



International Association for the  
Study of Insurance Economics

# Études et Dossiers

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**&**

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Layout & Distribution: Valéria Kozakova

# Convergence of Insurance and Capital Markets – Challenges and Opportunities for (re-)insurers

Clemens Muth

## Agenda

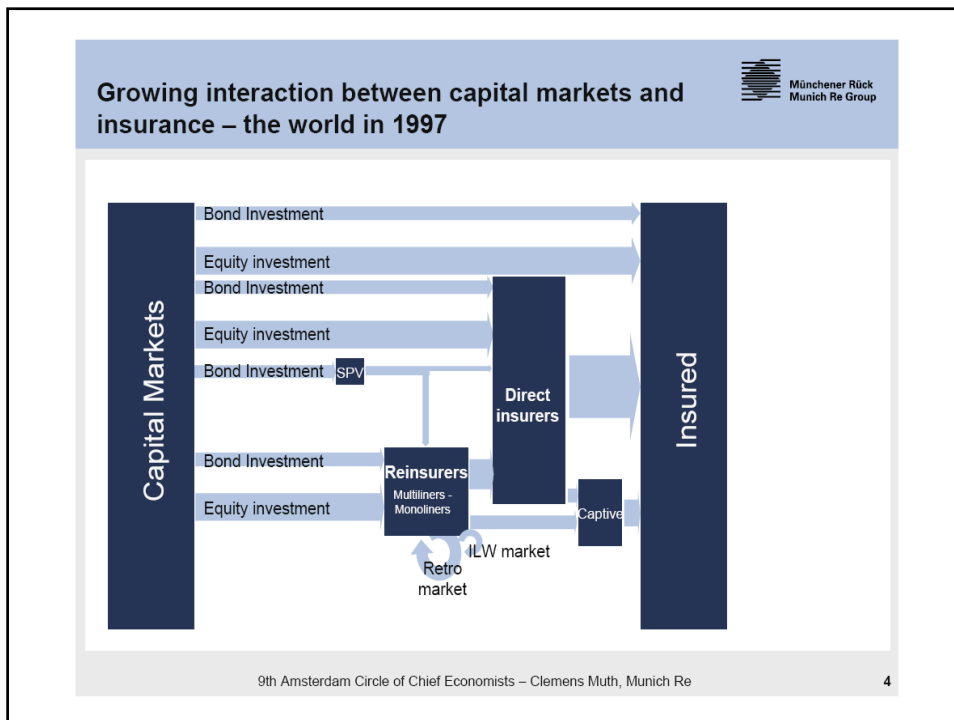
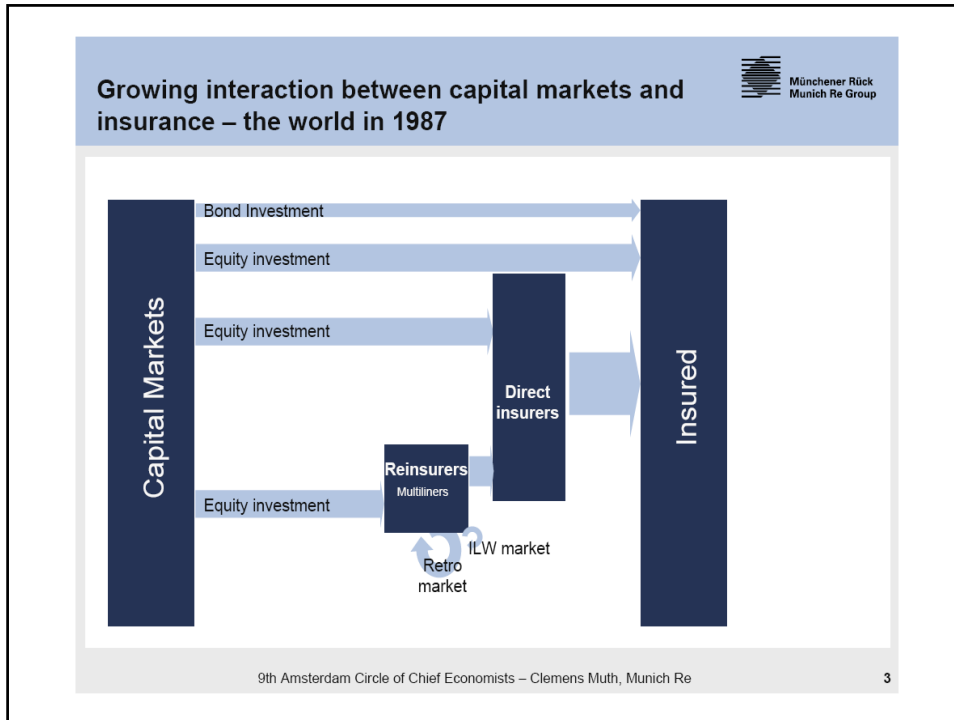


