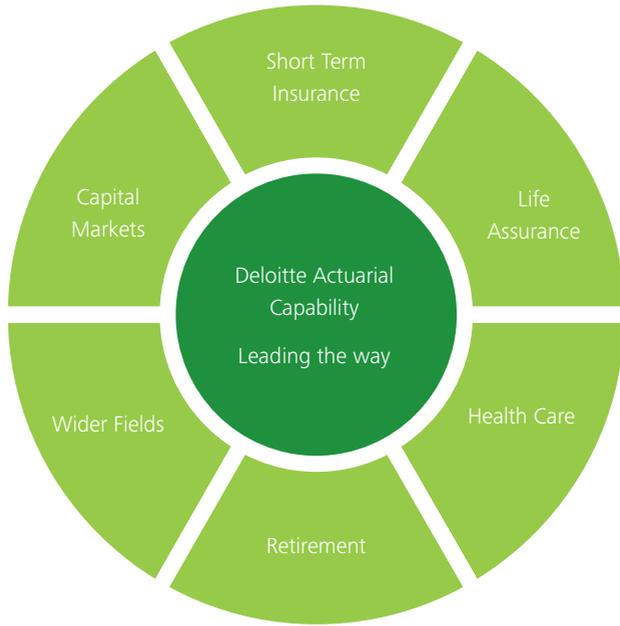


Our Actuarial Capabilities  
Holistic solutions

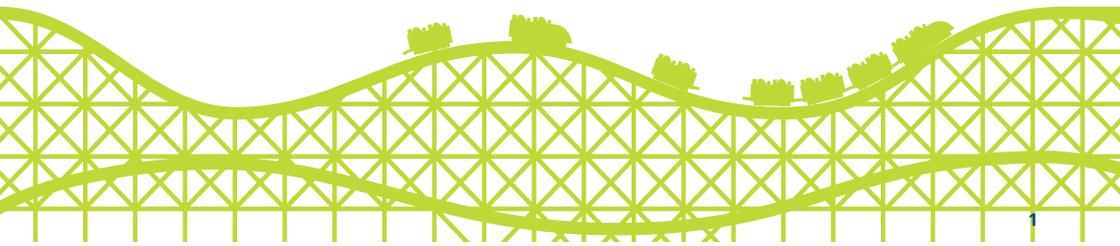


In Southern Africa Deloitte boasts a team of over 80 Actuarial professional staff, with market leading skills in Life Insurance, Non-Life Insurance, Healthcare, Banking, Pensions and Wider Fields. We are supported by over 750 Actuarial Professionals worldwide, operating in more than 40 countries. With the support of our Audit, Tax, Legal, Risk and Consulting colleagues we believe we have the right team to solve all your actuarial problems.



Deloitte has a specialist team of actuaries servicing various industries, from banking, healthcare and insurance to wider non-financial industries such as mining houses, airlines, retailers and parastatals. We are dedicated to providing the skills, expertise and experience that will help our clients succeed through client specific solutions from traditional actuarial work through to data analytics and financial modelling. Our emphasis is on providing the very best actuarial and consulting people, techniques and thinking, which is applied with the right focus to the commercial imperatives of our clients.

This document contains a very brief overview of some of the actuarial services offered by Deloitte.



## Life Assurance

At Deloitte, we provide specialist advice on a wide range of actuarial and related business issues, drawing on our industry knowledge and global actuarial skills. We provide actuarial and risk management support to a significant number of South African life insurers. We also have experience in providing actuarial solutions to clients in the rest of Africa, Asia and Europe. In addition, we are able to leverage off the relationships and experience of practitioners in our international offices in the UK, Europe, Asia, America and Australia, and within other divisions of Deloitte.

---

We have extensive global and local experience in assisting insurance organisations with SAM implementation related work. We also have a number of clients for whom we provide services such as merger and acquisition advice, process reviews and risk reviews, product development and strategic advice.

Deloitte also perform the role of statutory actuary to a significant number of South African and other African life insurers and assist in the actuarial audit of a number of other insurers.

