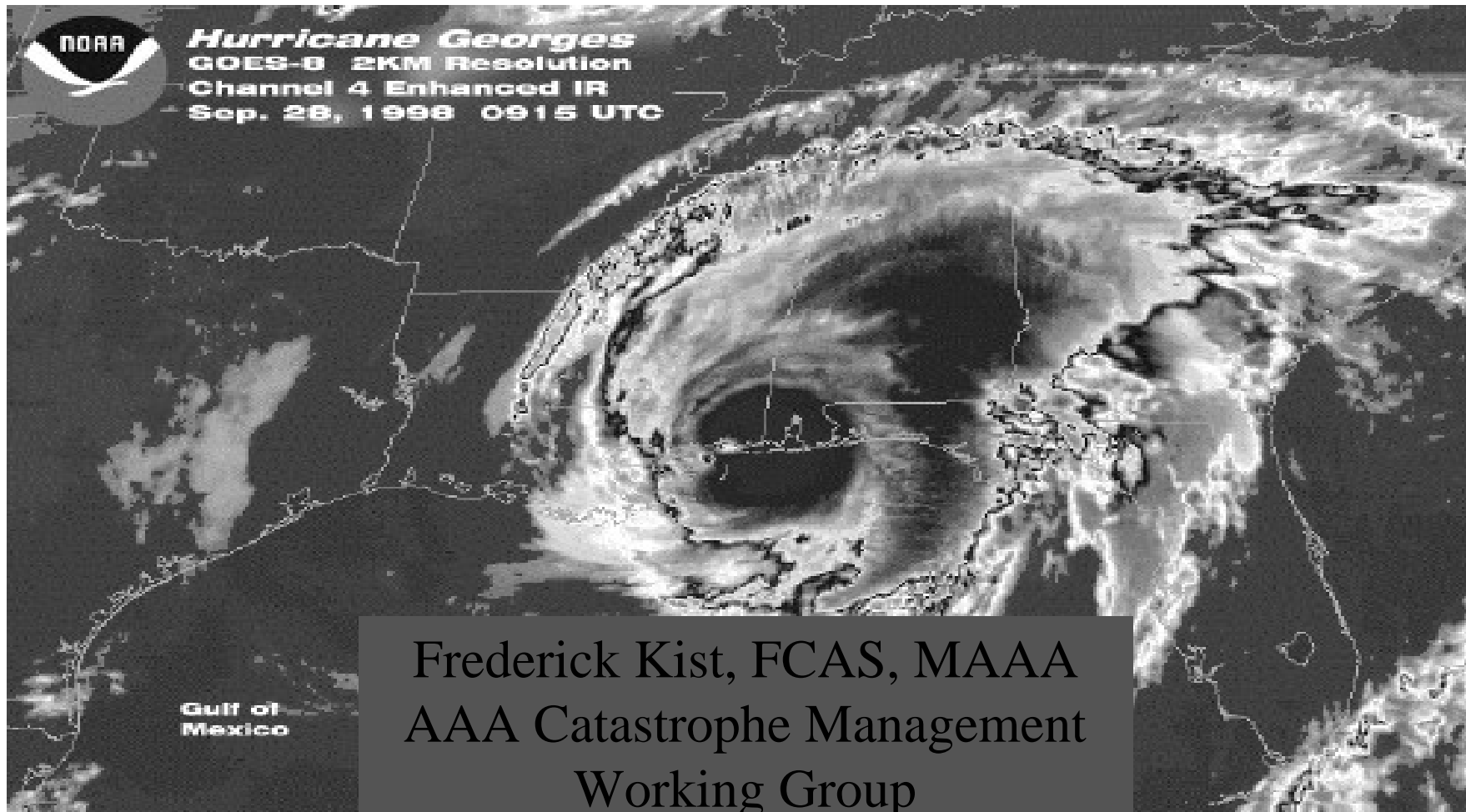


AMERICAN ACADEMY *of* ACTUARIES

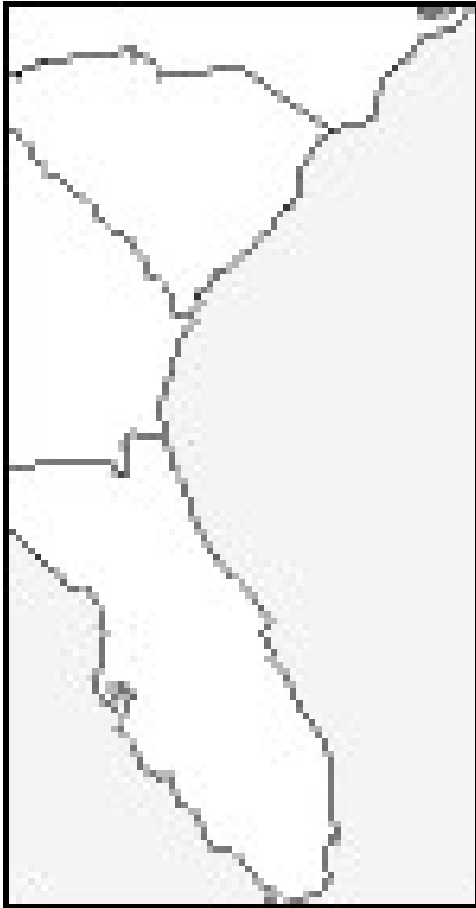
Capitol Hill Briefing on Catastrophe Issues