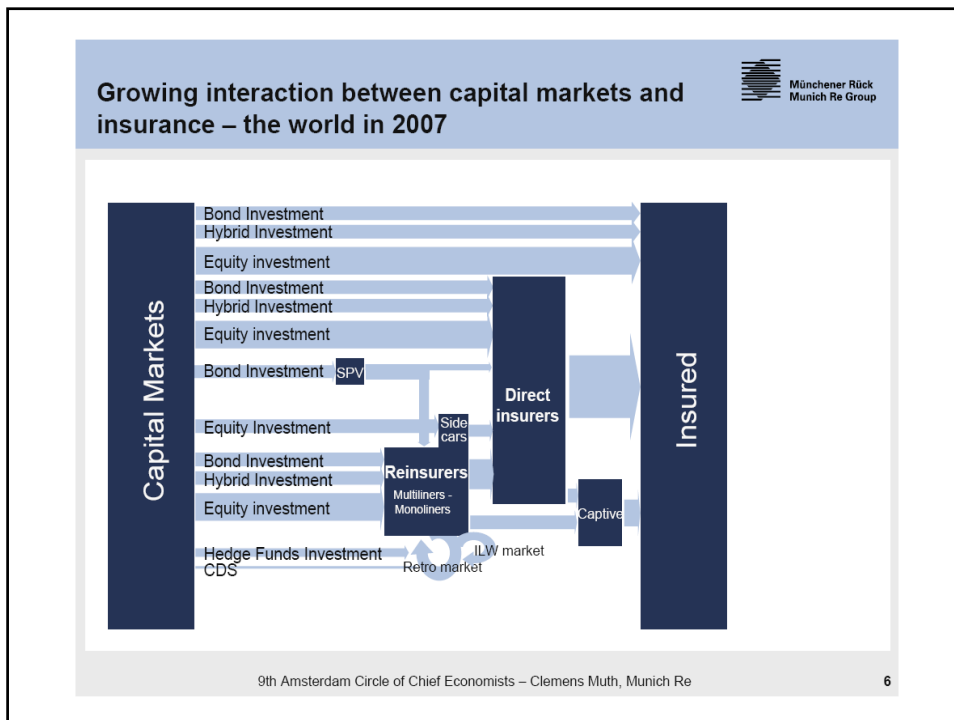
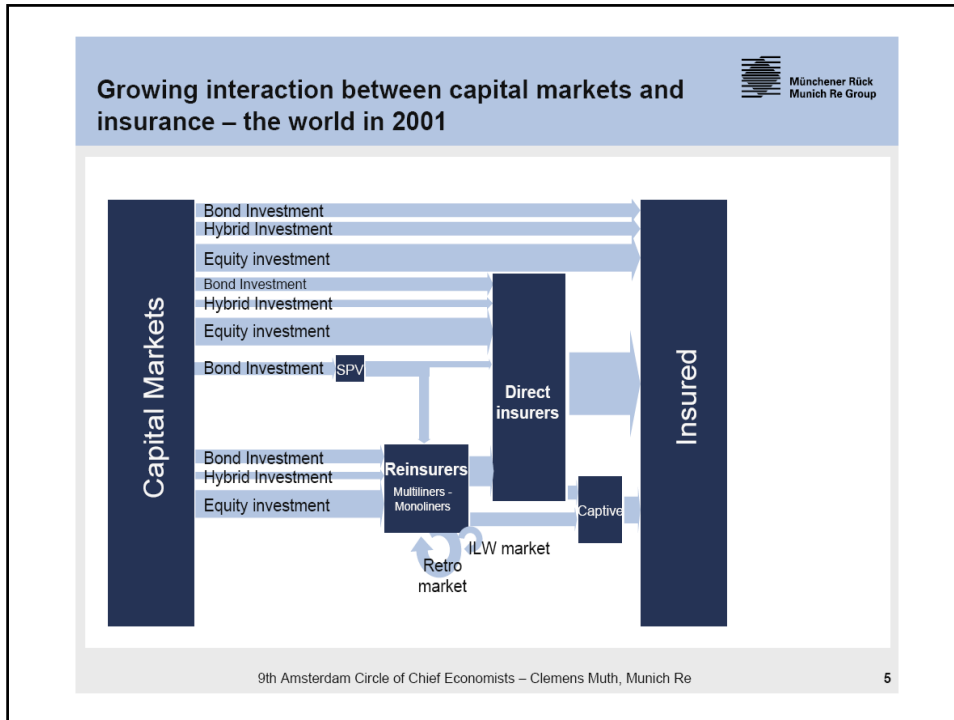
Insurance and the capital markets