**Our services offered include:**

- SAM and Solvency II implementation advice
- Actuarial model development and consolidation (Prophet, MoSes and other modelling systems)
- Capital management and modelling
- Statutory valuation and appointed actuary services
- Product development and pricing
- Enterprise risk management
- Reserving for guarantees
- Experience analyses
- Bonus rate and unit price setting and review
- Profit reporting
- Embedded and appraisal values
- Treating Customers Fairly (TCF) frameworks
- Due diligence services and Merger and Acquisition advice
- Review and advice on reinsurance arrangements
- Asset Liability Modelling
- Risk analyses; development of Risk Strategy and Risk Appetite statements and metrics
- Stochastic projections
- Implementation and interpretation of IFRS
- New insurance licence applications and business plan development
- Secondment of skilled resources at all levels
- Executive training.

**Contact: Carl Van der Riet**

Tel: +27(0)11 209 8115

Email: [cvanderriet@deloitte.co.za](mailto:cvanderriet@deloitte.co.za)

## Health Care

The Health Care market requires extensive actuarial involvement, and we have developed significant actuarial expertise in this area. We advise a large number of health care players, and we are recognised as one of the leading health care actuarial consultancy firms in Africa. Our services also cover health insurance and social security entities.

Our approach is based on the following principles:

- Detailed data analysis
- Rigorous mathematical and statistical methods and analysis
- Interpretation taking heed of industry developments
- Interpretation in the international context
- Independence
- High professional standards
- Good working relationships with health care players
- Integration of analytical and clinical skills

Our services include:

- Product design, pricing and benefit limit revisions
- Incurred But Not Reported (IBNR) reserving and modelling
- Capital modeling strategies including risk based capital
- Experience investigations
- Statistical and actuarial modeling
- Disease modeling (including HIV/AIDS) and financial impact analyses
- Risk management assessments.
- Redesigning and costing of service provider tariffs or reimbursement models
- Developing dynamic activity based costing and demand models
- Advice and development of risk sharing arrangements
- Advice on appropriate alternative reimbursement arrangements
- Assessing and designing managed care and other interventions
- Post retirement medical assistance liability assessments under IAS19

Advice on amendments to regulations and legislation:

- Health reform advisory and modeling
- Healthcare service provider tariff costings
- Healthcare strategy
- Service delivery model design
- Benchmarking
- Demographic modeling
- Employer based healthcare
- Develop and implement monitoring and evaluation frameworks
- Due diligence advisory services
- Audit reviews

By advising on multiple facets of the healthcare industry as well as being active on industry specific task teams we are able to bring superior skills to the provision of services.

**Contact:** Ashleigh Theophanides

Tel: +27(0)11 209 8112

Email: [atheophanides@deloitte.co.za](mailto:atheophanides@deloitte.co.za)



### Wider Fields

Financial insight and the ability to project financial impacts is vital to any organisation, regardless of the industry in which it operates.

---

We are able to provide leading edge analytical skills and, if necessary, pair this with other subject matter expert input from the vast range of skill-sets contained within Deloitte.

Our speciality is in assisting clients to use the data that they already have, to develop business strategy through the modeling of business processes and outcomes. Our models are applicable to a large number of strategic business problems and our ability to create bespoke models for each scenario under review allows us to add real value to clients. We are able to assist clients at all levels along the data value chain: data collection, management, synthesis, validation, analysis and interpretation. Also, we are able to utilise our analytical, actuarial and statistical abilities to uncover actionable insights that can enhance operational, tactical and strategic decision making.



The services we are able to offer cover all industries and include, but are not limited to:

- Financial modeling including:
  - Revenue models
  - Sustainability modelling
  - Project finance
  - Activity based costing
  - Financial feasibility assessments
  - Capital budgeting
- Due diligence of financial models
- Statistical and actuarial analysis including:

- Customer segmentation analysis
- Customer behavioural analyses
- Business intelligence and performance measurement
- Predictive modeling
- Data Mining and churn analysis
- Supply chain analytics
- SAS modeling skills

**Contact: Ashleigh Theophanides**

Tel: +27(0)11 209 8112

Email: [atheophanides@deloitte.co.za](mailto:atheophanides@deloitte.co.za)

**Contact: Pravin Burra**

Tel: +27(0)11 209 8118

Email: [pburra@deloitte.co.za](mailto:pburra@deloitte.co.za)



## Retirement

The retirement fund team advises a range of clients from major corporations to small companies in both the public and private sector on a variety of retirement fund matters. Our practice is built on providing professional, independent advice with carefully maintained practice standards. We work closely with other professionals so are able to integrate our Actuarial capabilities with strategic and operational thinking.

