to the proportion of direct and indirect initial expenses are made while all other assumptions remain unchanged. Scenarios examining the impact of indirect renewal expenses were not considered.

All estimates and calculations consider a single policy for the determination of
the best-estimate liability. According to the IFRS4 Exposure Draft (Appendix B36), making estimates at a portfolio level should yield results which are no different to making estimates on an individual contract level and hence the results of the individual policy can be extrapolated to a portfolio.

No rebasing is necessary for the IFRS4 best-estimate liability since it does not include margins which result in a policy run-off which is different from the best-estimate experience.

Significant attention has not been given to the split of cashflows between profit and loss and OCI. Since the scenarios considered in this paper do not include the mirroring approach, and for most scenarios the experience over time is as expected (i.e. discount rates do not change), OCI is not used. This means that the profit and loss results for the FSV and IFRS4 approaches can be compared directly. For the specific scenario where discount rates are assumed to change, OCI is used. It is however still possible to compare the profits between the FSV and IFRS4 approaches by looking at total comprehensive income, which includes profit and loss as well as OCI.

3.4.2 Contractual Service Margin

In the base scenario, the run-off assumption for the CSM uses the present value of claims as a carrier. This is consistent with the idea that the primary service provided to term and endowment assurance policyholders is the payment of claims to policyholders who die over the period.

Other services, such as collection of premiums and administrative functions, can also be viewed to be provided to policyholders over the term of a policy. To examine the potential use of these services as carriers for the CSM, the present value of premiums, and present value of claims plus expenses were considered as alternative carriers for the CSM.

A straight-line run-off of CSM is also considered as a simple alternative. This straight-line run-off has a level run-off of CSM in real terms over time (not in nominal or absolute terms). The run-off is calculated in such a way that the nominal CSM run-off increases with investment return over the policy term.

3.4.3 Risk Adjustment

The risk adjustment is determined based on a cost of capital approach with the capital requirement being a simplified Solvency Capital Requirement (SCR) as per the QIS2 technical specifications. The simplified SCR includes components for mortality, lapse, expense and catastrophe risks. The cost of capital is determined by finding the present value of a simplified SAM SCR calculation at a rate of 6% per annum (for the base scenario). Reduction in capital due to diversification effects, as per the SAM correlation matrices, is allowed. However, no allowance is made for any risk-mitigating actions of the insurer to reduce the capital requirement.

The SCR is calculated on the SAM basis (i.e. it looks at the impact of shocks and assumption changes on the SAM best-estimate liabilities and assets). This means that,
for example, the mass lapse risk component would be very significant for a policy with negative best-estimate liability (despite the IFRS 4 basis having a CSM which tops up negative liability at inception).

The impact of using different cost of capital rates is also examined. For these scenarios only the cost of capital rate applied to the SCR value calculated changes and all other assumptions remain unchanged from the base scenario.

3.4.4 Transition
A simple transition scenario is considered for a company which has sold an identical (base) term assurance policy at the start of each of the preceding nine years as well as at the start of the current year. All assumptions underlying the policies are assumed to be the same and the experience is as expected. The aggregate liability profile and profit releases from the ten policies over time are examined and contrasted under the FSV and IFRS 4 approaches.

3.4.5 Assumption Changes

Changes in estimates of future cashflows
A change in the estimate of future cashflows (for example a demographic change such as a change in future mortality rates) impacts the CSM under IFRS 4. For an adverse change in assumptions, the best-estimate liability will increase and the CSM will decrease (down to a possible minimum of zero) to result in zero overall impact on the liability. Once the CSM has been depleted all effects of changes in assumption result in an increase in overall liability and hence cause a loss to arise. Positive assumption changes result in a decrease in best-estimate liability and increase in CSM (up to any magnitude).

Changes in the discount rate
Under IFRS 4, the impact of changes in discount rates is not absorbed by the CSM and will result in a change in insurance liability and hence profit. However, in the current exposure draft discount rate changes are required to be put through OCI (and not the profit and loss section of the statement of comprehensive income). This approach is used in conjunction with the fair value through OCI approach in the draft IFRS9 standard in an attempt to remove volatility from the profit and loss section of an insurer’s statement of comprehensive income. The impact of the change in asset values is not considered further in this investigation.

4. Results and Comparisons

4.1 Introduction
The following section goes into the crux of the investigation and contains the results of the comparisons performed between the FSV and IFRS 4 approaches. The figures below are a graphic representation of the results obtained and serve to highlight the key findings. The calibration of the base and other scenarios was performed with the specific intent of identifying differences between the FSV and IFRS 4 approaches.
In all the following figures, policy year zero reflects the value of profit at inception, before any cashflows occur. In all scenarios any profit arising at inception will be equal and opposite to the liability determined at inception. Combining the profit at policy year zero and policy year one gives the total profit released in the first policy year. The profits at inception were separated from the profits arising over the first year to highlight the impact that the different approaches have at policy inception. For all policy years after zero, the profit and liability value is as at the end of the year.

### 4.2 Base Scenario

The base policy selected to examine the impacts of IFRS 4 is a profitable (in terms of the present value of future profits) term assurance policy of duration 15 years (the full set of assumptions underlying the policy can be viewed in Appendix B). This policy was chosen because the profit and liability vectors on the IFRS 4 basis highlight some of the key differences with the existing FSV basis.

#### 4.2.1 Profit Profile

**Overall**

The profit profiles in Figure 2 show the profits emerging over the life of the base policy under the FSV and IFRS 4 approaches. The profit emerging under the FSV approach is higher at inception and in the first policy year, but lower in subsequent years, compared to IFRS 4 profit emergence.

![Figure 2](image-url)  
**Figure 2** Comparison of profit profile under IFRS 4 and FSV in the base scenario
Profitability

Overall profitability (i.e. present value of future profits) is the same under both the FSV and IFRS 4 approaches. This is because the premium and actual experience for each scenario is assumed to be the same. The only difference is the timing of the release of profits.

Profit deferment

For this sample policy, the FSV approach releases more profit early on, which means that there is less profit to release later in the term of the policy. This is equivalent to saying that the deferred profits under the FSV approach (i.e. the value of the margins set up at policy inception) are smaller than the deferred profits under IFRS 4 (i.e. the value of the risk adjustment and contractual service margin).

Discretion

The base scenario does not include discretionary margins under the FSV approach. Under IFRS 4, the calculation of the risk adjustment and the run-off of the contractual service margin over time are not prescribed and can differ according to the approach decided by the insurer. Scenarios to examine the impact of this discretion are examined later in this section.