Risk trading at Munich Re


Mid-term outlook

Consequences for the insurance market





## Increase of capital market involvement in insurance driven by market forces



Structural factors

**Insurance Industry**

- Deregulation since the late 80s
- Disintermediation; reduced market entry barriers and rising competition

**General**

- Rapid increase in modeling skills and IT
- Structural disinflation (reduced yields)

**Capital markets**

- Increase of investment universe
- Development of financial engineering
- Increased risk management techniques


Cyclical factors

- High returns in insurance since 9/11
- Historically low credit spreads
- Search for yields esp. after equity downturn 2001

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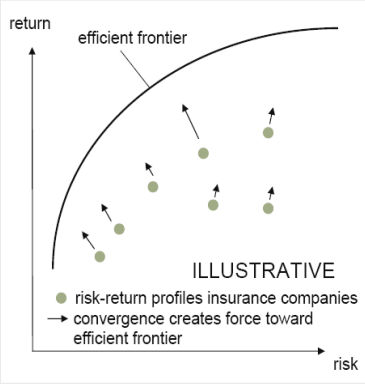
## Convergence between insurance and capital markets is a positive for insurers and society (1/2)



Insurance industry

- Increased capital efficiency due to
  - Increased risk universe
  - Realization of diversification benefits via tapping the capital market
  - Increased tradability of risks
- Reduced cyclicality due to lower market entry barriers

**=> force on insurers' risk-return-profile toward the efficient frontier\***



ILLUSTRATIVE

● risk-return profiles insurance companies  
 → convergence creates force toward efficient frontier

\* however, the overall effect interferes with other influences like the insurance cycle, loss development, investment results and economies of scale.

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## Convergence between insurance and capital markets is a positive for insurers and society (2/2)

Society & capital markets

- Broader access to insurance risks
- Lower prices for insurance cover
- Increased transparency about risks due to „mark-to-market“ tradability
- Enhanced investment universe  
=> **efficient frontier moves upward**

