

Enterprise Risk Management

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Enterprise Risk Management (ERM) builds on a simple philosophy

”The purpose of Risk Management is to take and control the right risks to create return – not to eliminate risks”

COSO II
FEE Discussion paper, EU Marts 2005

Strategic Risk Management

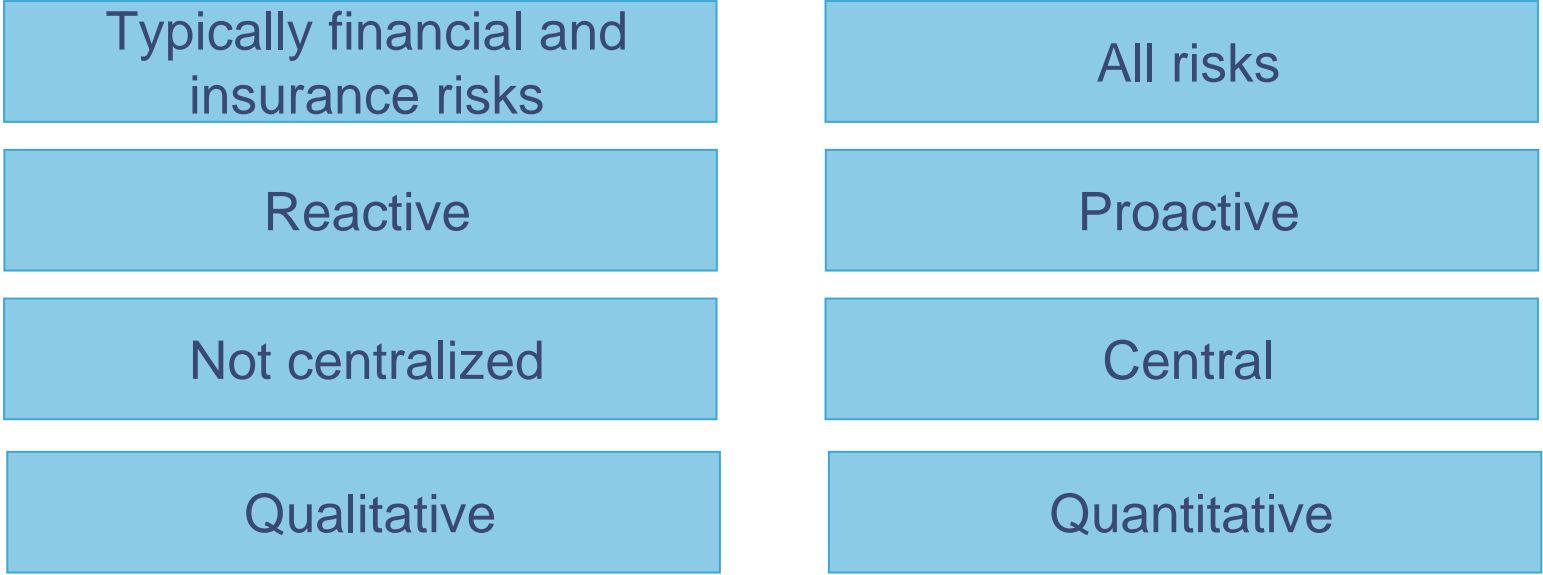
Holistic Risk Management

Integrated risk management

ERM

Enterprise Risk Management

Is ERM not just old vine on new bottles? Companies have always worked with risks ...



All in all creates modern Risk Management value added to the company

The primary in ERM is a structured way of doing it

Advantages:

Avoid local sub-optimizing: Over- or under management of the risks

- Have to bring in the correlations between the risks and secure a consistent risk appetite

Ensure the same methods are used all Risk Management activities

- Optimizes processes and enables consistent reporting

Makes it possible to demonstrate that the company applies with roles and legislation – compliance.