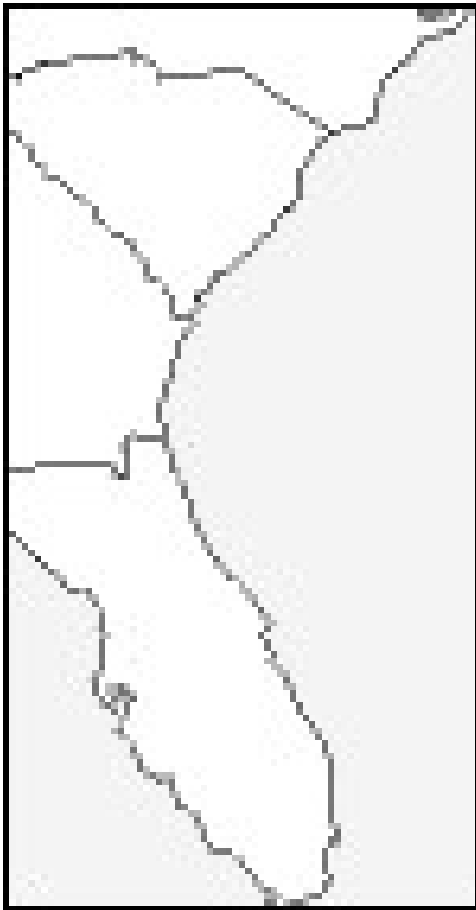
Scope of the Problem



Increased Catastrophe Activity

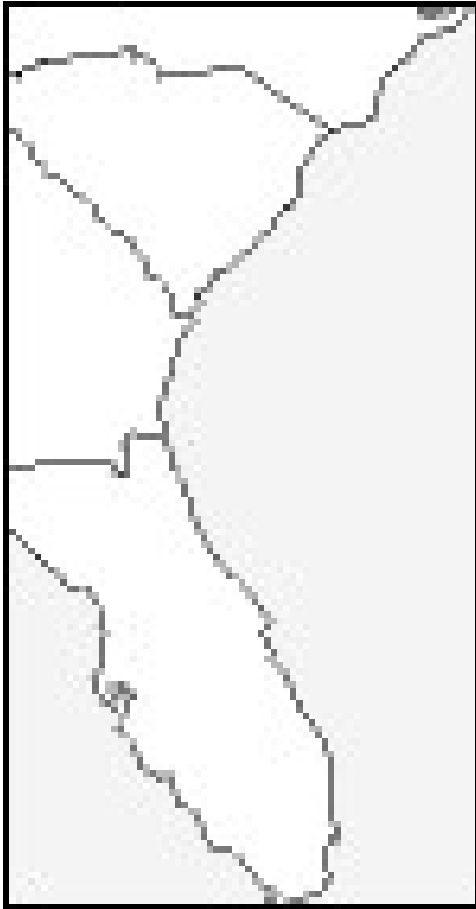


Increased Catastrophe Activity



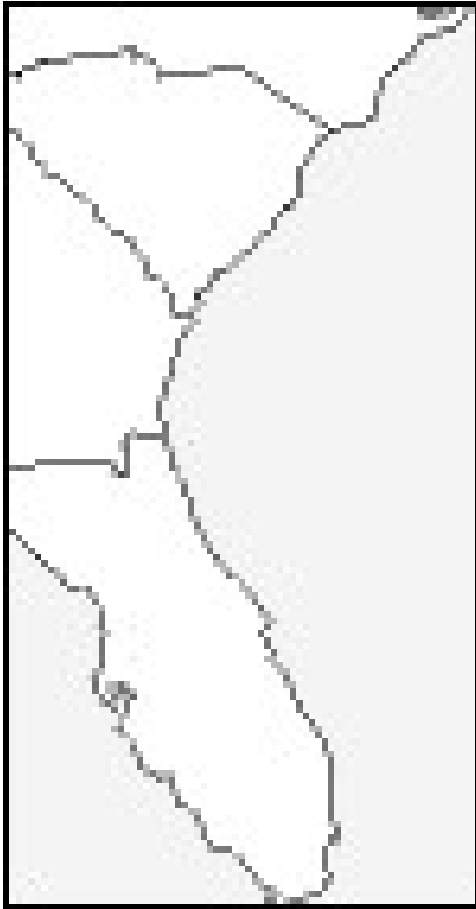
- 90's property losses on a scale never seen before

Increased Catastrophe Activity



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- Increased frequency of high intensity events

Increased Catastrophe Activity



- 90's property losses on a scale never seen before
- Increased frequency of high intensity events
- Contributing factors:
 - Climatic shifts
 - Cat prone area attractive
 - Increased property values
 - Concentrated exposures

Potential Magnitude of Losses



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- In 1992 Hurricane Andrew produced insured losses of \$17B.

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- Prior to Andrew few appreciated the new level of exposures.
- Developments in modeling have permitted companies to better evaluate their cat exposures.
- \$50B to \$70B event not out of the realm of possibility.

How Insurers Deal with Catastrophe Risks



Underwriting Catastrophe Risks



Underwriting Catastrophe Risks

- Measurement of correlated exposures
 - Use of modeling tools



Underwriting Catastrophe Risks

- Measurement of correlated exposures
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- Determination of aggregate company exposure



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- Evaluate acceptability of individual risk