▶ Improved risk/return profile for insurance industry and society

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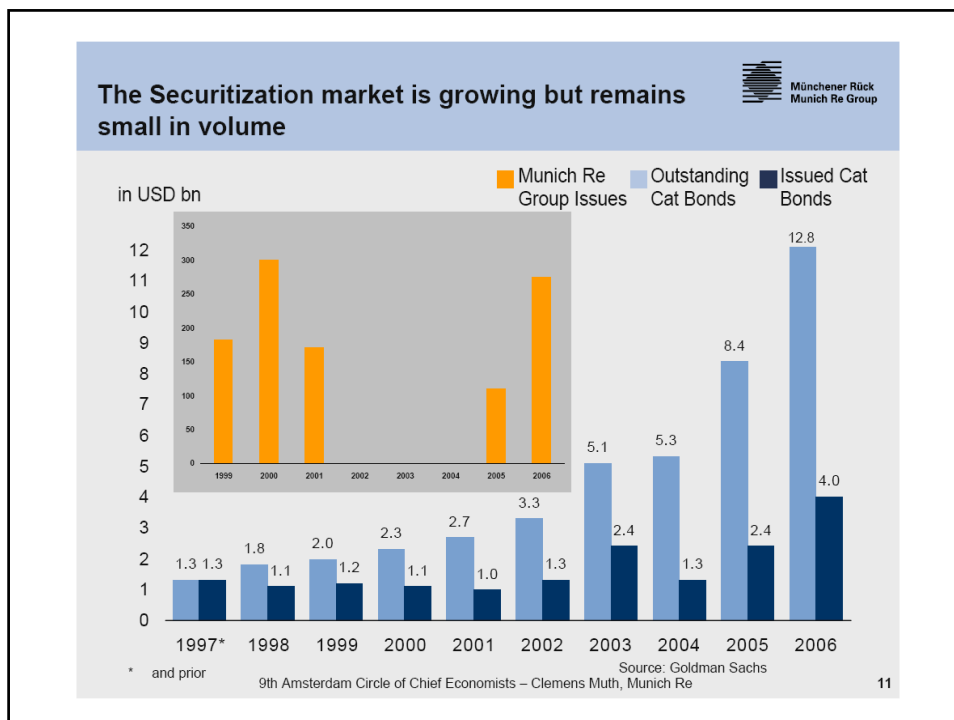
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## Often insurance-capital market interaction is defined solely as securitization

Capital Markets

▶ Improved risk/return profile for insurance industry and society

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### Significant growth in Securitization market in 2006 following KRW

- The cat bond market has further matured, in 2006 record issuance of about USD 4 bn
- New risks transferred to capital markets (industrial 3rd party liability, motor portfolio, trade credit, Mexico EQ, mortality) allow investors to diversify into new risk classes
- Cat bond spreads tightened before Hurricane Katrina but widened substantially thereafter
  - Storm resulted in first well-known total loss, i.e., Kamp Re
  - Spread widening in particular for critical exposure zones (e.g. US hurricane)

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Munich Re's risk trading approach

**Munich Re's Risk Trading approach**

<div style="background-color: #1a3d54; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.9em;">Managing our own risks</div> <ul style="list-style-type: none"> <li>▪ Optimise portfolio</li> <li>▪ Use of additional capacity</li> </ul> <div style="background-color: #1a3d54; color: white; padding: 2px 5px; text-align: center; font-weight: bold; margin-top: 10px;">             Improve our risk/return profile and save costs         </div>	<div style="background-color: #1a3d54; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.9em;">Managing our clients' risks</div> <ul style="list-style-type: none"> <li>▪ Consulting, structuring, project management and placement support</li> <li>▪ Risk fronting / transformation and (interim) capacity provider</li> </ul> <div style="background-color: #1a3d54; color: white; padding: 2px 5px; text-align: center; font-weight: bold; margin-top: 10px;">             Fee and risk-based income         </div>
<div style="background-color: #1a3d54; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.9em;">Risk warehousing</div> <ul style="list-style-type: none"> <li>▪ Retain risks</li> <li>▪ Be active player in primary and secondary market</li> </ul> <div style="background-color: #1a3d54; color: white; padding: 2px 5px; text-align: center; font-weight: bold; margin-top: 10px;">             Risk-based, investment and arbitrage income         </div>	<div style="background-color: #1a3d54; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.9em;">Restructuring and reselling</div> <ul style="list-style-type: none"> <li>▪ Extension of "buy and hold" strategy</li> <li>▪ Combine and restructure risks</li> <li>▪ Sell at favourable terms and conditions</li> </ul> <div style="background-color: #1a3d54; color: white; padding: 2px 5px; text-align: center; font-weight: bold; margin-top: 10px;">             Fee and arbitrage income         </div>