Hedge – internal hedge

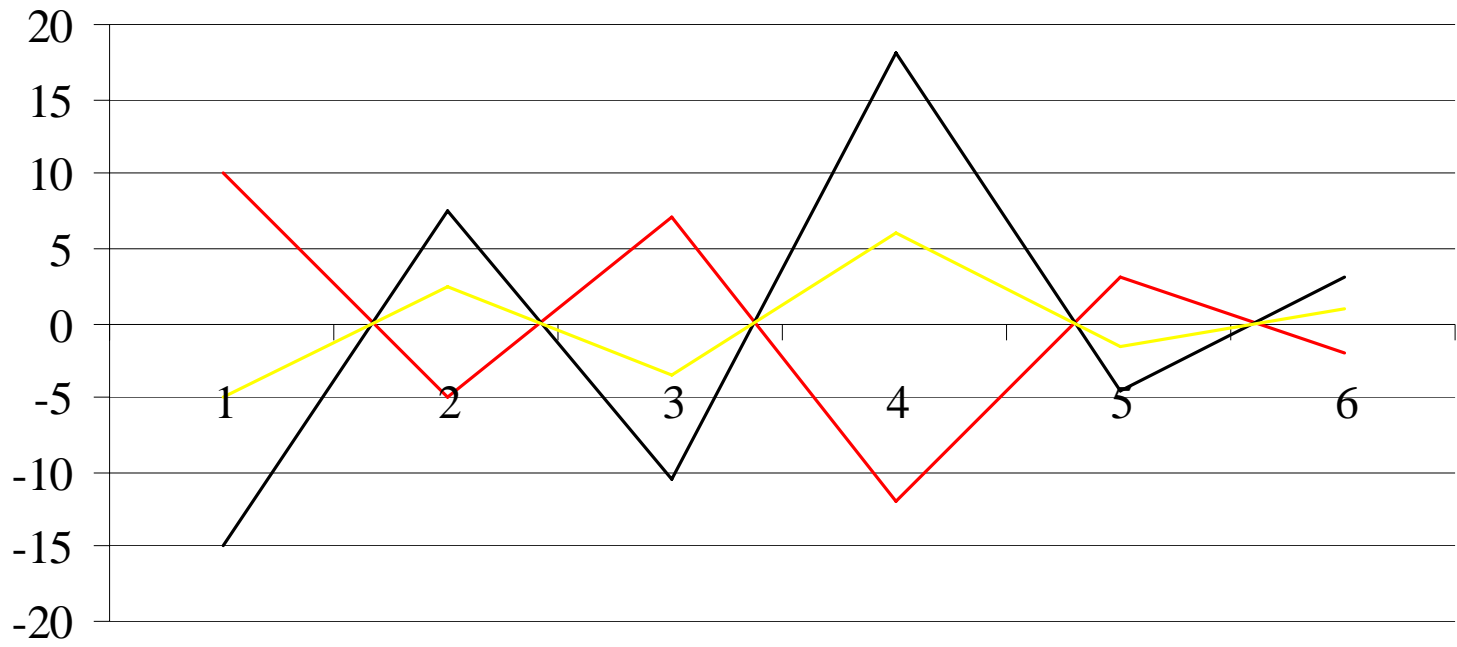


Figure 2
Gross loss ratio and the cost of reinsurance
Topdanmark



Risk management "model"

Identification of the risks to be included in the "model"

Collection of data for the risks

Statistic analysis of the risks to estimate the statistical distributions (probability and consequence)

Subjective analysis of the non-data driven risks to estimate the statistical distributions (probability and consequence)

