



CARIBBEAN ACTUARIAL ASSOCIATION



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Capital Regimes – What's appropriate for the Caribbean?

Experiences in the Dutch Caribbean

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Background

- Dutch Caribbean consisting of 6 islands with total population of around 310.000 inhabitants
- Part of Kingdom of the Netherlands, different islands have different status
- Several official languages: Dutch, English and Papiamentu
- Islands spread over the Caribbean



Some famous quotes around data

- “Lies, damned lies, and statistics” - British Prime Minister Benjamin Disraeli
- “Data! Data! Data!” he cried impatiently. "I can't make bricks without clay.” - Sherlock Holmes in The Adventure of the Copper Beeches

Current capital regime Dutch Caribbean

- Solvency I based regime
 - Statutory reserve reporting
 - Liability adequacy test reporting
- Some careful steps towards risk management
 - Central bank reporting for qualitative risk management: risk describing (risk universe), monitoring, and mitigation
 - No formal quantitative risk management reporting

Data availability

	US/UK	Dutch Caribbean
Stock market	S&P from 1927 onwards	DCSX
Government bond market	First UK gilt 1694	Bought up by Netherlands
Inflation	UK 1981 US TIPS 1997	CBS data
Property	UK: house Price index from 1995	Monthly data from 2001
Insurance risks	Internal and general population studies	Internal and general population studies but risk of sample bias
Overall	Relatively easy to calculate, motivate and implement	Difficult to calculate and how to implement with limited opportunities to create value for the company?



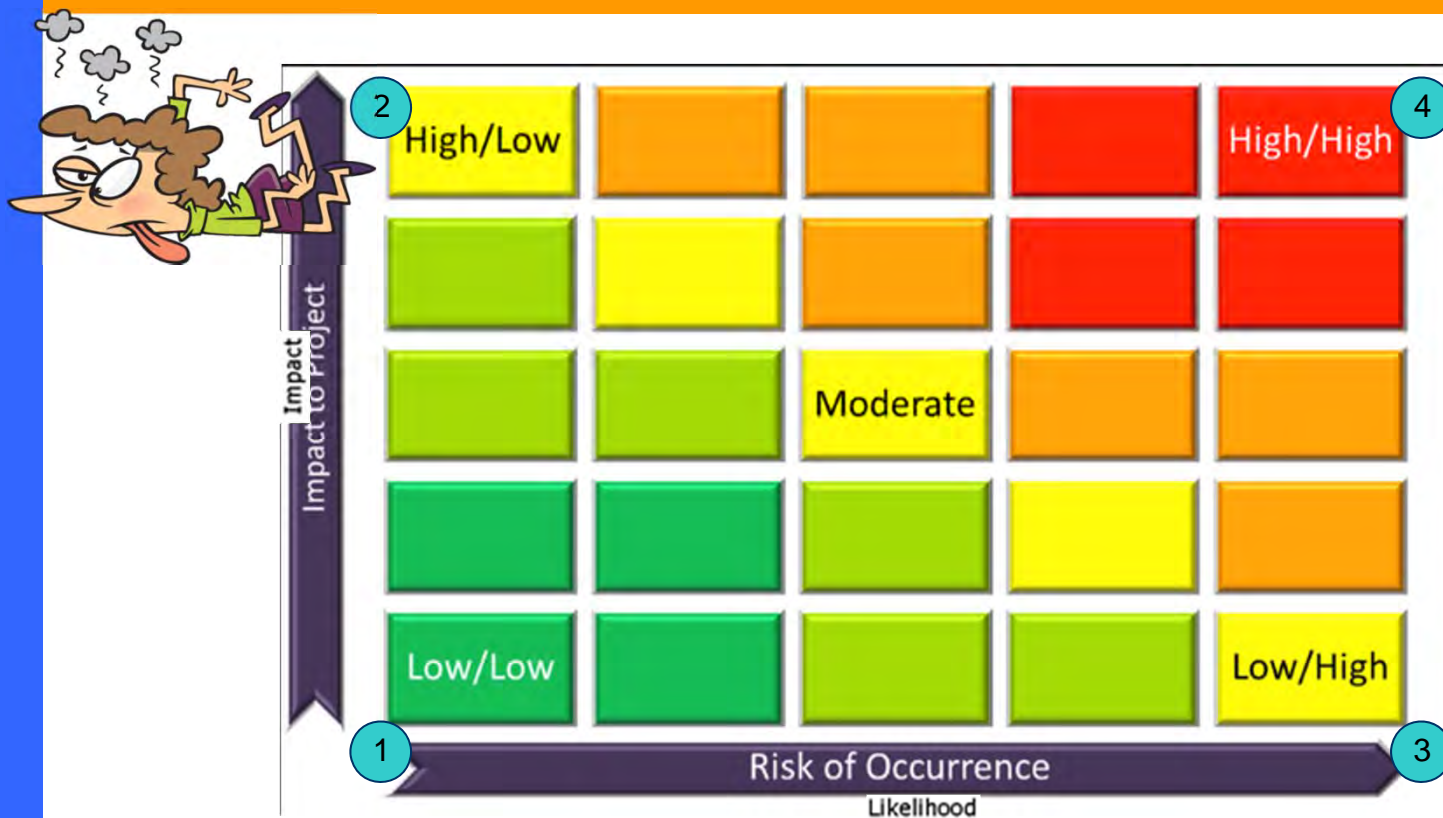
Disadvantages of “expert judgment”

Nr of different people in election poster?

