Appendix: Advice to Researchers

The U.S. insurance sector generates extensive administrative and regulatory data that may be used in a variety of research settings. Much of the information most relevant to insurer operations is recorded in systems developed for solvency oversight, product review, market conduct, and state coordination. These sources can provide information that is not fully reflected in U.S. Securities and Exchange Commission (SEC) public-company disclosure, which is designed primarily for investors and capital markets. Because these data arise from specific regulatory processes, they are best understood in light of the institutional setting in which they are produced.

Advice Using Data from System for Electronic Rates and Forms Filing

The System for Electronic Rates and Forms Filing (SERFF) is a significant source for work on pricing, product design, filing behavior, regulatory timing, and state heterogeneity. The Product Filing Review Handbook describes SERFF as a web-based filing tool for rate, rule, and form filing and review. It notes that nearly every jurisdiction accepts filings through SERFF, that more than 10,000 filers use it, and that it processes more than half a million transactions annually. The handbook also notes that filings may be made by insurers, advisory organizations, or third-party filers, and that states differ in what must be filed and in the extent of legal or actuarial review.

These features affect how SERFF records should be interpreted. A filing is not the same as a realized market price, an implemented premium, or an underwriting result. It is an event in an administrative process. Some filings are approved quickly; others are objected to, revised, or otherwise modified during review; some concern not only rates but also rules, forms, underwriting standards, or bundled program changes. The filing process is cooperative and state-specific, and the handbook links modernization efforts to speed-to-market goals, SERFF functionality, and state-specific statutory requirements.

It may also be useful to avoid treating "regulation" as a single variable. The handbook's history chapter notes that many states moved over time from strict prior-approval approaches toward more competition-oriented commercial-lines environments, while preserving filing systems, review standards, and consumer-protection tools. SERFF and the Interstate Insurance Product Regulation Compact (the Insurance Compact)[1] were developed as speed-to-market initiatives within a state-based system. For life and related

[1] The Interstate Insurance Product Regulation Compact (Insurance Compact) is a state-based agreement to modernize the regulatory approval of asset-based insurance products. https://content.naic.org/sites/default/files/government-affairs-brief-about-insurance-compact.pdf

products, the Insurance Compact adds another institutional layer by creating a central filing and review pathway for covered products in compacting states.

SERFF-based work may therefore benefit from attention to the filing process itself, including time to disposition, objections, withdrawals, state-level differences, bundling of rates and forms, advisory-organization interaction, and the text of actuarial memoranda and support documents. SERFF may also be informative when linked to market-conduct or financial data, because it can help distinguish what insurers requested from what they later issued, reserved, or paid in claims.

Advice Using Annual Financial Statement Data

The NAIC Financial Data Repository (FDR)[2][3] is a core source for research on solvency, underwriting results, investment behavior, reserves, capital adequacy, and insurer financial condition. NAIC describes the FDR as a centralized warehouse used primarily by state regulators as well as policymakers and academics. It stores quarterly and annual statement information for multi-state insurers and also includes supplemental filings such as risk-based capital reports. These data are best understood as regulatory financial surveillance data.

Insurance also operates with a parallel accounting system. Most U.S. insurers prepare statutory financial statements under NAIC Statutory Accounting Principles (SAP), set out in the Accounting Practices and Procedures Manual (AP&P Manual), while Generally Accepted Accounting Principles (GAAP) serves a different audience and purpose. NAIC's statutory-accounting overview explains that SAP is designed to support consistent reporting and solvency regulation; it emphasizes the balance sheet and policyholder protection, while GAAP is more focused on decision-useful information for investors and is typically more income-statement oriented. The AP&P Manual includes a GAAP-to-SAP cross-reference, which indicates that the systems are related but not interchangeable.

NAIC identifies three core concepts behind SAP: consistency, recognition, and conservatism. Conservatism protects policyholders against adverse fluctuations; recognition limits balance-sheet treatment to assets actually available to meet obligations; consistency supports meaningful comparison across regulated entities. These principles help explain why statutory statements often appear more conservative than GAAP

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[2] https://content.naic.org/industry_financial_filing.htm, https://content.naic.org/insurance-topics/financial-data-repository

[3] Can be also found in S&P Global SNL Insurance Regulatory Data https://www.marketplace.spglobal.com/en/datasets/snl-insurance-regulatory-data-%2841%29

statements and why surplus, asset admissibility, and reserve presentation should not be interpreted using ordinary corporate-finance assumptions alone.

A second point that warrants attention is that SAP is not perfectly uniform across states. NAIC states that the AP&P Manual does not preempt state legislative and regulatory authority and that state variations can arise through prescribed and permitted practices. The annual statement instructions require disclosure of departures from NAIC SAP, and the Note 1 reconciliation is designed to show the effects of prescribed or permitted practices on net income and statutory surplus. For that reason, Note 1 may be relevant when making cross-state comparisons.