Quantitative and qualitative analysis's of correlations between risks

Monte Carlo simulations

Sensitivity analyses and review of the model

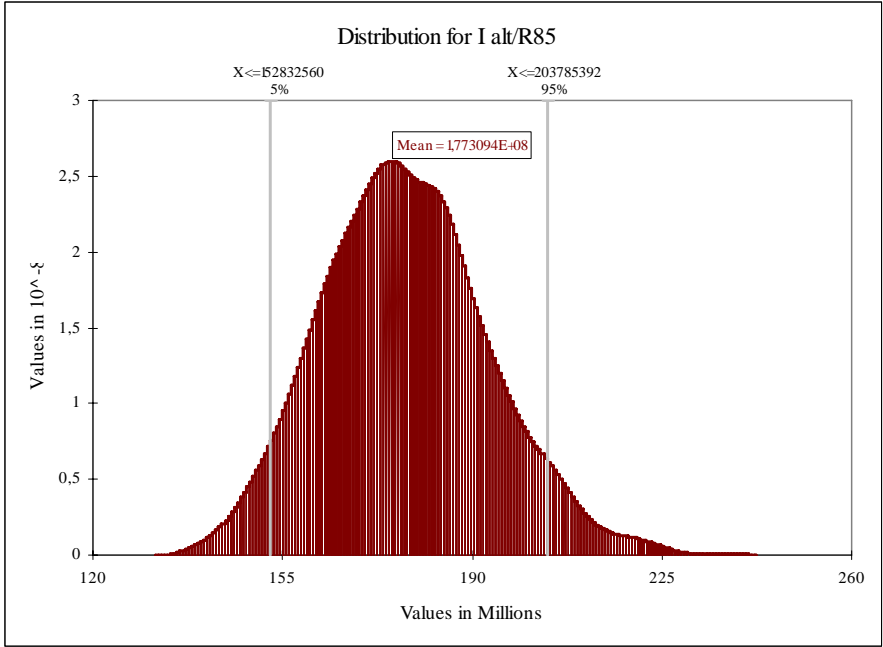
Result analysis

Case - Copenhagen Fur Center

- **Goal 1: Get more knowledge about the company and the risks**
 - **The result before tax and the risks associated with that**
- **Goal 2: Is it possible to reduce the cost of risk**
 - **Prioritizing the risks**
 - **Insurance/hedge**
- **Goal 3: The model has to be the basis for risk adjusted decisions**
- **Goal 4: The start of a better risk awareness in the organization**
- **How can CFC extend this model**

The “theoretical result”

<i>Fraktil</i>	I alt
1%	144.418.459
5%	152.910.668
10%	157.723.554
25%	166.707.516
50%	176.578.312
75%	187.384.268
90%	197.415.962
95%	203.976.721
99%	217.107.252
Gennemsnit	177.303.695



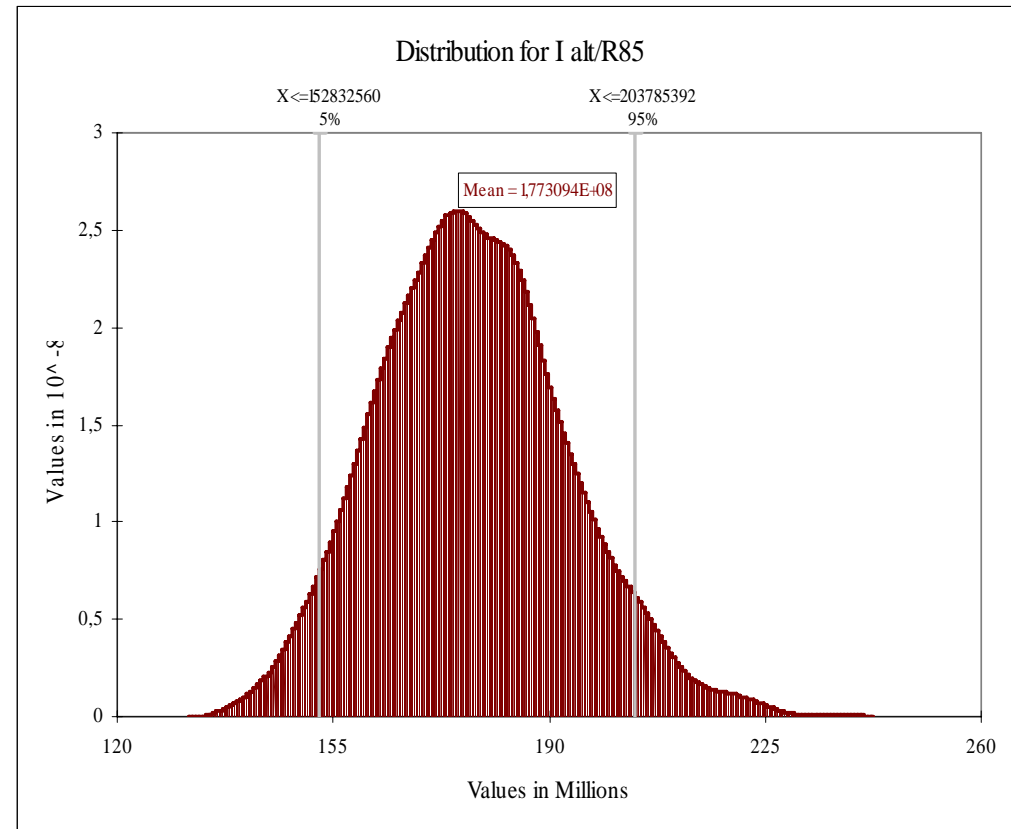
- **Big volatility in the expected result**
- **Not all risks in the company is included in the model only the risks the company initially found relevant**
- **There can be other “imported” risks that can at a later stage be included in the model**
- **Good basis also for an extension of the model (start “simple”)**