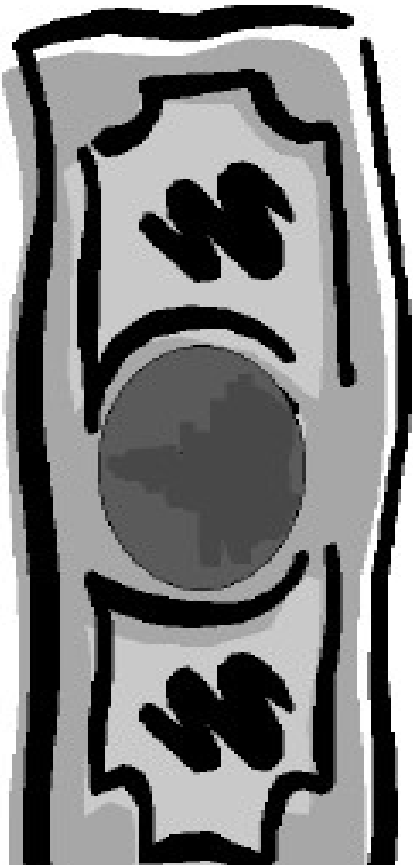


Underwriting Catastrophe Risks

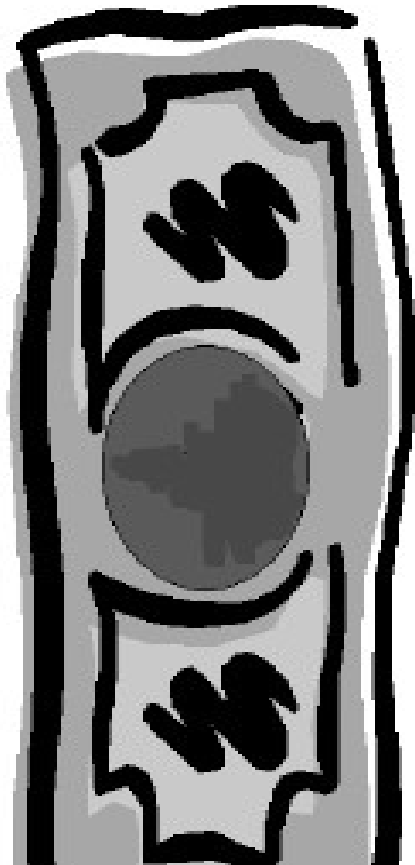
- Measurement of correlated exposures
 - Use of modeling tools
- Determination of aggregate company exposure
- Evaluate acceptability of individual risk
- Transfer excess risk



Reinsurance

