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The American Insurance Association appreciates the opportunity to testify on the issue of catastrophe modeling. The use of models is very important for a stable insurance market, one that results in better portfolio management, and more accurate pricing. This benefits insurers and consumers alike.

Catastrophe (Cat) modeling is the process of using computer-assisted calculations to estimate the losses that could be sustained by a portfolio of properties due to a catastrophic event such as a hurricane or earthquake. Cat modeling combines several scientific disciplines – actuarial science, engineering, meteorology, and seismology.

Insurers use cat modeling as a tool for both underwriting and pricing. Models are used to assess the risk in a portfolio of exposures. This helps guide an insurer's underwriting strategy, and can help the insurer decide how much reinsurance to purchase. In addition, some departments of insurance allow insurers to use cat modeling in their rate filings to help determine how to price the insurance product.

Historical loss information is obviously an important element for projecting and predicting the likelihood of future loss, but this information, by itself, does not provide a comprehensive picture of potential catastrophic loss scenarios. Catastrophe models supplement historical loss information in the following ways:

- Insurers use cat models to account for the location of currently insured buildings in loss estimates. For example, an insurer may have significant concentrations of risk in areas that had few or no buildings at the time of the last storm or earthquake. Without catastrophe models, it would be virtually impossible to determine expected losses in an area with no historical loss information.
- Cat models account for changes in the values of exposed property, and are used to estimate repair costs following an event. It costs more to repair and replace buildings and their contents today than it did in the past, and the changes are not uniform across portfolios. This makes it difficult to apply a simple adjustment to historical data.
- Cat models consider changes in building codes and building quality. The propensity for a loss caused by a given wind speed, or a given earthquake

intensity, has reduced as building quality has improved. Cat models completely reflect the current building stock in terms of location, density and construction.

- Models also help to account for changes in insurance terms over time, and to test various coverage options. For example, the risk reduction to insurers and premium savings to consumers due to the introduction of percentage deductibles in place of flat dollar deductibles might be impossible to estimate from limited

additional surplus will be needed to support a given insurer's book of business. As a result, the insurer could have less capacity to write business in a given market.

Other segments of our industry use models as well. Insurance rating agencies use catastrophe modeling as a tool to assess the financial strength of insurers that take on catastrophe risk. Rating agencies also use cat models to provide guidance to insurers on how to deal with financial planning for catastrophes. Many insurers, especially those