Profit pattern

The pattern of profit release is different between the FSV and IFRS 4 approaches. The FSV approach has a general trend of an increasing level of profit released over the life of the policy. This is because the magnitude of the compulsory margins released in future years is greater than in previous years as mortality, expense and interest margins grow over time. IFRS 4 however shows a decreasing profit level over time. This is due to the components of profit contribution, release of risk adjustment and CSM as well as interest on these components, decreasing over time. These trends are influenced by the number of policies in force and hence the level of lapse and mortality assumptions. However as the decrement assumptions are the same under both the FSV and IFRS 4 approaches, the number of policies in force and hence the influence on trends is the same under both approaches.

First year profits

The base policy is a profitable one. Therefore under IFRS 4 the CSM tops up the negative fulfilment cashflows at inception to zero and there is no profit at inception. Due to the negative liability set up under the FSV approach, profits arise at inception to the extent of the negative liability. In the first year the IFRS 4 approach experiences a loss. This is due to indirect initial expenses which are not included in the best-estimate liability calculation, and are effectively included in the CSM. When these expenses are actually paid during the first year, the CSM does not decrease by the amount of the expenses (as the best-estimate liability would, or as the FSV liability does); instead the
CSM continues to run off at the set rate in line with the CSM carrier. This means that there is an outgo with no accompanying decrease in liability, and hence an overall loss occurs in the first year.

### 4.2.2 Liability Profile

Figure 3 shows the progression of the liability values under both the FSV and IFRS 4 approaches (including best-estimate liability, CSM and risk adjustment components) over the term of the contract:

**Overall**
The liability profile in Figure 3 follows a similar shape under both the FSV and IFRS 4 approaches. For the entire period, the IFRS 4 liability is higher than the FSV liability. This is due to the risk adjustment and CSM being greater in magnitude than the compulsory margins. The level of the liabilities is most different close to policy inception, and it converges towards policy maturity. The convergence is due to the run-off of margins (on both the FSV and IFRS 4 approaches) leaving the best-estimate component as the biggest component of both the liabilities near the end of the policy term.

**Negative liability**
The FSV liability is negative at policy inception because the expected income on the policy exceeds the expected outgo (on a basis which includes compulsory margins).

![Figure 3](image-url)
Under IFRS 4, profit may not be recognised at inception and in this scenario the liability at inception is topped up to zero by the CSM. However, immediately after inception, once the initial expense and commission have been incurred, the best-estimate drops (with no corresponding adjustment to the CSM or risk adjustment) resulting in a negative total liability which we see in Figure 3.

The IFRS 4 liability is larger (i.e. less negative) than the FSV liability because the IFRS 4 margins (CSM and risk adjustment) are higher than the FSV margins.

4.2.3 IFRS 4 Liability Components
Figure 4 shows the split of the IFRS 4 liability by building block components: best-estimate liability, CSM and risk adjustment.

**Overall**
At policy inception we can see the interaction between best-estimate liability, risk adjustment and best-estimate liability to arrive at an overall liability of zero at inception (and hence zero profit at inception). The magnitude of the CSM is equal to the opposite of the sum of the best-estimate liability and risk adjustment.

**Best-estimate liability**
The progression of this component is similar to the progression of the FSV liability, except that it is more negative since it does not include margins. It is the main driver responsible for the shape of the IFRS 4 liability profile over time.

**CSM**
The CSM runs down fairly gradually over the term of the policy, releasing profits in a relatively smooth profile. This CSM in this scenario uses the present value of claims as a carrier for profits. The present value of claims runs down over time because the amount of claims that are expected to occur in a period is greater than the accretion of interest to the CSM for that period.

**Risk adjustment**
This is the smallest of the three liability components; however it has the potential to be significant for some policy types depending on their “riskiness”, as measured by the risk adjustment. The risk adjustment runs off more rapidly than the CSM in the base scenario and performs a similar purpose to the compulsory margins under the FSV basis. The risk adjustment determined in the base scenario appears to be smaller than the value of compulsory margins as determined in the FSV approach.

4.3 Inherent Profitability Scenarios
In these scenarios, the annual premium used in the policy projection is increased and decreased to examine the differences between the FSV and IFRS 4 approaches on policies with different levels of inherent profitability. The inherent level of profitability
in the base scenario (using the measure present value of future profits/present value of future premiums) is 11%, whilst the higher premium and lower premium scenarios below have profitabilities of 25% and –10% respectively. To more realistically consider the impact of higher profitability on FSV profits, scenarios with discretionary margins to prevent the premature release of profits are also considered.

4.3.1 Higher Premium (no discretionary margins)
Figure 5 and Figure 6 contrast the profit profiles under the FSV and IFRS 4 approaches for base and higher premium scenarios.

The IFRS 4 approach has zero profit at inception for both higher premium and base scenarios. However in the higher premium scenario it realises a profit in the first year since the level of profit being released is higher than the indirect initial expenses which are incurred. Subsequent years’ profits under IFRS 4 in the higher premium scenario are steady and decreasing, but at a significantly higher level than compared to the base scenario.

For the FSV approach, the increased profitability from the higher premium is almost entirely released at inception, with profit in subsequent years being almost identical to the base scenario. This is consistent with the FSV approach in that the level of margins (or profits deferred) is not dependent on the magnitude of the premium or the inherent policy profitability.

The IFRS 4 overall liability profile in the higher premium scenario is quite similar to the base scenario since any excess negative liability at inception is removed.

Figure 4 Breakdown of IFRS 4 liability into components in the base scenario
by an increased CSM (which is now very large in relation to the risk adjustment). On the other hand, the shape of the FSV liability is significantly different, with the liability being largely negative for almost the entire policy duration.

In reality, such excessive profits are unlikely to be released at inception under the FSV approach. Discretionary margins, in the form of zeroising negative liabilities or additions to compulsory margins for uncertain future cashflows, would most likely be used to eliminate or significantly reduce such profits. The impact of discretionary margins is examined in the next two scenarios.

**Figure 5** Comparison of profit profiles in higher premium and base scenarios under IFRS 4

**Figure 6** Comparison of profit profiles in higher premium and base scenarios under FSV
4.3.2 Higher Premium (with discretionary margins)

Figure 7 contrasts the FSV profits in the base scenario with the higher premium and higher premium with zeroisation scenarios. In the zeroisation scenario, there is no profit at inception (since the negative liability is zeroised) and an overall loss arises in the first year. The loss is due to the cash outflows in the first year exceeding the inflows, with no corresponding change in liability to offset the loss.