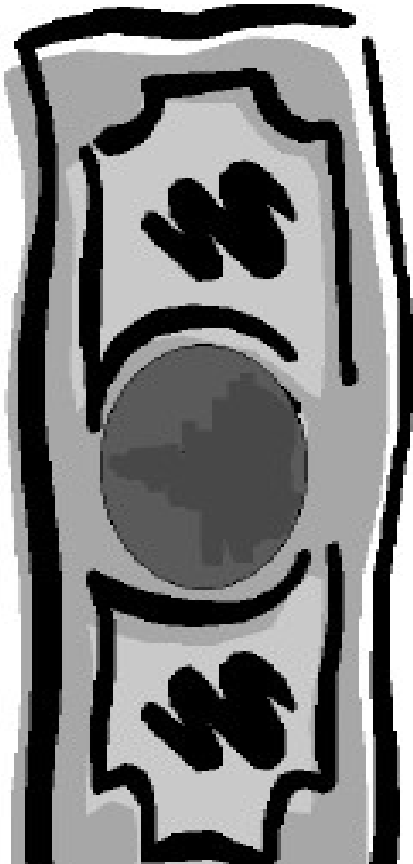


Reinsurance



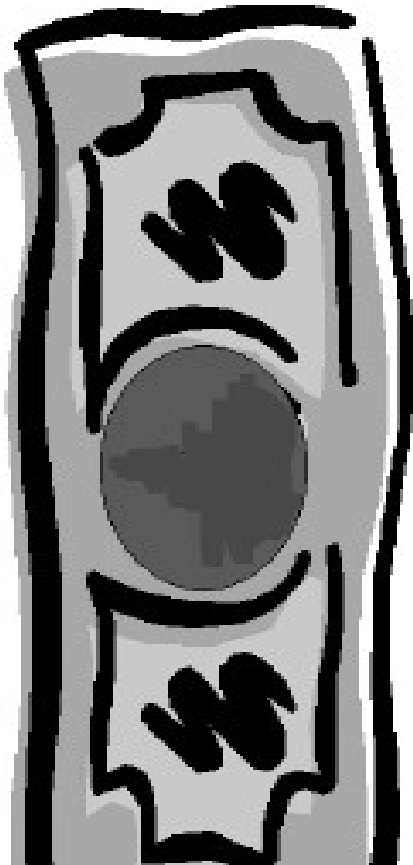
- Transfer catastrophe exposures to professional reinsurers

Reinsurance



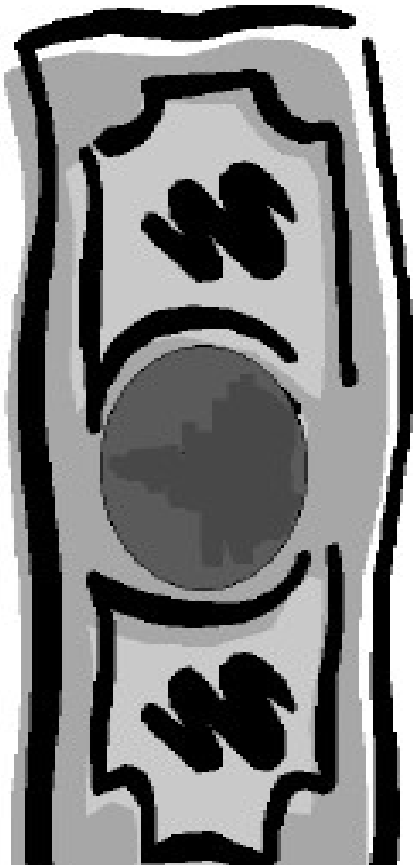
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- Most common form of risk transfer