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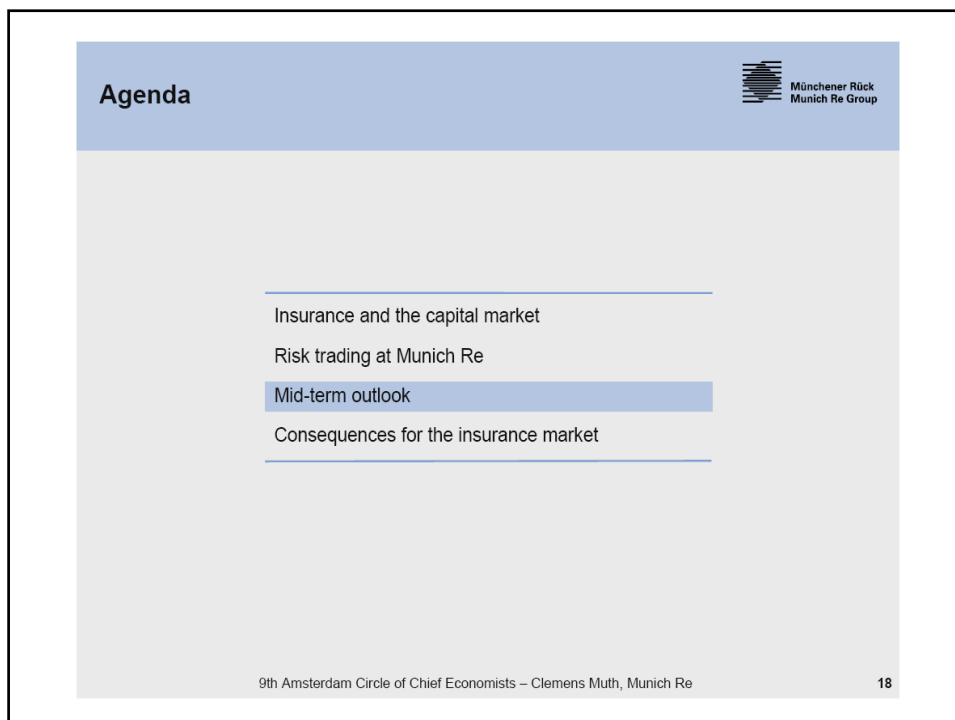
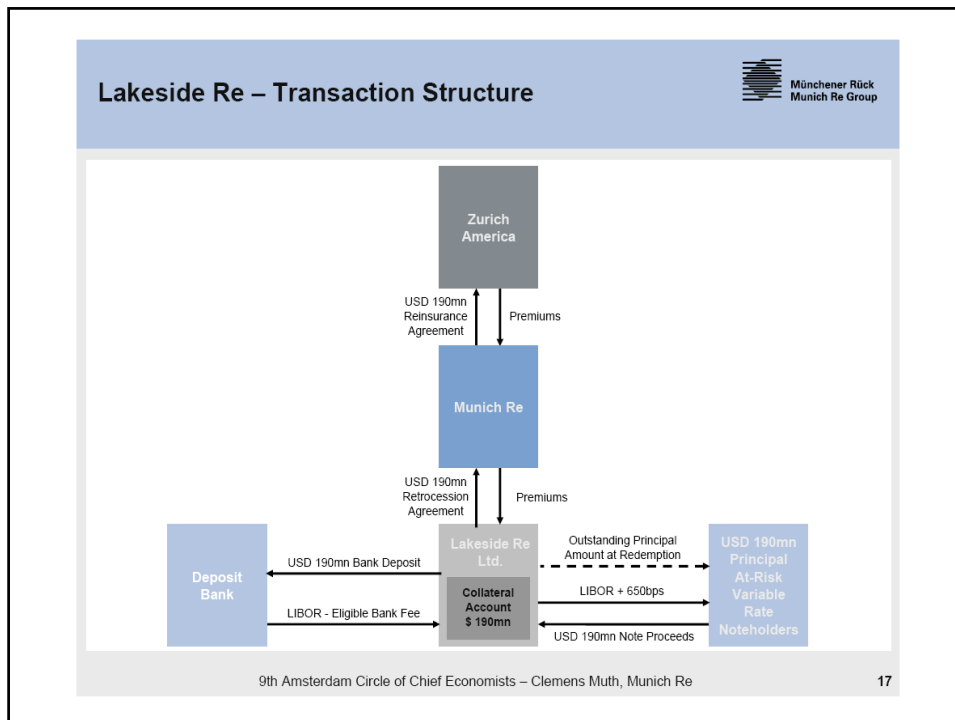
Risk Trading – Munich Re Track Record			
Transaction Name	Closing	Vol.	Covered Perils
Pacific Re	06/98	80	▪ Typhoon Japan
Gold Eagle Capital*	12/99	182	▪ Hurricanes in East and Golf coast area ▪ Earthquakes in New Madrid area ▪ Earthquakes in California
PRIME Hurricane	12/00	165	▪ Hurricanes in New York & Miami area
PRIME CalQuake & EuroWind	12/00	135	▪ Earthquakes in N and S California ▪ Windstorms in select European Countries
Gold Eagle 2001*	04/01	120	▪ Hurricanes in East and Golf coast area ▪ Earthquakes in New Madrid area
Aiolos	11/05	110	▪ Windstorms in selected European Countries
Carillon	06/06	85	▪ US Hurricanes Nationwide. PCS
Lakeside Re	12/06	190	▪ Earthquake in California

