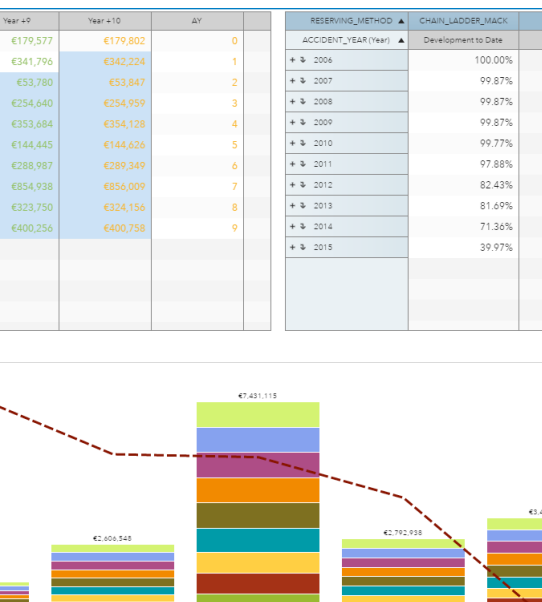


SAS® Underwriting Risk Management for P&C Insurance

Efficiently and accurately value your liabilities



For P&C insurers, the primary liabilities are outstanding claims: insurance claims on existing policies that will be reported and paid over the future. An insurance company must estimate the value of future payments for reported claims and incurred but not reported (IBNR) claims.

Depending on the line of business, the time required to settle a claim can vary considerably. For “short-tail” lines such as automobile physical damage, the average can be as short as a few weeks, with 99 percent of claims settled within a year. However, for “long-tail” lines like medical malpractice, the average can be a few years, with 99 percent being settled only after 10 to 15 years.

Since claims are not traded in the market, there is no market price to use as a basis for valuation: Insurers have to calculate a best-estimate liability for the market value of claims using approximation methods extrapolated from historical data and expert judgment.

What does SAS® Underwriting Risk Management for P&C Insurance do?

The solution enables companies to perform loss estimation, reserving and risk management analysis within a single, flexible and high-performance analytics environment. Analysts can blend actuarial and financial techniques to value P&C insurance liabilities using an internal model approach.

Why is SAS® Underwriting Risk Management for P&C Insurance important?

Regulatory bodies require that insurance companies provide an accurate, current assessment of the fair value of a firm’s portfolio of assets and liabilities. Insurers can use the solution to comply with such regulatory requirements (Solvency II, etc.) by analyzing property and casualty risks and performing risk-based capital calculations. Our solution includes market-standard methodologies as well as new methodologies, enabling P&C insurers to compare methods or merge the results to obtain better estimates of future liabilities.

For whom is SAS® Underwriting Risk Management for P&C Insurance designed?

The solution is designed to be used by actuarial and investment analysts, risk analysts and managers, IT managers and senior management at P&C insurance companies.

Estimating the needed reserves requires projecting future losses based on past patterns. However, the future might not precisely replicate the past, and historical patterns might contain random fluctuations.

The objective of loss reserving is therefore to make these projections while:

- Differentiating the data enough so that each projected set is based on similar past data (homogeneity).
- Collecting enough data so that the information is statistically relevant (credibility).
- Using data that is recent enough to capture current, rather than obsolete, conditions (responsiveness).

Using SAS, analysts can blend actuarial and financial techniques to value P&C insurance liabilities on both an accident year and underwriting yearly basis. The solution provides a flexible and configurable environment to analyze data, run multiple models, assess the impact of different assumptions and augment the results of the models with expert judgment.

With SAS Underwriting Risk Management for P&C Insurance, your organization can:

- Model losses and analyze the impact or contribution of a product segment or line of business on the insurance underwriting risk.
- Analyze exposure concentration by geography and product, and drill down to policy or coverage level.
- Design end-to-end processes for business users, integrating multiple systems and third-party tools.
- Use prebuilt components to define additional risk and reserving models.