”Expected result”

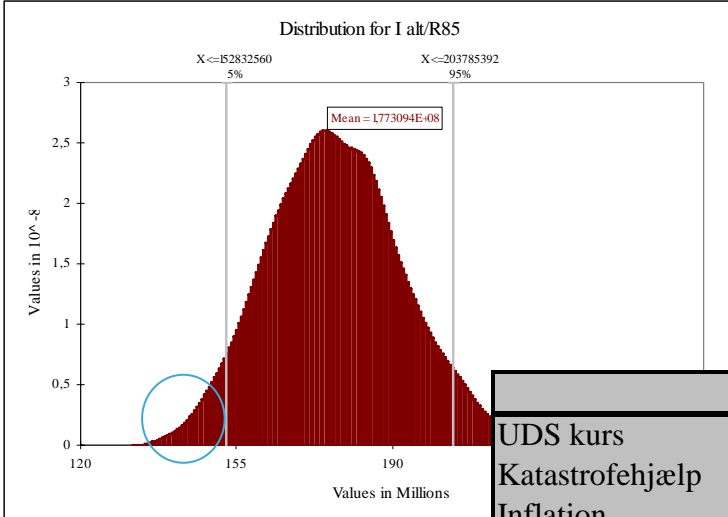
- **Expected result: 177 mDKK**
- **5% probability for a result < 153 mDKK**
- **5% probability for a result > 204 mDKK**

Risk factors (some of them):

- **USD**
- **Catastrophic help**
- **Inflation**
- **Wage development**
- **Marked share on different furs**
- **Price on different furs**
- **Price on transport and delivery**



What risk factors is driving worst case



	TailVaR 95%	Korr TailVaR 95%	% bidrag til TailVaR
UDS kurs	153,4	-23,8	39,22%
Katastrofehjælp	168,8	-8,4	13,84%
Inflation	173,4	-0,01	0,02%
Løn	176,4	-0,9	1,48%
Markedsandele og produktion			
Mink	172,8	-4,5	7,42%
Ræve	177,2	-0,07	0,12%
Andre	177,1	-0,2	0,33%
Priser			
Mink	159,6	-17,7	29,17%
Ræve	176,9	-0,4	0,66%
Andre	176,8	-0,5	0,82%
Fragt og ermballange	173,5	-3,8	6,26%
Avlerafgift andre skin	176,9	-0,4	0,66%

In other words.....

the risk adjusted model is complex and sensitive to small changes in assumptions made

...

but that reflects just that *CFCs earnings and risk management* is sensitive to small changes in fundamentals in the business

Goal 2:

Is it possible to reduce the cost of risk – insurance analysis

General observations:

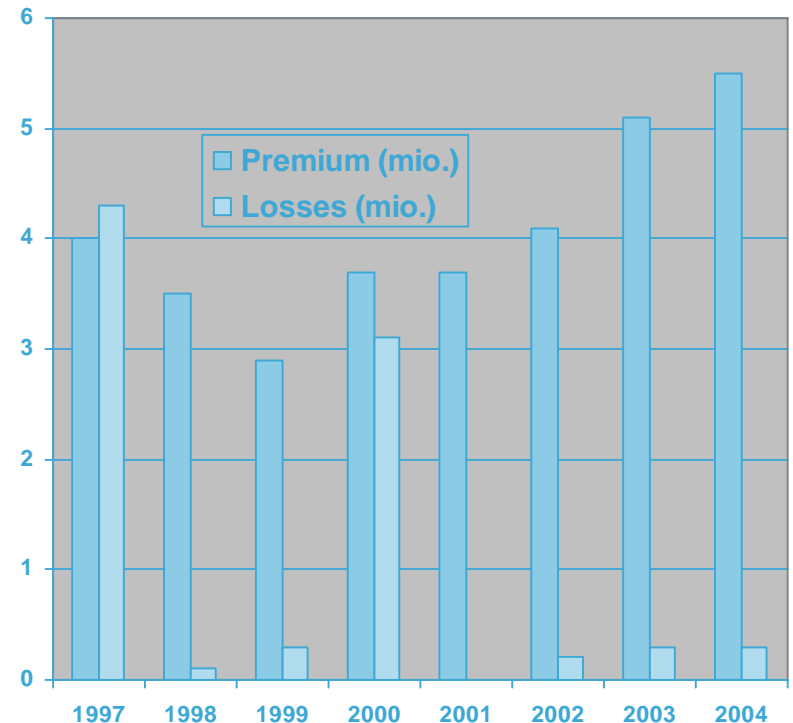
The insurance program has only had effect in 1997 and 2000 because of big losses otherwise the insurance program has been expensive

Some changes could be considered

- increase the retention
- start a captive
- make a all risk solution
- ??

Vi need to make a deeper analysis to look in to pro and cons in the different alternatives

Insurance results



Insurance analysis

<i>Fraktil</i>	I alt uden forsikring	I alt med forsikring	Skadesomkostninger
0,01%	-24.496.468	122.141.098	-203.107.038
1,00%	141.455.305	138.615.032	-10.432.486
5,00%	151.031.474	147.584.264	-3.964.867
10,00%	156.508.525	152.274.499	-2.597.692
25,00%	165.523.064	160.939.092	-1.313.528
50,00%	175.526.168	171.180.488	-620.869
75,00%	186.119.332	181.777.200	-295.614
90,00%	196.471.301	191.879.226	-151.485
95,00%	203.068.581	198.550.061	-101.822
99,00%	214.335.382	210.761.553	-48.194
Gennemsnit	176.046.477	171.761.967	-1.258.538

The consequences of the results for the Risk Management in CFC

Focus on Risk Management in CFC!

- CFC will reduce the consequences of the volatility in prices on fur (control, core risk) and USD (hedge, not core risk)
- Change the insurance program (savings 4 mDKK)
- Expand the model to other types of risk e.g. strategic
- Use the model to communicate with CFCs shareholders

Goal 3:

Basis for better investment decisions

- Better knowledge of investment possibilities with a high return and where the risk doesn't affect the total risk of CFC a lot, big potential in the new way of dealing with risk/return measurement
 - New markets to increase the marked share (Asia, middle east)
 - Other furs
 - Increase in capacity
 - ...
- Expand the model to cover multi periods that can give a better basis for investment decisions like increase in capacity, new technology...

Goal 4:

Basis for better risk awareness in CFC

- Heighten the risk awareness
- Knowledge of the risk factors in CFC
- Performance measurement based on risk adjusted return

Questions and comments

Then let's see the model