\* American Re

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Lakeside Re – Transaction Overview	
<b>Issuer</b>	Lakeside Re Ltd., a Cayman Islands exempted company licensed as a Class B insurer
<b>Reinsurer</b>	Münchener Rückversicherungs-Gesellschaft Aktiengesellschaft ("Munich Re")
<b>Ceding Insurer</b>	Zurich American Insurance Company ("Zurich"), for itself and its Pool Members ("ZAIC Pool")
<b>Ceding Insurer Affiliates</b>	Certain branches and affiliates of the Zurich Insurance Company other than the ZAIC Pool
<b>Securities Offered</b>	USD 190,000,000 Principal At-Risk Variable Rate Notes
<b>Closing Date</b>	December 20, 2006
<b>Risk Period</b>	December 21, 2006 to December 23, 2009
<b>Scheduled Redemption Date</b>	December 31, 2009
<b>Triggers</b>	(i) Industry Loss threshold based on PCS Reports (ii) Ultimate Net Loss based on actual claims
<b>Covered Territory</b>	The United States state of California
<b>Named Peril</b>	Earthquake
<b>S&amp;P Rating</b>	On the Closing Date, the Notes are expected to be rated "[BB+]"
<b>Distribution</b>	144A Private Placement to Qualified Institutional Buyers in Permitted Jurisdictions who, for U.S. Persons, are also Qualified Purchasers and residents of and purchasing in a Permitted U.S. Jurisdiction or a Permitted Non-U.S. Jurisdiction

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### Continued growth in securitization market, but structural impediments remain

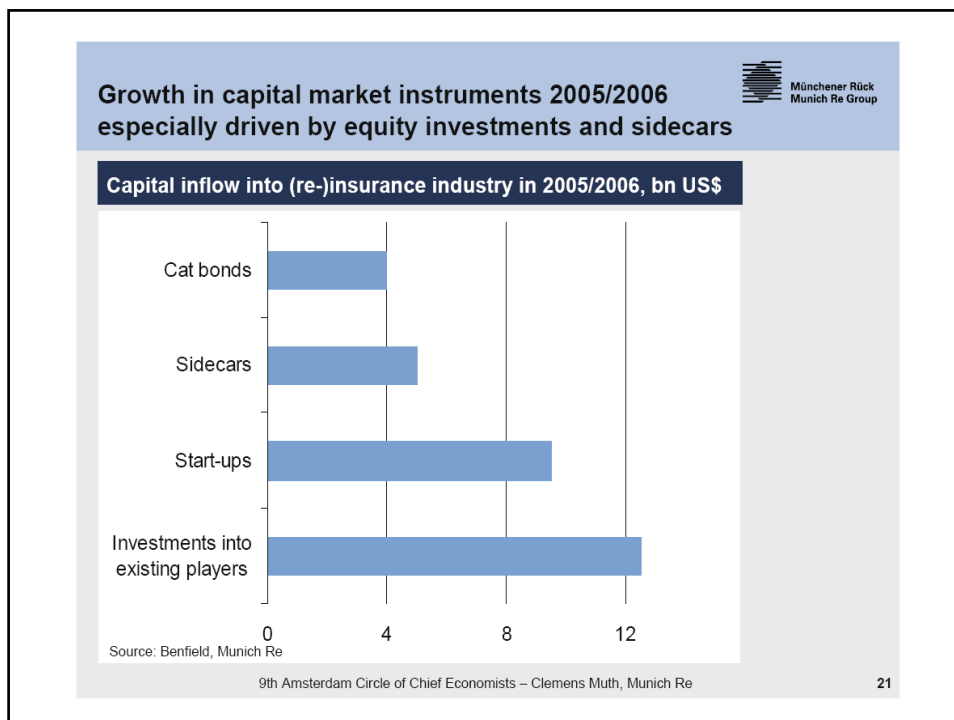
- Trend towards further securitization, not only in nat-cat but also in other lines of business
- Especially large insurers' demand for risk transfer to capital markets as larger deal sizes reduce transaction costs
- Reinsurance remains key with low transaction costs
- But: Continued impediments for securitization due to e.g.:
  - lack of ability to transfer basis risk
  - low standardization / heterogeneous risks
  - lack of appropriate indices for building triggers
  - risk disclosure requirements
  - rating caps