It is interesting to note that subsequent to the first year, FSV profits in the zeroisation scenario are significantly higher than in the base scenario. Whereas in the base scenario the negative liabilities are increasing (i.e. becoming less negative) in this phase, they remain unchanged at zero on this basis, boosting reported profits. After year 10 when there is a positive liability, the profits are back to their base levels.

Figure 8 shows a comparison of IFRS 4 profits in a higher premium scenario with the FSV profits in a higher premium with zeroisation scenario. The comparison shows a more stable emergence of profits under IFRS 4 compared to the FSV approach (with zeroisation of reserves).

It is possible to use discretionary margins other than zeroisation to defer profits and produce a more stable profit release under the FSV basis. However the magnitude of margins required would be large. For example, in the higher premium scenario a discretionary mortality margin of 40% (above the 7.5% compulsory margin) would be needed to effectively remove profits at inception and spread them relatively evenly over the life of the policy. Figure 9 shows a comparison of the IFRS 4 and FSV profit profiles in the higher premium scenario with the addition of a 40% mortality discretionary margin.

Figure 7 Comparison of profiles in higher premium and base scenarios under FSV
4.3.3 **Lower Premium**

Figure 10 and Figure 11 contrast the profit and liability profiles under the FSV and IFRS 4 approaches for the lower premium scenario.

The lower premium scenario results in an inherently loss-making policy (one that will pay out more than it will receive on a best-estimate basis). This means that under the FSV and IFRS 4 approaches, a positive liability is set up at inception, resulting in an equal but opposite loss at that time. The magnitude of the IFRS 4 risk adjustment as calculated for this policy is smaller than the magnitude of the FSV compulsory margins, meaning that the loss at inception under IFRS 4 is smaller than the corresponding loss under the FSV approach. This suggests that policies which are

**Figure 8** Comparison of profit profile under IFRS 4 and FSV in the higher premium (with zeroisation) scenario

**Figure 9** Comparison of profit profile under IFRS 4 and FSV in the higher premium (+40% discretionary mortality margin) scenario
Figure 10 Comparison of end-of-year liability profile under IFRS4 and FSV in the lower premium scenario

Figure 11 Comparison of end-of-year liability profile under IFRS4 and FSV in the lower premium scenario
borderline profitable result in a lower reserving strain under IFRS 4 than under the FSV basis.

Part of this lower reserving strain is due to the fact that not all initial expenses are captured in the IFRS 4 liability. Indirect initial expenses do not feed into the liability calculation at inception but do add to the loss arising during the first policy year under IFRS 4. This means that while the FSV approach results in a profit due to flows during the first year, the IFRS 4 basis results in a loss (as seen in Figure 10). However, combining profit at inception with profit in the first year still results in IFRS 4 having a lower overall loss in first year when compared to the FSV approach (because the risk adjustment on the IFRS 4 basis is lower than the compulsory margins under the FSV).

The liability shapes are quite similar for the two approaches, with the FSV liability higher throughout. In this case there is not as much convergence of liability values towards the end of the policy term (as there is in the base scenario) since the risk adjustment runs off quicker than the compulsory margins.

As seen in the base scenario, the FSV profits increase slightly over policy term whilst IFRS 4 profits decrease over the term. Towards the end of the policy term the profits released on IFRS 4 are very small because they comprise of releases of risk adjustment only (there is no CSM).

### 4.4 CSM Run-off Patterns

IFRS 4 allows some discretion as to the method used for running off the CSM over the policy term. The base scenario makes use of the present value of claims to run the CSM off over the life of the policy. Other potential approaches include using different cashflow vectors (e.g. premiums or expenses or a combination of these) or using a straight-line approach. A different CSM run-off approach does not impact the magnitude of the initial CSM (that is dependent on the best-estimate liability and risk adjustment at policy inception). However, the method of CSM run-off can impact the shape of the CSM over the life of the policy and hence the emergence of profits over time. For profitable policies the release of CSM is a significant portion of the profits released in each period and the run-off pattern has the potential to materially impact reported profits.

Four methods of CSM run-off were considered for comparison: a straight-line run-off approach, a present value of claims carrier (base scenario), a present value of claims plus expenses carrier and a present value of premiums carrier. Figure 12 and Figure 13 display and compare the CSM run-off profile as well as the magnitude of the CSM releases each year (i.e. the change in CSM) for each method.

The present value of claims approach is surprisingly close to the straight-line approach, particularly towards the end of the policy term. The straight-line approach has increasing releases towards the end of the policy because the releases rather grow with interest, based on the interest rate assumptions at policy inception. The growth in release due to interest outweighs the policy decrements (deaths and lapses); hence the overall release increases over time (see Section 3 for more details on how the straight-
line release was determined). Similarly, the claims CSM releases also increase over time as the present value of claims begins to decrease more rapidly due to more of the ‘service’ being transferred (i.e. higher claims payments being made) in later years.

The present value of claims plus expenses carrier is different to the present value of claims carrier in early years, but the two converge in later years. The biggest difference in the present value of claims plus expenses is in the first policy year when initial expenses are paid and the carrier decreases significantly. Subsequent years see a similar pattern of CSM release happening on both claims and claims plus expenses carrier approaches.

The present value of premiums CSM carrier approach has a significantly different CSM release pattern compared to the other approaches considered. The premium carrier approach results in a greater CSM release early in the policy term, before

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**Figure 12** Comparison of CSM profiles under different run-off approaches

**Figure 13** Comparison of CSM releases under different run-off approaches
CSM releases decrease and level out later in the policy term. This CSM release profile arises because per policy premiums are level over the life of the policy, and therefore the expected premium actually received in each future year decreases as a result of decrements. It therefore appears that for a level premium contract the present value of premiums may not be an inappropriate carrier for the CSM, as it does not release the CSM in a way which reflects the (increasing) transfer of services under a contract.

4.5 Risk Adjustment Calculation and Run off
The risk adjustment is most often the smallest of the IFRS4 liability components, but it is the component which allows the most significant amount of discretion. The calculation method is not prescribed (the three methods to which it was previously constrained have now been made into recommendations) and neither is the strength of calibration (companies can calibrate the risk adjustment to their own risk appetites and it suffices that this is translated and disclosed as a confidence interval value).

Basic sensitivities of the base scenario risk adjustment calculation (i.e. cost of capital at 6% relating to a pseudo-SCR capital requirement according to QIS2) do not impact the overall base results significantly. This is because a different risk adjustment at inception (due to a different risk adjustment methodology) would be allowed for in the CSM at inception (provided the CSM is sufficiently large). The one result of this trade-off between risk adjustment and CSM at inception is a different pattern of profit release over the period. The extent of the difference in profit release profile depends on the extent to which the CSM and risk adjustment run-off patterns are different (in this investigation it typically appears that a cost of capital risk adjustment approach runs off more rapidly than a CSM using present value of claims as a carrier).