A third point is that annual statement data are year-specific and maintenance-driven. The annual statement instructions are issued for each reporting year, and NAIC maintains separate revisions pages showing modifications after initial release. Definitions, illustrations, and reporting requirements can therefore change over time. Replication files may therefore need to identify the exact filing year, statement type, and instruction set being used rather than assume stable variable definitions across long panels.

Risk-Based Capital (RBC) is also relevant because it functions as a regulatory trigger framework, even though insurer-level RBC reports are generally not public. Under the NAIC approach, insurer RBC reports and related materials are generally confidential, yet RBC remains central to how regulators evaluate capital adequacy and solvency pressure. The system aggregates major categories of insurer risk, measures capital sufficiency relative to Authorized Control Level RBC, and links capital deterioration to progressively stronger supervisory responses. At or above 300 percent, no intervention is ordinarily required; between 200 percent and 300 percent, trend-test and potential intervention issues may arise; below 200 percent, corrective action can escalate toward regulatory control; and below 70 percent, mandatory control is triggered. Even where insurer-level RBC data are not publicly available, solvency pressure and capital triggers may remain relevant to interpretation of insurer behavior.

Accessing NAIC-Based Data Through S&P Global Market Intelligence

Many researchers access NAIC-based insurance information through commercial data vendors rather than directly through the underlying regulatory systems.

S&P Global Market Intelligence[4] may serve as a practical point of access, particularly for large-sample work, because it standardizes insurer identifiers, aggregates regulatory

[4] https://www.marketplace.spglobal.com/en/datasets/snl-insurance-regulatory-data-%2841%29

disclosures, and packages product-filing data for search and analysis. It should nevertheless be understood as an access layer rather than as the institutional source itself. The meaning of the fields still derives from NAIC annual statements, NAIC accounting instructions, SERFF workflows, and state filing rules. Use of vendor-accessible data is therefore most reliable when definitions and interpretation are tied back to the underlying NAIC materials.

In working with vendor-accessible data, it may be useful to identify at least three provenance questions:

- What is the underlying source document?
- What is the reporting unit?
- What transformations did the vendor apply?

These questions are relevant because many insurance variables originate as administrative or regulatory measures before they are used as research variables. An extracted "rate change," "capital," or "premium" field may be useful, but it should be interpreted in light of the filing, statement instruction, or accounting rule from which it is derived.

Considerations for Interpretation

Insurance research often relies on data drawn from several distinct regulatory and administrative systems. These systems were developed for different purposes and should be interpreted accordingly. Solvency reporting, product filing, market-conduct reporting, and reinsurance accounting do not measure the same aspects of insurer activity. A variable drawn from one system may therefore not serve as a direct substitute for a variable drawn from another.

One implication is that statutory accounting data should be interpreted in light of statutory accounting objectives rather than investor-reporting conventions. Statutory statements were developed to support solvency oversight and policyholder protection. As a result, surplus, admissibility, reserve treatment, and related measures may not serve the same function as analogous concepts in GAAP-based or investor-oriented financial analysis. Use of statutory data may therefore require attention to the accounting framework that produced them.

A second implication is that premium measures do not necessarily function as clean measures of price. Written or earned premiums may reflect not only rate level, but also

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https://www.marketplace.spglobal.com/en/datasets/snl-insurance-product-filings-%281733129635%29

exposure, coverage terms, underwriting mix, endorsements, audits, retrospective adjustments, timing, and, in some cases, reinsurance effects. Where the research objective concerns pricing, it may therefore be useful to distinguish between premium outcomes and filed rate-related changes, and to consider what additional factors may be embedded in observed premium measures.

A third implication concerns the interpretation of product filing data. SERFF records administrative filing events rather than realized market outcomes. A filing may involve rates, rules, forms, underwriting standards, or bundled program changes, and it may also be subject to objections, revisions, withdrawals, or negotiation during review. For that reason, a filing should not automatically be treated as equivalent to an implemented premium change, a realized market price, or an underwriting result. The timing and outcome of the filing process may itself be relevant to interpretation.

A fourth implication concerns reinsurance. Direct writings, direct losses, and retained risk are not always equivalent. Reinsurance arrangements may affect retained exposure, capital requirements, premium measures, and the distribution of results across affiliated entities. Where research questions concern risk-bearing, capital strain, underwriting response, or market presence, it may therefore be necessary to distinguish between direct activity and retained exposure.

A fifth implication concerns reporting level. Legal-entity data and group-level data do not necessarily represent the same economic or regulatory object. Entity-level reporting may be most relevant to licensing, statutory accounting, and insurer-level solvency oversight, while group-level measures may be more relevant to diversification, affiliate structure, capital location, and risks arising outside the regulated insurer. These reporting levels may both be useful, but they are not automatically interchangeable.