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### Substantial growth in capital markets and insurance interaction especially likely in sidecars and direct engagement

The diagram illustrates the interaction between Capital Markets and Insured parties. On the left, Capital Markets are represented by a vertical bar with various investment types: Bond Investment, Hybrid Investment, and Equity investment. On the right, Insured parties are represented by a vertical bar. In the center, Reinsurers (Multiliners - Monolines) and Direct insurers (Sidecars, Captives) act as intermediaries. Arrows indicate the flow of capital from Capital Markets to Reinsurers and Direct insurers, and then to Insured parties. Specific market segments like SPV, Hedge Funds Investment, CDS, Retro market, and ILW market are also shown as part of the capital flow.

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**Growth especially in new structures**

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- More than 5bn US\$ of officially announced capital inflow into sidecars in 2005/6 easily outpacing capital inflow into cat bonds
- Increase in undisclosed transactions (currently estimated 3-5 bn US\$) and partly engagement of capital market participants in retro and ILW market
- Investment banks enter cat market and life market via CDx like structures => Beginning convergence of retro market and CDx market

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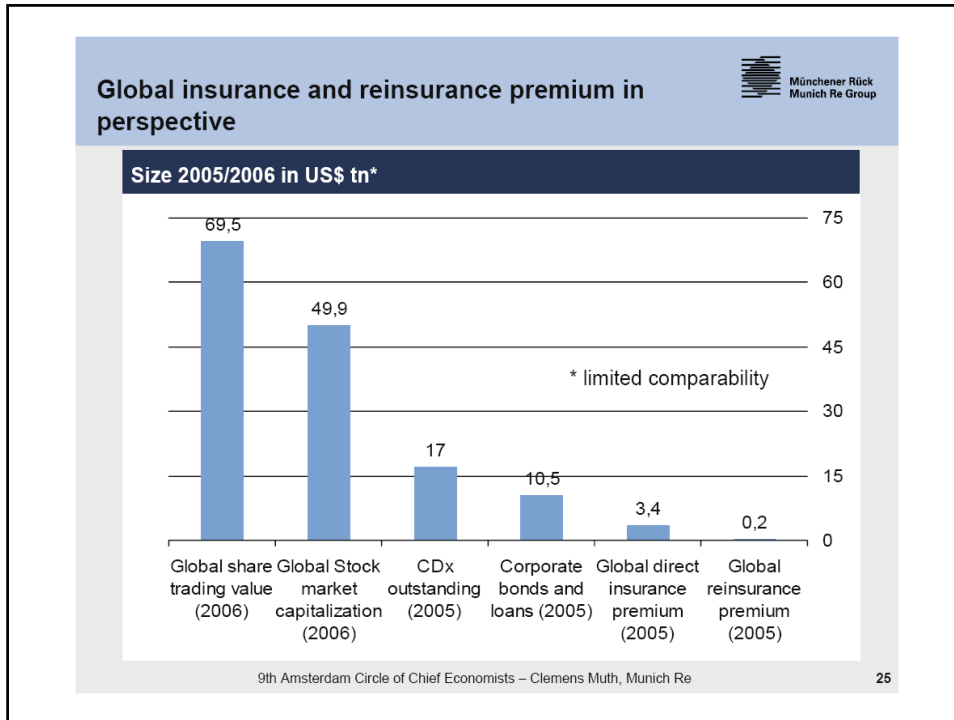
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Character of handling of insurance risks changes due to increased convergence with capital markets