Figure 14 and Figure 15 illustrate the impact of different cost of capital rates on the magnitude of the risk adjustment and profit releases over time. Changing the cost of capital is a simple way to impact the risk adjustment calculation significantly. The value and run-off of the risk adjustment can also be impacted in a number of other ways, e.g. by using a different capital calculation method, or by targeting a different level of confidence, but these approaches are not considered here.

In the 10% cost of capital scenario the increase in risk adjustment (compared to the base risk adjustment) is greater than the magnitude of the base CSM at inception. This results in a positive overall liability and hence a loss at inception. This also results in a higher overall liability (due to a higher risk adjustment) throughout the life of the policy and consequently a higher profit release over the entire term of the policy (following the loss at inception).

The 3% cost of capital scenario produces a very similar profit profile to the 6% scenario. This is because a lower cost of capital results in a lower risk adjustment. However due to a corresponding increase in the CSM the overall level of liability at inception is unchanged (i.e. zero). This results in similar profit profiles over the duration of the policy, particularly near inception. Due to the fact that the risk adjustment runs off quicker than the CSM (as per the approaches used for these respective components)
the 6% cost of capital approach (higher risk adjustment) has lower profits later in the policy term when compared to the 3% cost of capital approach (lower risk adjustment).

To highlight the impact of the difference in speed of run-off of the risk adjustment compared to the CSM, we notice that despite being significantly larger in the beginning policy years, the 10% cost of capital profit stream (which purely consists of risk adjustment releases) runs off far quicker than the 6% and 3% streams (which consist of CSM and risk adjustment components). The result of this is that the 10% profit release is of similar magnitude to the 6% profit release in the final policy year.

Overall, IFRS4 results are more sensitive to the risk adjustment calculation method and calibration for low-profitability or loss making policies. This is a result of low-profitability policies having insufficient CSM to absorb a higher risk adjustment at inception. The excess risk adjustment then results in a positive overall IFRS4 liability

**Figure 14** Comparison of IFRS4 risk adjustment for different cost of capital rates

![Figure 14 Comparison of IFRS4 risk adjustment for different cost of capital rates](chart)

**Figure 15** Comparison of profit profiles under IFRS4 for different cost of capital rates

![Figure 15 Comparison of profit profiles under IFRS4 for different cost of capital rates](chart)
at inception. Further, this positive overall liability at inception will result in a loss at inception as well as a different release of profits over the life of the policy.

4.6 Indirect Acquisition Expenses
The single major difference in the recognition of cashflows between the FSV and IFRS4 approaches lies in the recognition of indirect expenses. IFRS4 does not allow recognition of indirect expenses and this can have a significant impact on the first year strain and liability and profit profiles when compared to the FSV approach, which does not distinguish between direct and indirect expenses. This scenario examines the impact of varying the proportion of initial expenses which are direct, but continues to assume that all renewal expenses are direct (as noted in 3.1 we have assumed all renewal expenses are direct in our examples).

A larger proportion of total initial expenses being direct (assuming a fixed amount of initial expenses) results in a lower loss at inception (or perhaps a profit). This is because direct expenses are included in (i.e. increase) the best-estimate liability calculated at inception and hence result in a lower CSM when compared to indirect expenses (which do not form part of the best-estimate liability and instead go straight to profit and loss in the first year). This means that when the direct expenses are paid during the first year the best-estimate liability goes negative to allow for them, resulting in zero profit impact. This is in contrast with indirect expenses which impact profit and loss as they are realised.

In addition to avoiding first year losses, a higher direct expense ratio results in lower future profits (since more of the profits are recognised near policy inception).

Figure 16 and Figure 17 illustrate the differences that the percentage of initial expenses that are direct can have on profit and liability profiles.

4.7 Premium and Sum Assured Escalations
Premium and sum assured escalations scenarios can consider different escalation rates of the premium and sum assured, as well as the impact of escalations being voluntary or compulsory. The distinction between voluntary and compulsory escalation impacts the FSV liability calculation as the FSV approach does not allow for voluntary premium increases. IFRS4 however includes both voluntary and compulsory premium escalations in its estimate of fulfilment cashflows and in so doing requires that all future escalations are modelled at their expected take-up rates. The impact of compulsory versus voluntary premium escalations is not considered in this paper. The impact of varying rates of escalation of the sum assured and premium are considered below.

The first escalation scenario looks at the scenario of compulsory premium and sum assured escalation of 8% and 6% per annum respectively. The starting premium paid on the base policy is then adjusted in order to bring the inherent profitability of the policy to 10%.

The results of this scenario are examined in Figure 18 and Figure 19 and follow a similar pattern to the base case with no escalations. Significant negative liabilities
remain under the IFRS 4 approach throughout the majority of the policy term (although they are smaller than under the FSV approach). The FSV approach has significant profits emerging at inception and thereafter lower (but increasing) profits for the remaining term. The IFRS 4 basis has level profits throughout and comes close to converging with the FSV profit level towards the end of the policy term.

A perhaps more interesting scenario is using the same starting premium as in the above scenario together with a 10% premium escalation (sum assured escalation stays at 6%). The result is a policy with profitability closer to 20% and a graph which shows significantly different profits and liabilities between the FSV and IFRS 4 approaches, as seen in Figure 20 and Figure 21.

![Figure 16](image)

**Figure 16** Comparison of IFRS 4 profit profiles for different proportions of direct initial expenses

![Figure 17](image)

**Figure 17** Comparison of IFRS 4 liability profiles for different proportions of direct initial expenses
The result is as expected under the FSV approach: a large profit at inception and large negative liabilities throughout the duration of the policy. IFRS 4 does not allow a negative overall liability at inception and hence the liability can never become more negative than the excess of cash outflows over cash inflows at the beginning of a policy. The large difference in liabilities between FSV and IFRS 4 approaches also means that there is a significant difference in the profit vectors, with IFRS 4 producing larger profits throughout policy duration compared to the high initial profit and low subsequent profits under the FSV approach.

**Figure 18** Profit profiles under IFRS 4 and FSV in escalation scenario: 8% premium 6% sum assured escalation

**Figure 19** Liability profiles under IFRS 4 and FSV in escalation scenario: 8% premium 6% sum assured escalation
4.8 Assumption Changes
Assumption changes impact the FSV and IFRS4 approaches differently due to the unlocking of the CSM under IFRS4. The CSM is unlocked for changes in future cashflows only; however changes in discount rates also give rise to differences between the two bases because IFRS4 makes use of OCI for recording discount rate changes. All assumption changes examined in this section are assumed to occur at the end of year 5.