The capabilities offered in our solution help you overcome the challenges of accessing the right data at the right time, complying with regulatory requirements such as Solvency II, making risk-aware decisions, streamlining implementation, and allowing a gradual adoption of internal models and advanced analytics.

Benefits

- **Accurately model losses and estimate reserves** across all product lines and segments using prebuilt market-standard methodologies, and compare or combine them for better estimates.
- **Comply with Solvency II and equivalent regulations.** Our solution calculates the capital requirements according to the Solvency II standard model for P&C insurance companies.
- **Reduce volatility.** Improve risk decision strategies by gaining a better understanding of how economic factors affect your balance sheet. You can better ensure solvency by stress testing your liabilities from sudden and dramatic changes in market conditions.
- **Improve your competitive advantage.** With better allocation of risk-based capital charges, you'll be able to lower your premium rates. You'll also gain the

flexibility to re-allocate capital and risk capacity for current and future business opportunities.

- **Improve your risk analysis accuracy** with an enterprise data warehouse. The SAS solution's comprehensive data management capabilities improve data quality by eliminating or reducing data inconsistencies.

Capabilities

SAS Underwriting Risk Management for P&C Insurance is an integrated, end-to-end solution, built entirely on SAS technology. It provides data integration, risk analysis and reporting to give users access to information stored across business units or externally to comply with regulations and make strategic business decisions.

Blend techniques to value liabilities

Actuarial and investment analysts can work in a flexible environment to configure insurance products and determine market-consistent valuation of insurance liabilities. Risk analysts and managers can analyze all material P&C underwriting risks faced by your company.

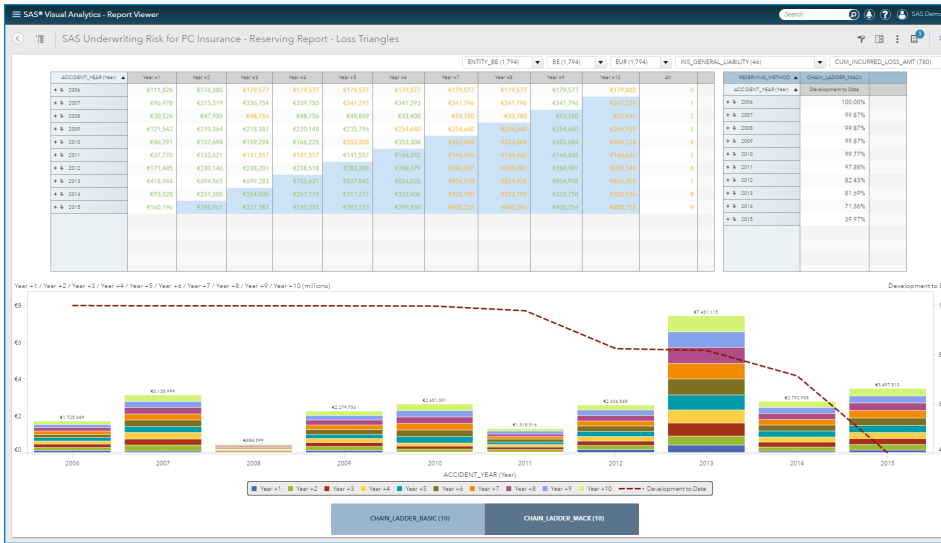


Figure 1. Analyze loss triangles and reserves by line of business, product, country, currency, etc., and drill down to policy or coverage level.