Reinsurance



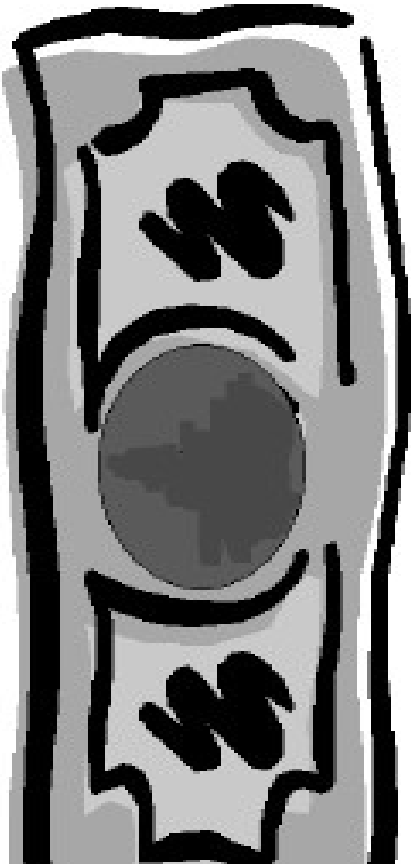
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- Permits carriers to write exposures they could not otherwise write

Reinsurance



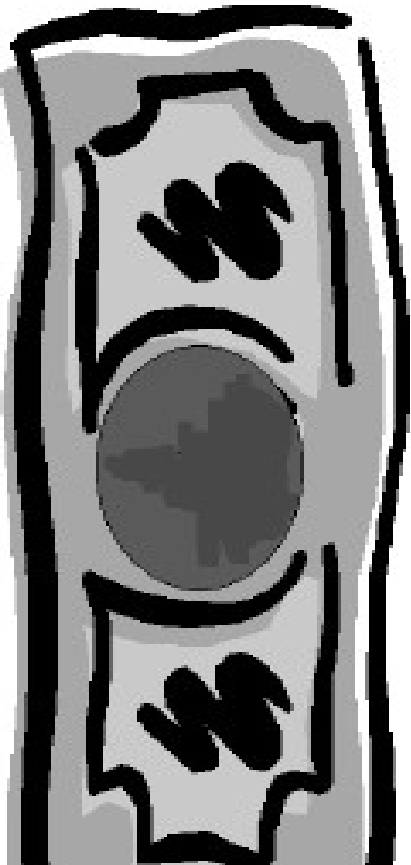
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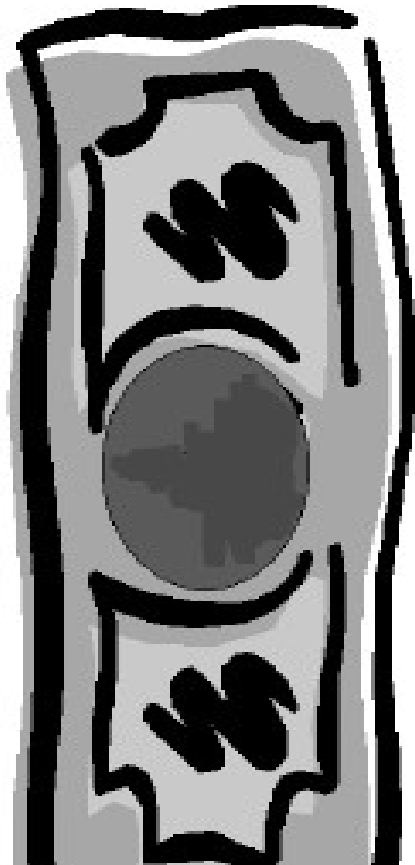