**Figure 20** Profit profiles under IFRS4 and FSV in escalation scenario: 10% premium 6% sum assured escalation

**Figure 21** Liability profiles under IFRS4 and FSV in escalation scenario: 10% premium 6% sum assured escalation
4.8.1 Demographic Assumption Changes

Only changes in mortality assumption are considered for demographic assumption changes. Different levels of withdrawal assumption and changes in the level of withdrawal assumptions were examined briefly but are not presented in this results section. For the base term assurance policy withdrawals result in a profit or loss to the insurer depending on whether the policy liability is positive or negative at time of withdrawal (there is no payment on withdrawal). The more significant impact of withdrawals is on the number of policies in force, but since the withdrawal (and mortality) assumptions and hence number of policies in force are the same for both IFRS4 and FSV approaches, the impact on liability and profit profiles of the two approaches is the same. Withdrawals are not considered further in this investigation.

First demographic scenario: Small (5%) permanent increase in future mortality rates (Figure 22)

Under IFRS 4, the base policy has a CSM and that CSM is sufficient to absorb the impact of the small change in future best-estimate liabilities. Hence the results in Figure 22 show that there is only a small change in profits in year 5 (this is due to the change in risk adjustment, which is never absorbed by the CSM). Future profits under IFRS 4 are however lower as the CSM is smaller, resulting in smaller future profit releases. Under the FSV approach the entire assumption change is capitalised at the end of year 5 since there is no dampener or absorption mechanism. This means that a loss comes through in that year, but profit in future years is almost unaffected. The small increase in future years’ profits is a second-order impact of the increase in the value of the compulsory mortality margin.

The corresponding picture for the liability profiles is similar to the profit profiles. The IFRS 4 liability is almost unchanged due to the increase in best-estimate liability.

![Figure 22 Comparison of base profit profiles under IFRS 4 and FSV with small mortality assumption increase](image-url)
component being offset by a decrease in the CSM liability component. The FSV liability changes significantly at year 5 as the assumption change is fully capitalised at the time of the change.

**Second demographic scenario: Large (20%) permanent increase in future mortality rates (Figure 23)**

For this scenario the change in best-estimate liability under IFRS 4 is larger than the magnitude of the CSM at the time of the assumption change and the entire change cannot be absorbed. The change in best-estimate liability which cannot be absorbed by a reduction in the CSM results in an immediate loss and therefore an increase in the overall liability level at the time of the assumption change. Profits emerging subsequent to the assumption change under IFRS 4 will be significantly lower and will comprise only of the release of risk adjustment as the CSM has been reduced to zero as part of the assumption change.

Under FSV the large demographic assumption change has a very significant impact on profits in the year it is made. This is because the assumption change is permanent and affects mortality for the remaining policy term. Once again, future profits under the FSV approach are almost unaffected.

**Third demographic scenario: Small (−10%) permanent decrease in future mortality rates (Figure 24)**

This scenario constitutes a weakening of the demographic basis and an accompanying increase in profitability of the policy. IFRS 4 requires that any favourable change (i.e. reduction) in best-estimate liabilities is offset by an increase in the CSM. This means that at the time of the assumption change there will be very little impact on profit (apart from changes in the risk adjustment as a result of the assumption change).

![Figure 23 Comparison of base profit profiles under IFRS 4 and FSV with large mortality assumption increase](image-url)
Subsequent years will however have a higher profit release as there will be a larger CSM which is running off. There is no limit to how large the CSM can become as a result of introducing favourable assumption changes.

Under the FSV approach, the assumption change results in an immediate profit in the year it is made and very little change to profits in subsequent years.

4.8.2 Discount Rates

Unlike demographic changes, changes to the discount rate are not absorbed by the CSM under IFRS 4. The objective however is to avoid any accounting mismatch (and hence volatility of profits) where no underlying economic mismatch exists. For this reason IFRS 4 makes use of the other comprehensive income (OCI) section of the income statement to reflect changes in the value of assets and liabilities due to changes in discount rates (at a high level). This means that relatively volatile movements in assets and liabilities resulting from market changes are confined to the OCI, whilst more stable earnings appear in profit and loss.

Figure 25 shows the relative impacts on the FSV and IFRS 4 approaches (on total comprehensive income including both OCI and profit and loss) for a level 2% increase in discount rates at the end of year 5 for the rest of the policy term. The profit profile reflects the impact of the change in discount rate on the IFRS 4 and FSV liabilities but does not take into account corresponding movement in the insurer’s asset values.

Overall, an increase in the discount rate decreases profits and increases liability in the year of the change. The FSV basis appears more sensitive to the increase in discount rate than IFRS 4 in this case. This is because the CSM under IFRS 4 is unaffected by changes in the discount rate in the year in which the discount rate changes, whereas the entire FSV liability is affected by the change in discount rate.

There is however a change in the CSM in subsequent years as the CSM run-off

![Figure 24 Comparison of base profit profiles under IFRS 4 and FSV with mortality assumption decrease](image-url)
pattern changes due to a change in the value of the CSM carrier (which is the present value of claims in this scenario). Therefore under IFRS 4 only the best-estimate liability and the risk adjustment components are affected by the discount rate change in the year that the change occurs. Under FSV, the entire liability is impacted by changes in the discount rate and hence the FSV liability is more sensitive to discount rate changes than the overall IFRS 4 liability.

Compared to an increase in discount rate as discussed above, a decrease in discount rates has an impact of similar magnitude, but in the opposite direction for both the FSV and IFRS 4 results (i.e. profits increase and liabilities decrease in the year in which the discount rate changes).

The change in liability however only represents half the picture in terms of the overall impact a change in discount rates will have on an insurer’s profits. The other half of the picture is of course the change in the value of the assets backing the liabilities. To the extent that the assets are matched to the liability (in terms of currency, amount and timing), the overall impact on profit should be zero on a financial reporting basis that accurately reflects the true economic profits.

We have not attempted to illustrate the impact of asset movements in our profit profiles. Apart from the subjectivity of assuming the degree of matching, the situation is made more uncertain by pending changes to IFRS9.

4.9 Transition
In the ideal situation, insurers would have access to perfect information regarding policy history and would be able to calculate the IFRS 4 liability on transition accurately. This means that the IFRS 4 liability on transition would be the same as the IFRS 4 liability as determined at any future point in any of the above scenarios. The

![Figure 25 Comparison of base profit profiles under IFRS4 and FSV with discount rate increase](image-url)
impact of the change from FSV to IFRS 4 at transition would then be the move from the FSV liability to the IFRS 4 liability at the projected time point.

