



POTENTIAL INSURANCE APPLICATIONS

Workshop on Building an Interannual to Decadal (2 to 30 year)
Prediction/Projection Capability for Decision Support

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June 5, 2019



4 MAJOR INSURANCE USER NEEDS

1. Projection of future loss trends
2. Input to catastrophe models
3. Pricing of reinsurance & insurance-linked securities
4. Underwriting risk selection & market stability



1. PROJECTION OF FUTURE LOSS TRENDS

- Loss trends are used by actuaries to trend historical loss data forward in order to set appropriate prices and reserves
- Current process is to examine a wide range of internal and external factors and use “actuarial judgment” to select a trend factor
- ~50% of property losses due to weather – currently no good info to help with trend selection



2. INPUT TO CATASTROPHE MODELS

- Catastrophe models became widespread in the insurance industry following Hurricane Andrew (1992)
- Use Monte Carlo simulations of 10K-50K years to estimate the potential for catastrophic losses which could cause insolvency
- Models provide probabilities of ruin that assist insurance carriers, regulators and rating agencies in determining capital reserve requirements
- No implicit representation of future weather today



3. PRICING OF REINSURANCE/ILS

- Reinsurance is “insurance for insurance companies”
- Companies with large amounts of capital, similar to hedge funds, assess risk globally and seek returns through diversification of catastrophe risk portfolio
- Lloyd’s of London and Bermuda market best known
- Pricing of reinsurance signals risk to primary carriers
- Insurance-linked securities (ILS) provide alternative capital driven by Wall Street banks & investors



4. UNDERWRITING RISK SELECTION

- Insurance pricing is driven by historical losses + catastrophe models + reinsurance costs
- Underwriting is the process of risk selection – which policies does a carrier choose to insure or decline?
- New business underwriting is the process of accepting or declining a new potential customer
- Re-underwriting is the process of reviewing existing customers & associated risk – goal is predictability



THANK YOU

Questions?

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