- Transfer catastrophe exposures to professional reinsurers
- Most common form of risk transfer
- Permits carriers to write exposures they could not otherwise write
- Capacity is limited
- Capacity shortage possible in the event of the mega-cat

Securitization

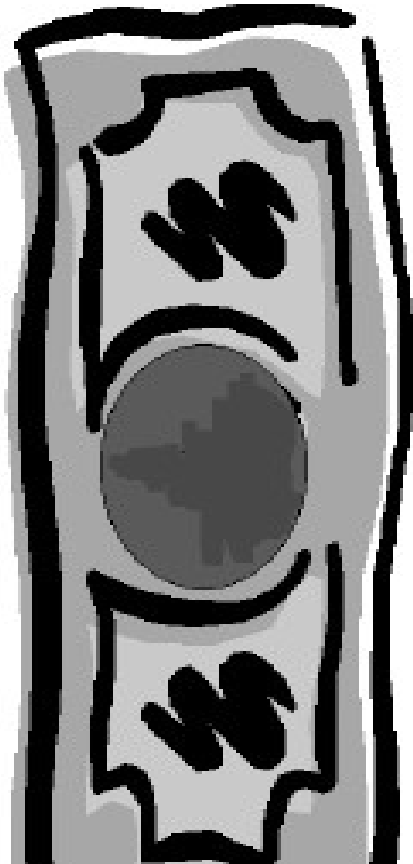


Securitization



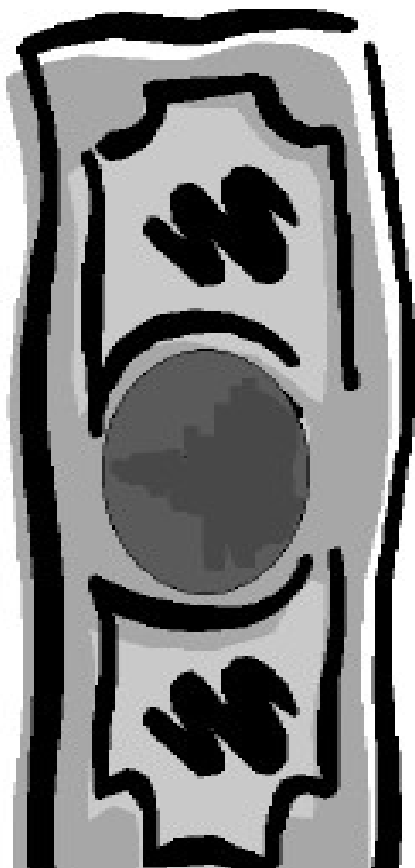
- Alternative risk transfer mechanism
 - Transfer risk to capital markets

Securitization



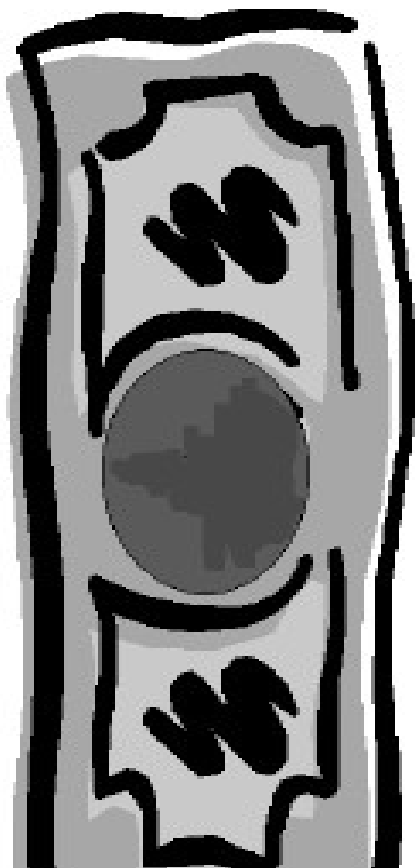
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Securitization



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Securitization



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- Indemnity-based
 - Cat Bonds
- Derivative or index-based
 - Index-based options
- Still in infancy

Is this enough?



Is this enough?



Is there an appropriate role for the federal government in providing additional capacity?