However, in reality insurers do not have perfect historical information available for all their policies (in particular for older books of business). The best-estimate liability and risk adjustment components of the IFRS 4 liability are fully prospective and do not require historical information to determine their value at transition. The difficulty however comes in estimating the CSM at transition because it requires the value of the CSM at inception, and hence the value of the best-estimate liability and risk adjustments at inception as well as the original premium paid. To determine the value of these components at inception, the IASB has allowed some simplifications.

The first simplification is to allow the insurer to use the value of the risk adjustment at transition as the value of the risk adjustment at policy inception (Appendix C6(b)). Since the risk adjustment typically decreases over the life of the policy, using a later risk adjustment at inception will result in a higher CSM at inception than if perfect information had been available, all else being equal. In turn, a higher CSM at inception will result in a higher CSM (and hence higher overall insurance liability) at transition than if perfect information were available. Overall, this suggests that the gap between the FSV liability and IFRS 4 liability on transition would be higher than it would be without the simplification (for a profitable policy the FSV liability is typically lower than the IFRS 4 liability).

The second simplification relates to the estimates of the best-estimate liability at inception. In the absence of best-estimate assumptions at inception, the insurer is allowed to use actual historical cashflows to determine the value of the best-estimate liability at transition. To the extent that actual cashflow experience was in line with the best-estimate assumptions that would have been in place, this simplification would have no impact on the value of the CSM at inception and therefore the IFRS 4 liability on transition relative to the FSV liability. Similarly, there would be no impact on the CSM for the third simplification relating to discount rates if simplified estimates of discount rates at inception are in line with the actual discount rate at inception.

For existing insurers the impact at transition will be on a diverse in-force book and not at a single policy projection year. A simplified replication of this was created by examining the future profit releases and the projected liability profile of a book of 10 base scenario term assurance policies sold evenly over the last ten years. The results of this replication are displayed in Figure 26 and Figure 27.

The results show a far higher level of profit emergence over the life of the policy portfolio under the IFRS 4 basis. This is the result of a much larger liability on transition which effectively recaptures the profits which the FSV method released on inception in the base scenario. This recapture or increase in the value of the liability on transition is put directly through as a reduction in equity (according to the transition guidance in IFRS 4) and does not impact the income statement in the year of transition. The biggest difference in profits is in years 2–5 after which the profit and liability profiles begin to converge.
4.10 Endowment Policy
Altering the policy type to an endowment with a guaranteed payment of the sum assured at maturity does not bring any significantly new results. Overall the profit under the FSV approach is higher at inception and lower throughout the life of the policy, when compared to IFRS4. Significant reserves build up for an endowment policy and as a result the best-estimate liability component is the most significant component of overall liability profile under both FSV and IFRS4 approaches. This results in the overall liability profiles under the FSV and IFRS4 approaches being similar because they are based on the same best-estimate liabilities.

Figure 28 and Figure 29 show this for a mildly profitable policy (inherent profitability of 5%). A more profitable endowment policy would have more marked

![Figure 26](image)

**Figure 26** Comparison of profit profiles for IFRS4 and FSV in a transition scenario

![Figure 27](image)

**Figure 27** Comparison of liability profiles for IFRS4 and FSV in a transition scenario
differences in profit and liability profiles, whilst an unprofitable policy would have results which are more similar (i.e. both approaches result in a loss at inception and a low level of profits emerging over the life of the policy). Even though the magnitude of the profits is similar in this scenario, the shapes of the profit profiles are different with the FSV profits increasing towards policy maturity and the IFRS 4 profits decreasing. This is however dependent on the measure chosen for the risk adjustment calculation and the rate at which it runs off, as well as the choice of run-off for the CSM.

4.11 Whole of Life
Extending a 15 year term policy to a whole of life policy does not bring about any surprising results. The FSV basis recognises profits at inception if the contract is

![Figure 28](image1.png)

**Figure 28** Comparison of profit profiles under IFRS 4 and FSV for an endowment policy

![Figure 29](image2.png)

**Figure 29** Comparison of liability profiles under IFRS 4 and FSV for an endowment policy
profitable, and then has subsequently lower profits over the policy term. The IFRS 4 liability is greater over most of the contract term of a profitable contract, since the CSM is greater than the compulsory margins in the FSV.

5 CONCLUSIONS
Where theoretical differences exist between the FSV and IFRS 4 approaches the impact of these differences was examined in Section 4 through various scenarios for simple South African life insurance products. The results of these scenarios were compared and have yielded some interesting results. The scenarios which resulted in the most significant impacts on insurer financial performance and financial position are now discussed.

5.1 Best-estimate Liability
Both the FSV and IFRS 4 approaches are based on a similar set of best-estimate cashflows. The major difference in these cashflows is regarding the expenses which are included in the liability calculation. IFRS 4 does not allow indirect expenses to be included in the best-estimate liability whereas the FSV approach does.

Initial indirect expenses, which are excluded from the best-estimate liability, result in a loss in the first year under IFRS 4. The lower best-estimate liability that arises from excluding indirect expenses results in a correspondingly higher CSM at inception which is not directly reduced when the indirect expenses are incurred, resulting in a loss. Direct expenses on the other hand are offset by reductions in the best-estimate liability when incurred. There will no doubt be increased scrutiny by insurers on the allocation of their expenses between direct and indirect expenses.

The subsequent rate of profit recognition under IFRS 4 is dependent on the release of the CSM and risk adjustment over time and it will also be of interest to see what carriers companies settle on as being appropriate measures of the rate at which they render their services. A carrier based on “claims plus expenses” where “expenses” includes initial expenses can help offset the strain of not providing for indirect initial expenses compared to a carrier based purely on “claims”. The indirect initial expense in the first year would be offset by a more material release of CSM in the first year. This interaction is complex but important since the CSM run-off is an integral part of IFRS 4 profit releases over time.

A further difference in the recognition of cashflows between the FSV and IFRS 4 approaches is regarding voluntary premium escalations. The FSV approach does not allow for voluntary escalations while IFRS 4 requires a best-estimate of voluntary premium escalations to be included in the determination of the best-estimate liability. However, since IFRS 4 does not recognise profits at inception the inclusion of premium escalations does not impact insurer results significantly (as the CSM tops up the total liability to eliminate profit at inception). Once the escalation option is taken up, the FSV basis would allow for profits to be released at the time the option is taken up, despite them not being explicitly included in the liability and profits at inception.
Examination of a simple whole of life policy did not lead to any additional conclusions as the differences and features were very similar to the base scenario term assurance policy. A similar examination of a simple endowment policy did not lead to new conclusions either, but it was noted that because of the significant build-up of reserves over the policy period, the FSV and IFRS 4 liabilities were more closely related than under a term policy.