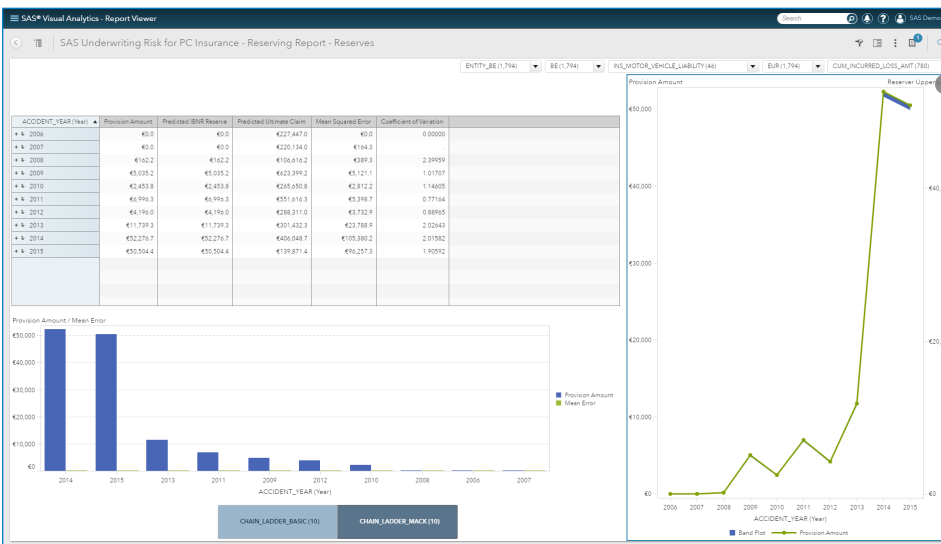


Figure 2. Calculate loss reserves across all product lines and segments using prebuilt techniques.

The solution supports a variety of risk analysis methods to quantify risk and required capital. Perform stress testing, simulations, what-if analysis and aggregate risk capital charges to determine regulatory capital requirements and economic capital - even the effects of diversification across products and lines of business and their impact on risk and profitability.

- Calculates loss reserves across all product lines and segments using prebuilt techniques, including Link Ratio, Chain Ladder, Mack, Cape Cod and Bornhuetter-Ferguson.
- Valuation of P&C insurance liabilities on both accident year and underwriting year basis.
- Flexible framework for rapid development of new methods for estimating P&C loss reserves.

- Compare reserving methodologies or merge the results to obtain better estimates of future liabilities.
- Analyzes loss triangles and reserves by line of business, product, country, currency, etc., with the ability to drill down to policy or coverage level.

Manage workflow, monitoring and extension

SAS provides a modular approach that allows IT to fulfill the needs of multiple business divisions while managing a single platform.

- Design end-to-end processes for business users.
- Integrate multiple systems and third-party tools for more reliable decision making.
- Use a control panel for monitoring job execution status.
- Access historical data management and auditability.
- Navigate through the process flow and analyze input and output of each step.

Configure analytics and reports

Senior management can access information to comply with regulations and make strategic business decisions. The solution provides comprehensive risk reporting features:

- Rich reporting capabilities allow business users to create risk dashboards and management reports.
- Quickly analyze data across multiple dimensions and hierarchies, summarize data into KPIs or drill down to the details.

Data management

IT managers can create and manage a risk data warehouse or single point of truth for accurate risk analysis. The solution provides a comprehensive data model and prebuilt data management capabilities to populate the data warehouse from operational data sources.

- Data integration improves data quality by eliminating or reducing data inconsistencies.

Key Features

Blend of techniques to value liabilities

- Flexible environment to configure insurance products and value liabilities.
- Variety of risk analysis methods to quantify risk and required capital.
- Stress testing, simulations, what-if analysis and aggregation of risk capital charges.
- Rapid development of new methods for estimating P&C loss reserves.
- Valuation of liabilities on both accident year and underwriting year basis.
- Calculates loss reserves across all product lines and segments using prebuilt market standard techniques: Link Ratio, Chain Ladder, Mack, Cape Cod and Bornhuetter-Ferguson.
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- Data integration improves data quality by eliminating or reducing data inconsistencies.
- Manage the status of job execution and investigate data issues and audit changes.
- Load data from the model to the risk solutions.
- Insurance-specific data model serves as single source of information for an enterprise risk data warehouse.

High-performance analytics capabilities

- Parallel and in-memory execution environment reduces waiting time for results and increases business efficiency.
- Scalable architecture allows for efficient use of hardware resources to reduce IT costs and support the existing IT infrastructure and future growth needs.