Our services to the retirement fund industry include, but are not limited to, the following:

- Benefit design and review
- Advice on conversion from defined benefit to define contribution
- Valuation of defined benefit funds (including IAS19 disclosures)
- Surplus apportionment
- Development of pension increase policy
- Actuarial advice to defined contribution funds
- Determination of defined contribution interest rate declarations
- Modelling the financial impact of HIV/AIDS
- Impact of new legislation on retirement funds

- Assistance with selection of fund administrator and investment managers
- Due diligence calculations
- Audit reviews
- Estimation of replacement ratios based on different investment scenarios
- Investment advice:
  - Development of an investment philosophy that is consistent with the purpose of the fund
  - Assistance in development of detailed set of investment objectives and risk constraints
  - Stochastic modelling of investment scenarios and impact of these scenarios on the fund
  - Determining the portfolios that make up the efficient frontier
  - Asset liability modelling
  - Design of a life stage investment model.

**Contact:** Mark Harrison

**Tel:** +27(0)11 209 8117

**Email:** [marharrison@deloitte.co.za](mailto:marharrison@deloitte.co.za)

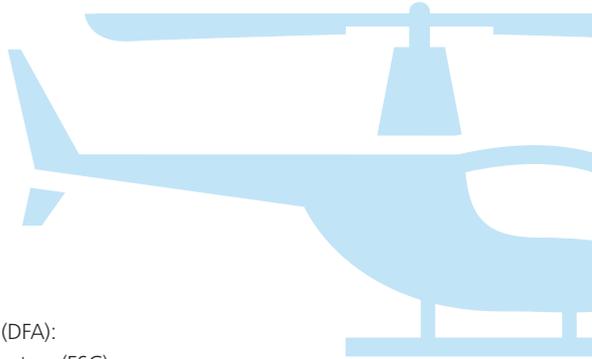
## Short Term Insurance

Deloitte has one of the largest dedicated Short Term Insurance consulting teams in the market and provides leading actuarial advice to its clients. Our dedicated Short Term Insurance team boasts a wide range of experience and depth of knowledge of the Short Term Insurance Industry. In addition, we are able to leverage off the relationships and experience of practitioners in our international offices in the UK, Europe, America and Australia.

Within the Short Term Insurance team our client base ranges from typical Short Term Insurers and Reinsurers to Motor manufacturers, Regulators and State Own Enterprises, including both local and foreign clients.

The main services provided by our Short Term Insurance team are as follows:

- Statutory Actuary for Short Term Insurers:
  - Fulfilling the complete role of independent Statutory Actuary
  - Sign-off with a Short Term Insurance general practising certificate
- Valuations:
  - Reserving
  - Embedded value
  - Due diligence
- Capital and Solvency Modelling:
  - Assistance with IMAP
  - Development or validation of Economic Capital models (including Remetrica, @Risk)



- Dynamic Financial Analysis (DFA):
  - Economic Scenario Generators (ESG)
  - Stochastic modelling
  - Reinsurance optimisation
- Solvency Assessment and Management (SAM) and Solvency II:
  - Assistance with implementation of “Proportional” SAM solutions – in line with the complexity, size and risk of the insurer.
  - Implementation assistance across Pillar I and II, as well as preparation for Pillar III.
  - Development of Risk Management policies for short term insurers.
  - Design of ORSA
- Pricing and product design:
  - Build and review of rate books
  - Generalised Linear Modelling
  - Underwriting processes
  - Product development advice
- Other:
  - Management and director’s training
  - Merger and acquisitions
  - Experience investigation for pricing, management information and reserving
  - Financial modelling and business planning
  - Audit support
  - Secondment of actuarial resources to clients.