5.2 CSM

The use of the CSM under IFRS 4 to eliminate profits at inception is a significant change from the FSV approach which allows profits at inception. The mandatory minimum level of deferment introduced by the CSM for profitable contracts is significantly higher than the deferment provided by compulsory margins. This serves to reduce first year profits (and, in cases where there are significant indirect acquisition expenses, incur first year losses) and increase the future profit releases over the life of a policy.

In principle, the FSV approach need not result in excessive profits emerging at policy inception: discretionary margins can be used to spread the profits appropriately over the policy term. In practice, discretionary margins may not always have been used to effect a smooth release of profit in line with the service rendered. An example is the zeroisation of negative FSV liabilities which prevents significant profits at inception, but can be a bit ‘blunt’ in resulting in an initial strain followed by high profits in each year where the liability remains zeroised. Once the liability turns positive, the discretionary margin is no longer in effect and the profit release reverts to releases as a result of compulsory margins only. These compulsory margins can be very small when compared to the profits released in earlier policy years, which is not necessarily representative of the risk that the insurer is exposed to, nor the service provided by the insurer (particularly when compared to earlier years in the policy term).

The discretion allowed under IFRS 4 in the approach used to run off the CSM over the life of a policy has the potential for different insurers to produce materially different profit release patterns for similar policy types. However, the range of reasonable run-off patterns for a particular policy type is substantially narrower than the range of feasible discretionary margins and the comparability of profit and liability profiles of insurers is likely to be significantly greater. One of the more interesting interactions is that of the run off of the CSM carrier which uses claims plus expenses with the payment of indirect expenses. As discussed in section 5.1 the use of this CSM carrier can absorb some of the initial strain.

For unprofitable or marginally profitable policies where the CSM is zero, the value of deferred margins under the FSV approach is greater than the risk adjustment as determined in this investigation. This means that the FSV approach results in a higher reserving strain at policy inception and higher subsequent profit releases later in the policy term. Whereas for more profitable contracts, IFRS 4 is normally more onerous than the FSV at inception, in this case IFRS 4 would be less onerous (provided that the indirect component of initial expenses is not too large).
The determination of the CSM on transition to the IFRS 4 approach is problematic because it is dependent on the value of the CSM at inception of the contract. To determine the CSM at inception requires the value of the best-estimate liability and risk adjustment at inception and these calculations may require more historical assumptions and cashflow information than an insurer currently has available. Despite the simplifications available to insurers on transition, insurers should aim to begin collecting and recording relevant information in terms of best-estimate cashflow and interest rate assumptions at inception in preparation for the implementation of IFRS 4.

5.3 Risk Adjustment
Neither the method nor the strength of calibration used to calculate the risk adjustment under IFRS 4 is prescribed. This means that insurers with different risk appetites can determine quite different risk adjustment values.

In the case of profitable contracts, variation in the risk adjustment approach is absorbed by compensating changes in the CSM, so the total liability at inception for insurers valuing the same portfolio with a different risk adjustment will not be different, but the run-off over time will differ. Certainly in the case of unprofitable contracts where there is no CSM, different approaches to the risk adjustment will reduce comparability of reporting.

The requirement to translate and disclose the risk adjustment to a confidence interval will provide an understanding of the strength of the risk adjustment calibration, but it will not allow for direct comparison of published results between insurers with vastly different risk appetites. This is a potential shortcoming in the attempt to improve comparability of insurer results under IFRS 4.

The risk adjustment approach used in this investigation (cost of capital at 6% on a pseudo-SCR calculation as per the latest SAM requirements) produced a smaller increase in liability than that produced by the FSV compulsory margins. Also, where the magnitude of the expected FSV margin releases typically increases, the magnitude of the expected risk adjustment releases under IFRS 4 typically decreases over the life of a term assurance policy. Different approaches to calculating the risk adjustment and different decrement assumptions may however result in a different magnitude and release of risk adjustment over time.

5.4 Assumption Changes
Demographic assumption changes have a more significant impact under the FSV approach than under IFRS 4. Under the FSV approach there is no mechanism to offset the impact of demographic assumption changes and any positive or negative assumption changes result in a direct impact on profit or loss. Under IFRS 4, policies with a positive CSM will utilise the CSM to offset any adverse change in best-estimate liability, to the extent that the change is smaller than the CSM. Any adverse change in excess of the CSM results in a loss for the period. Positive assumption changes will
always increase the CSM under IFRS 4 and never result in an increased profit in the year in which they are made.

The result of this is that a demographic assumption change under IFRS 4 will have minimal impact on the liability and profit level in the year in which it is made. However that assumption change will impact the future liability profile and profit releases as the value of the CSM and risk adjustment will have been affected, hence impacting their respective future releases.

Under IFRS 4, when the CSM has been depleted to zero, an adverse demographic assumption change impacts the profit and loss statement directly. However, that impact under IFRS 4 will remain slightly smaller compared to the FSV approach. This is because the compulsory margins on the FSV approach typically exceed the IFRS 4 risk adjustment and are also sensitive to changes in assumption.

Changes in the discount rate assumption do not impact the CSM under IFRS 4. Instead, all changes in discount rate go straight to OCI (a component of total comprehensive income). The FSV approach also allocates the entire change in discount rates into profit and loss. However, the FSV liability (and hence profits) are slightly more sensitive to discount rate changes since the entire FSV liability is usually sensitive to discount rate changes. Under IFRS 4, the CSM is not affected by discount rate changes at the time the change is made. Therefore, to the extent that the CSM forms a large component of the overall IFRS 4 liability, the sensitivity of the IFRS 4 liability to discount rate changes is reduced.

5.5 Overall
The FSV approach results in a profit at inception which is volatile depending on the inherent profitability of the policy. This is because, unless discretionary margins are used, the same quantum of compulsory margins is deferred regardless of the premium level charged on a policy. The IFRS 4 approach does not allow profits at inception which means that the profit arising in the first year is independent of the profitability of the policy. Furthermore, the amount of profit deferred at inception is dependent on the overall profitability of the policy, ensuring that profits are always spread over the policy term.