A sixth implication concerns the distinction between solvency data and market-conduct data. Financial statement variables may provide information about financial condition, operating results, and reserves, but they are not designed to isolate claims-handling practices, closure behavior, underwriting friction, or other consumer-facing outcomes. Those questions may be more directly informed by market-conduct data, including Market Conduct Annual Statement (MCAS)-based measures where available. For that reason, research questions concerning underwriting or claims practices may require different data sources than research questions concerning solvency or capital adequacy.

More broadly, the same observed variable may reflect more than one economic or regulatory process. A premium measure may reflect both pricing and changes in exposure. A filing may reflect both insurer initiative and regulatory response. A capital measure may reflect both financial condition and accounting treatment. A group-level measure may

reflect both insurer activity and affiliate structure. Interpretation of results may therefore benefit from explicit identification of what a variable is intended to represent, what institutional processes produced it, and what additional factors may be embedded within it.

For that reason, it may be useful for a research project to identify, at the outset, the relationship between the observed record and the concept of interest. This may include specifying the unit of observation, the reporting system from which the variable is drawn, the institutional purpose for which that system was created, and the principal limitations that follow from using the observed variable as a stand-in for the concept under study.

These considerations do not limit empirical analysis. Rather, they help define the conditions under which empirical results can be interpreted appropriately and can inform research design from the outset.

Research Design Considerations

Institutional understanding is an important part of research design in insurance. The legal history matters, the reporting architecture matters, and the regulatory purpose of the dataset matters. A technically well-specified model may be less informative if it is built on an institutional object that does not align with the question being asked.

Insurance data may therefore be approached as a reporting system that first needs to be understood. Before building variables, it may be helpful to ask several questions. What process generated this record? For whom was it created? What decision was it meant to inform? At what level was it recorded: legal entity, group, filing, policy, claim, line, or state? What would have to be true for this variable to serve as a reasonable stand-in for the economic object of interest?

It may also be useful to treat insurance data as complements rather than substitutes. SERFF, statutory statements, RBC, and market-conduct reporting each reveal different parts of the industry. A research project does not need to use every source, but it may be helpful to consider which source speaks most directly to the question being asked. SERFF may be useful for filing behavior and product review; statutory data for financial condition and operating results; RBC for solvency constraint; and market-conduct sources for underwriting or claims behavior.

State variation is also part of the institutional substance of the market. The U.S. system is state-based, but it combines state authority, model-law harmonization, centralized filing tools, common reporting frameworks, and line-specific exceptions. This architecture can support work on competition, speed to market, capital strain, approval asymmetries,

reserve discipline, catastrophe response, and product adaptation within a federal regulatory setting.

One practical approach is to begin each project with a brief memo on the data-generating process. That memo may identify the unit of observation, what the key variables are intended to measure, what institutional transformations sit between the observed variable and the economic object of interest, and what kinds of interpretive slippage are most likely. This can help clarify, for example, whether a premium measure is being used as a stand-in for price, whether a group variable is being used to explain entity behavior, or whether a filing event is being interpreted as a realized market outcome.

It may also be useful to review source materials before coding. The AP&P overview can help clarify the meaning of statutory ratios. Annual statement instructions can help establish whether a panel is mechanically consistent across years. The Product Filing Review Handbook can provide context for SERFF fields. MCAS definitions can clarify the distinction between solvency and market-conduct measures.

The insurance sector presents a combination of competition, capital regulation, contract design, reinsurance, federalism, administrative process, and financial reporting that may support a broad range of research questions. For researchers prepared to work with the institutional structure of the data, these sources can support both descriptive and causal analysis across a variety of topics.

The following NAIC and related materials may be useful as primary reference points when defining variables, interpreting reporting conventions, and designing research using insurance data.

Selected Primary Sources for Researchers

- Statutory Accounting Principles - NAIC overview of SAP, including conservatism, recognition, consistency, and state prescribed/permitted practices.
- Accounting Practices and Procedures Manual (AP&P Manual) - the core statutory accounting manual, including a GAAP-to-SAP cross-reference.
- Annual Statement Instructions - year-specific reporting instructions that govern how insurers complete statutory statements.
- Annual/Quarterly Statement Instruction Revisions - useful for tracking mid-year changes and avoiding false panel consistency.
- Financial Data Repository - overview of the centralized warehouse for annual, quarterly, and supplemental financial filings.
- Risk-Based Capital - official overview of RBC concepts and regulatory intervention thresholds.

- Product Filing Review Handbook - best single source on the filing process, SERFF, speed to market, advisory organizations, and state review practices.
- Market Conduct Annual Statement - overview of MCAS, its history, centralized data collection, and current lines of business.
- McCarran-Ferguson and NAIC history materials - legal and historical context for the state-based system.
- Model Laws and the Insurance Compact - useful for understanding where uniformity is created within a state-based framework.
- S&P Insurance Regulatory Data / Product Filings dataset pages - useful for documenting vendor provenance and explaining what S&P is standardizing.