	past world	future world
<b>Acquiring insur. risks</b>	<ul style="list-style-type: none"> <li>▪ Only possible through underwriting</li> </ul>	<ul style="list-style-type: none"> <li>▪ Acquisition via underwriting and buying insurance-risks via capital market solutions</li> </ul>
<b>Holding risks</b>	<ul style="list-style-type: none"> <li>▪ (Re-)insurer as a risk warehouse and main holder of insurance risks in society</li> </ul>	<ul style="list-style-type: none"> <li>▪ (re-) insurer also a transformer of risk and a service provider for transactions.</li> <li>▪ CM participants hold insurance risk</li> </ul>
<b>Shedding unwanted risks</b>	<ul style="list-style-type: none"> <li>▪ Reinsurance / retro essentially the only possibility to get rid of unwanted insurance risks</li> </ul>	<ul style="list-style-type: none"> <li>▪ Various capital market instruments as a complementary way of hedging</li> </ul>
<b>Structure of products</b>	<ul style="list-style-type: none"> <li>▪ Mainly insurance based</li> </ul>	<ul style="list-style-type: none"> <li>▪ Convergence of insurance solutions and credit market solutions</li> </ul>
<b>Insur. price volatility (cycle)</b>	<ul style="list-style-type: none"> <li>▪ High insurance specific volatility, due to existing market entry and exit barriers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reduced insurance specific volatility</li> </ul>
<b>Correlation with credit markets</b>	<ul style="list-style-type: none"> <li>▪ Low due to market fragmentation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Increasing, as capacity also is provided by capital markets, convergence</li> </ul>

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### Consequent structural increase of interdependence of insurers and capital markets



- Increase in collateralized reinsurance (rise of Bermuda)
- Increase of engagement of short-term capital in insurance
- Growing dependency on “retro” via capital markets due to change of business model (risk transformer vs. risk warehouse)

Growing dependency on state of capital/ credit markets and market liquidity

▶ Dependency varies subject to business model of the (re-)insurer.

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**Trend parallel to structural change in credit markets**

- Structural change in credit markets
- Boom of the CDx market since the beginning of the century
- Increased role of non-banks in the credit market, incl.
  - hedge funds
  - pension funds
  - **insurers**
- Increased complexity of structures including administration/settlement

Credit derivatives outstanding (tn US\$)

Sources: Bank for International Settlements; International Swaps and Derivatives Association; British Bankers' Association; and Risk magazine.  
<sup>1</sup>Credit derivatives, as reported here, comprise credit default swaps, credit-linked notes, and portfolio swaps.  
<sup>2</sup>Data for 2006 are only available through the third quarter.

Source: International Monetary Fund, April 2006

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**Litmus test of “new capital market order” still to come**

- Transparency on financial markets about „ultimate holder of credit risk“ increasingly limited
- Many banks heavily dependent on permanently liquid and functioning markets („deal flow risks“)
- May/June 2006 Emerging Market turbulences and GM/Ford case 2005 as early warning signals?

EMBI Global composite total return index

Source: Datastream

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**Conclusion: Increased interaction with more capital efficiency but new challenges especially regarding liquidity risk**



- Further increase in capital efficiency to the benefit of insurers, capital markets, insured and society
- Increased capital market interaction increases interdependence between insurance and capital markets
- Dependence of insurance industry and insurance cover on state of the credit market and market liquidity on the rise
- Need to avoid regulatory arbitrage and to have similar supervisory regimes for insurance and capital markets solutions (SPV's)

▶ Need to adapt risk management framework to changing environment.