The minimum margin required under the IFRS 4 approach (the risk adjustment) is typically less than the minimum margin required under the FSV approach (compulsory margins). This might raise concerns with regard to the prudence of liabilities for marginally profitable policies under IFRS 4, but financial soundness and solvency is a regulatory issue addressed under a different basis. The FSV allows discretion to introduce additional discretionary margins. On onerous contracts, discretionary margins might accentuate the loss at inception but be appropriate in order to reduce the probability of further losses emerging in all future years.

The move from the FSV approach to IFRS 4, and the accompanying removal of this discretionary allowance, will however improve comparability of financial results between insurers. This reduction in discretion may also result in more volatile earnings
for insurers as a tool for the smoothing of company results over time will have been removed. The impact of this will depend on the relative size of the CSM compared to the discretionary margin and their respective run-off patterns.

Over the life of any policy, as the best-estimate liability becomes a more significant component of the IFRS 4 overall liability (i.e. as the risk adjustment and CSM run down), the IFRS 4 liability will converge towards the FSV liability since at their heart, the best-estimate liabilities are largely the same under both approaches (with the exception of indirect renewal expenses which have been ignored in this analysis). There will always be some degree of difference depending on the different run-off pattern of the compulsory margins relative to the CSM and risk adjustment. Typically we have found the CSM and risk adjustment near the end of a policy term to run off faster than the compulsory margin on the FSV basis.

Overall, IFRS 4 will bring significant changes to profit reporting for South African life insurance contracts. The exclusion of indirect expenses from fulfilment cashflows, the use of CSM to absorb profits at inception and at subsequent assumption changes, and the reduction in the discretion available to insurers in calculating their insurance liabilities are some of the major changes explored in this paper. These, together with the other components of IFRS 4 which were not explored thoroughly in this paper (Appendix A), will require significant investment from South African insurers over the coming years to ensure that they are understood, implemented and used to meet the IFRS 4 objective of producing more relevant, reliable and comparable profit reporting for insurers around the world.

ACKNOWLEDGEMENTS

Very appreciative thanks go to the co-authors and supporters of this paper, Peter Tripe and Dave Strugnell, for their guidance, suggestions, patience, reviews and advice. Special thanks also go to Peter Withey, Carike Nel and Kathryn Dreyer for their insightful reviews and meaningful comments on the various draft versions of the paper, all provided at very short notice. Final words of thanks go to Matthew Brittan for being a sounding-board for ideas and always being willing to take up a discussion and provide advice.
REFERENCES
APPENDIX A: ISSUES NOT CONSIDERED IN THIS INVESTIGATION

The investigations conducted in this paper and the results produced are based on the June 2013 IFRS 4 Exposure Draft with a number of simplifying assumptions. Certain issues were deliberately not considered due to the uncertainty surrounding them for future IFRS 4 standards. This allowed the investigations to focus on the key IFRS 4 principles which departed from the FSV approach and were unlikely to change in the final published IFRS 4 standard. Some of the complications and uncertainties which were not considered in the investigation are briefly outlined below.

Availability of information
One of the major concerns for insurers in implementing the IFRS 4 standard will be the availability of current and historical information to perform the required measurement calculations and financial disclosures. This investigation assumed perfect information was available for all scenarios.

Actual experience
The actual experience over a policy term was assumed to be the same as the expected experience for all scenarios.

Presentation
The determination and presentation of premium revenue, the split of investment premiums from insurance premiums for presentation and the split of asset and liability value changes between OCI and profit and loss are all fairly contentious issues in the draft standard. This investigation briefly touched on the issue of the use of OCI, but did not delve into the premium presentation. No consideration was made as to the reconciliation requirements of IFRS 4.

Use of cohorts
The investigation looked at a single policy projection. This is theoretically equivalent to investigating a cohort of identical policies sold at the same time.

Complex policy features
Only simple policies without any options, riders, discretionary participating features, bells or whistles were considered in the investigation.

With profits policies, the mirroring approach and IFRS9
The investigation only considered non-profit conventional policies, not considering the complexities around the treatment of with profit policies and the mirroring approach. The investigation focused solely on the impact of IFRS 4 on the value of insurance liabilities and no consideration was made as to the impact of changes in IFRS 9 on insurer financial results.
Reinsurance
No reinsurance was applied to the policies considered.

Premium allocation approach
Only the building block approach was considered in this investigation.

APPENDIX B: POLICY DETAILS AND ASSUMPTIONS

The following is a description of the policy and assumptions used in the base scenario, as well as the level of annual premium assumed in scenarios where premium level changed.

Policy description
Type of policy  Term assurance
Tax status  Non-taxable
Contract term  15 years
Premium term  15 years

Sex of policyholder  Female
Age at entry  40 last birthday

Annual premium  R1 000 p.a.
Sum assured  R100 000
Premium and sum assured escalation  None

Best-estimate assumption
Non-economic
Initial expenses  R1 000
Renewal expenses  R100 p.a.
Commission  30% of initial annual premium
Mortality  80% of SA85–90 (light)
Aids  20% of ASSA2008
Lite national female rate (starting in year 2012)

Withdrawals:
Year 1  15%
Year 2  10%
Year 3+  5%
**ECONOMIC**

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<tr>
<th>Parameter</th>
<th>Description</th>
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<td>Investment return</td>
<td>Nominal forward swap curve at 31 Dec 2011 as provided by FSB for QIS2.</td>
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<tr>
<td>Discount rate</td>
<td>Same as investment return</td>
</tr>
<tr>
<td>Inflation</td>
<td>Difference between nominal forward swap and real forward swap curves at 31 Dec 2011 as provided by FSB for QIS2, +1%</td>
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**IFRS4 specific assumptions**

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<th>Parameter</th>
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<td>Proportion of initial expenses that are direct</td>
<td>80% of initial expense (excluding commission)</td>
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<td>Risk adjustment calculation method</td>
<td>Cost of capital on QIS2 Life SCR</td>
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<tr>
<td>Cost of capital rate</td>
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<td>CSM carrier for run-off</td>
<td>Present value of future claims at discount rate</td>
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**FSV specific assumptions**

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<td>Compulsory margins</td>
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**Premium levels assumed in scenarios**

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<td>Higher premium</td>
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<tr>
<td>Lower premium</td>
<td>R800 p.a.</td>
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<td>Premium and sum assured escalation</td>
<td>R825 p.a.</td>
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<tr>
<td>Cost of capital sensitivities (10% and 3%)</td>
<td>R900 p.a.</td>
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<tr>
<td>Endowment</td>
<td>R5 000 p.a.</td>
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<tr>
<td>Whole of life</td>
<td>R1 300 p.a.</td>
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