- Manage the status of job execution and investigate data issues and audit changes.
- With prebuilt data management capabilities, you can load data from the model to the risk solutions.
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High-performance analytics

- A parallel and in-memory execution environment reduces waiting time for results and increases business efficiency.
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To learn more about SAS Underwriting Risk Management for P&C Insurance system requirements and see other related material, please visit: sas.com/risk.

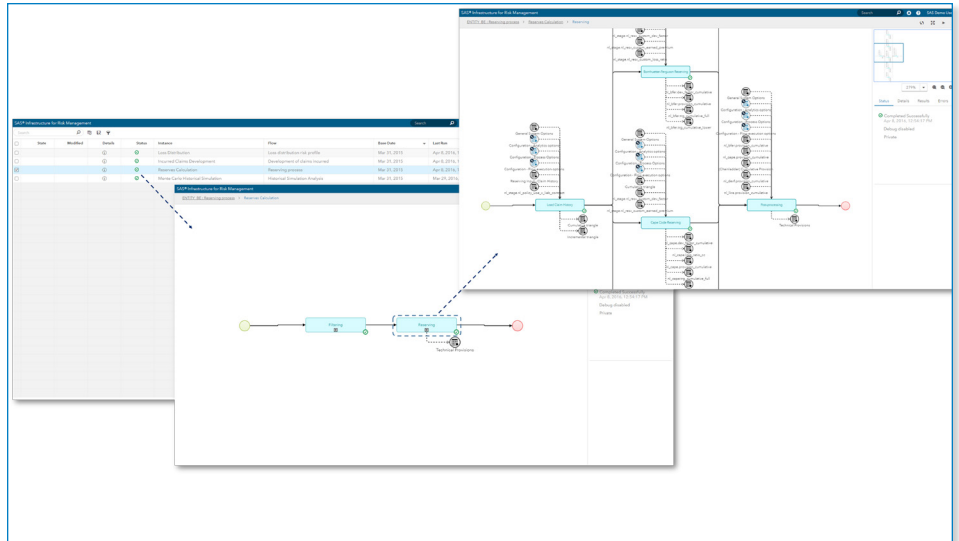


Figure 3. Visualize and navigate through job flows easily with full transparency and data traceability.

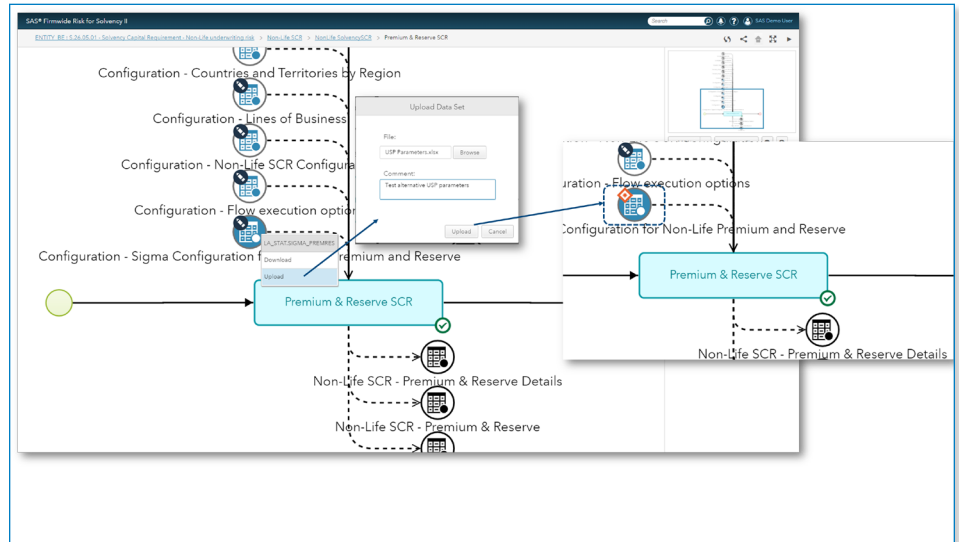


Figure 4. Test alternative scenarios and keep track of the changes.

To contact your local SAS office, please visit: sas.com/offices