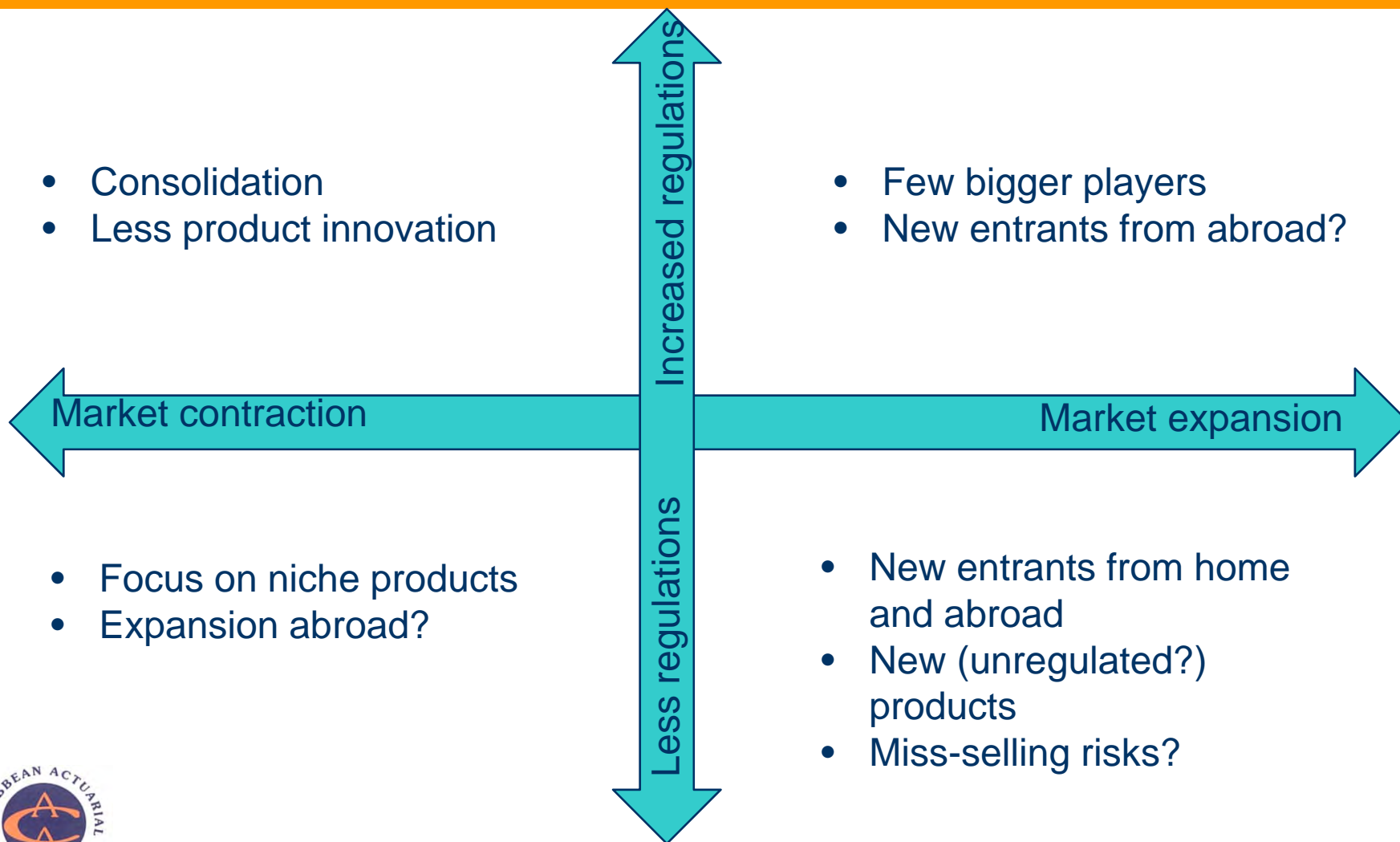
- A. 1-50
- B. 51-100
- C. 101-150
- D. 151-200
- E. 200+



The problem with heatmaps



Scenario creation



Creating distributions

- Even without data one can define risk as frequency times severity
 - Frequency: ask experts
 - What the most likely frequency is of an event
 - Poisson distribution then models likelihood
 - Severity: ask experts
 - What the most likely impact is of an event
 - What the worst impact is in 5, 10, 25 years

Practical example

- Mortality study on insured population Dutch Antilles
 - Use of trends in general population life expectancy instead of focussing on insured part of the population or worldwide trends
 - Dutch actuarial association uses European trends
 - Backtesting results regularly using moving average
 - Smooth overall pattern from annual extremes

How can economic capital still deliver value? - Diversification is king

- Without data difficult to motivate an extensive economic capital framework.
 - Value therefore not added by looking at correlations between risks and redistributing risks themselves or between business units
 - Instead look for balance of insurance portfolio and ensure offsetting between mortality and longevity risk is maintained

Take aways

- Without data, the most convincing story prevails
 - Find ways to increase data set
 - General trends (in overall population or worldwide)
 - Create operational risk database (UK): adjust impact of risk to size of organisation
- Use blend of data, scenario analysis, and expert judgement
 - Apply simple sensitivity tests instead of stories
- Without data the crude tool of additional capital buffers might be most practical

Conclusion

“It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.”

Sherlock Holmes, A Scandal in Bohemia

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About me



Servaas Houben is managing the actuarial department of ENNIA in Willemstad, Curacao. He studied econometrics in the Netherlands and worked there for the first 4 years of his career. Thereafter, Servaas worked in Dublin and London. Besides actuarial, Servaas completed the CFA and FRM qualifications. Servaas regularly writes for his blog, CFA digest, and (actuarial) magazines.

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