**Contact:** Jaco van der Merwe

Tel: +27(0)11 209 8163

Email: [javandermerwe@deloitte.co.za](mailto:javandermerwe@deloitte.co.za)



## Capital Markets

Capital Markets is an established advisor within the financial services industry. Our vision is to make the Capital Markets service team the leading provider of advisory services to financial services institutions.

---

We offer a wide array of both qualitative and quantitative services across the fields of credit risk, market risk, operational risk, strategic risk, asset & liability management, regulatory consulting and primary and derivative financial instrument valuations.

Our key service offerings are:

***Credit risk:***

The credit risk team offers a wide range of qualitative and quantitative services within the financial services industry, throughout the credit risk management lifecycle. These services include:

- Design, development and implementation of credit risk management frameworks
- Credit risk process re-engineering
- Development and calibration of credit risk scorecards within the corporate, retail and SME environments
- Validation and compliance of credit risk models and frameworks in relation to regulatory and Basel II requirements and
- Construction of statistical measures for credit risk model performance assessment purposes.

- Credit impairment modelling:
  - Retail credit
  - Corporate credit
  - Operational risk management:
    - Best practice consulting on Basel II operational risk methodologies
    - Design, development and implementation of operational risk management frameworks
    - Implementation of vendor developed and/or co-developed operational risk systems
    - Validation of operational risk framework methodologies prior to regulatory approval and
    - Review of operational risk regulatory returns.

***Market risk management:***

- Design, development and implementation of market risk frameworks
- Design and validation of models required by the SARB to meet new market risk regulations
- Design and re-engineering of market risk processes
- Design and development of quantitative market risk measurement models and methodologies.

Asset and liability management which includes the design, development and implementation of ALM frameworks and policies as well as analytical techniques to assist the decision making process.

***Actuarial & Quantitative Solutions:***

This specialist team of quantitative analysts and actuaries have strong local and international market knowledge as well as advanced quantitative financial modelling skills. In conjunction with this quantitative expertise, the team brings accounting, regulatory and industry best practice knowledge to deliver comprehensive market and credit risk advisory solutions to their clients. They also assist clients with the pricing and measurement of their various risk portfolios as well as with the valuation of various financial instruments.

- Pricing validation and independent pricing of:
  - Primary financial instruments
  - Vanilla derivative instruments
  - Exotic derivative instruments
  - Embedded derivatives
  - Structured products
  - Employee share options
  - BEE transactions
- Hedge effectiveness modelling and review
- Matlab & SAS modelling assistance.

**Contact: Pravin Burra**

Tel: +27(0)11 209 8118

Email: [pburra@deloitte.co.za](mailto:pburra@deloitte.co.za)

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee, and its network of member firms, each of which is a legally separate and independent entity. Please see [www.deloitte.com/about](http://www.deloitte.com/about) for a detailed description of the legal structure of Deloitte Touche Tohmatsu Limited and its member firms.

“Deloitte” is the brand under which tens of thousands of dedicated professionals in independent firms throughout the world collaborate to provide audit, consulting, financial advisory, risk management, and tax services to selected clients. These firms are members of Deloitte Touche Tohmatsu Limited (DTTL), a UK private company limited by guarantee. Each member firm provides services in a particular geographic area and is subject to the laws and professional regulations of the particular country or countries in which it operates. DTTL does not itself provide services to clients. DTTL and each DTTL member firm are separate and distinct legal entities, which cannot obligate each other. DTTL and each DTTL member firm are liable only for their own acts or omissions and not those of each other. Each DTTL member firm is structured differently in accordance with national laws, regulations, customary practice, and other factors, and may secure the provision of professional services in its territory through subsidiaries, affiliates, and/or other entities.

© 2012 Deloitte & Touche. All rights reserved. Member of Deloitte Touche Tohmatsu Limited

Designed and produced by Creative Solutions at Deloitte, Johannesburg. (751400/MLU)