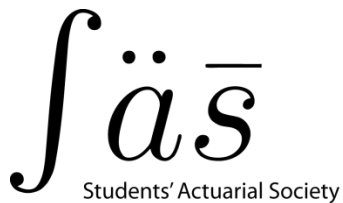


# SAS Conference 2012

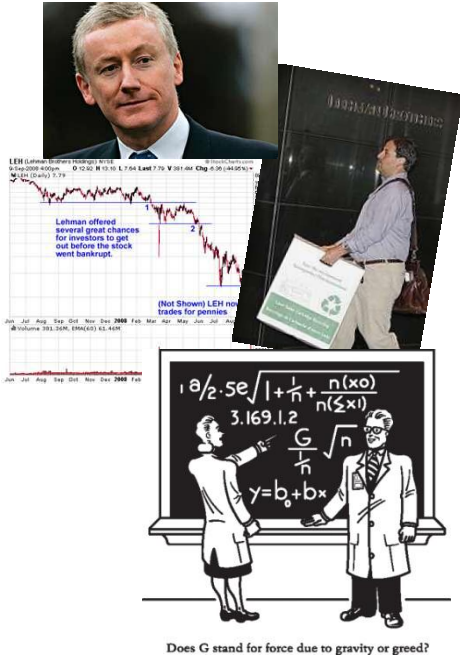


# Enterprise risk management for actuaries: a paradigm shift or the emperor's new clothes?

- David C Bowie
- February 2012

Real people. Real skills. Real results.

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LEHMAN BROTHERS FINANCIAL SERVICES INC. 01/14/2008 4:00pm  
 O 12.90 M 13.15 L 7.54 Last 7.75 V 281.4K Chg 0.36 (4.55%)  
 %EV (2008) 7.75

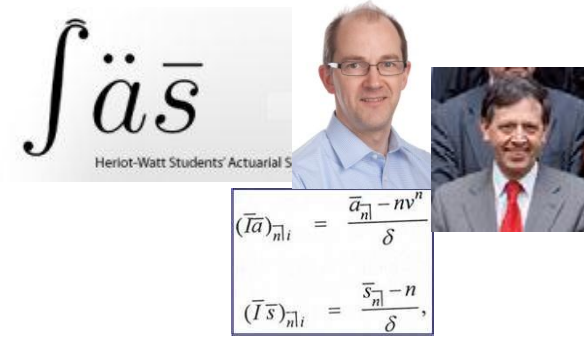
Lehman offered several great chances for investors to get out before the stock went bankrupt.

(Not shown) LEH trades for pennies.

1  $\sigma = \sqrt{\frac{1}{n} \sum (x_i - \bar{x})^2}$   
 $1.2 = \sqrt{\frac{1}{n} \sum (x_i - \bar{x})^2}$

$y = b_0 + b_1x$

Does G stand for force due to gravity or greed?



Heriot-Watt Students' Actuarial

$$(\bar{a})_{\overline{n}|i} = \frac{\bar{a}_{\overline{n}|i} - nv^n}{\delta}$$

$$(\bar{s})_{\overline{n}|i} = \frac{\bar{s}_{\overline{n}|i} - n}{\delta}$$


 Sarbanes - Oxley

**ICB** Independent Commission on Banking




**PENSIONS**

**Young Members Hit Hardest**

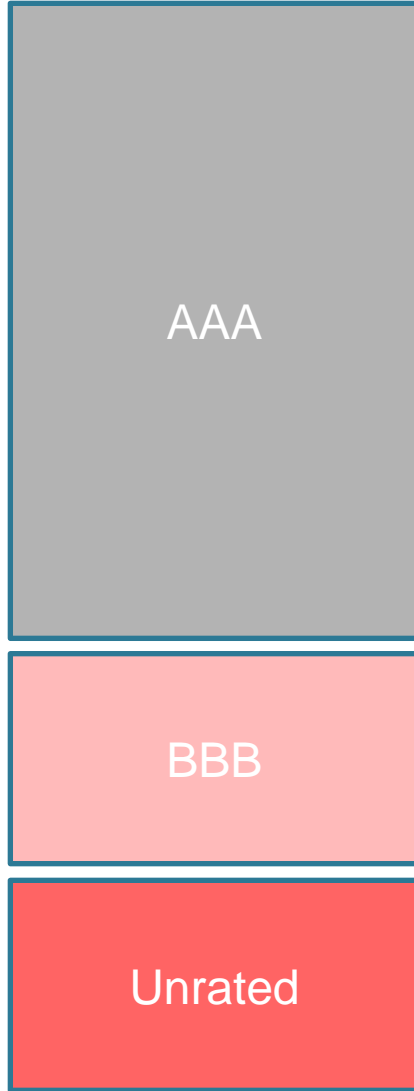
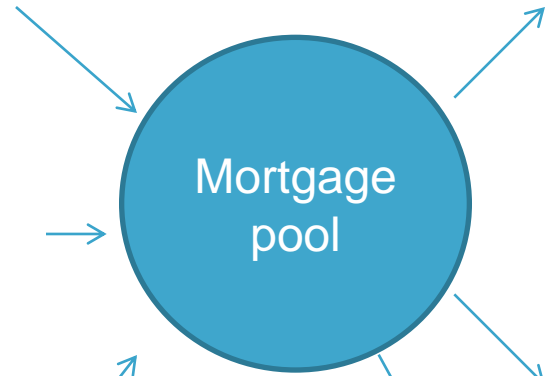
- Young members across Scotland are the most at risk of being financially ill prepared for their pension and living expenses.
- The pension fund you will have been of for many years will have been of for many years.
- The more you have to work with, the more you will have to work with.
- The more you have to work with, the more you will have to work with.



*Enterprise risk management is a **process**, effected by an entity's **board of directors, management and other personnel**, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its **risk appetite**, to provide reasonable assurance regarding the achievement of entity **objectives**.*

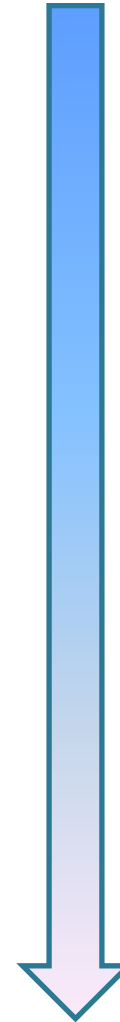
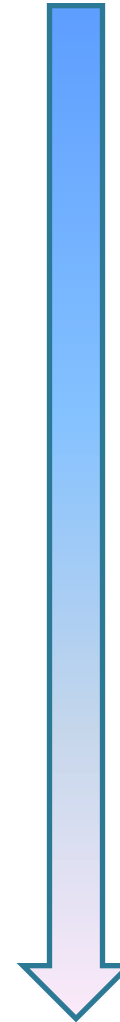
# The lists of ERM

- **Strategic** – high-level goals, aligned with and supporting its mission
- **Operations** – effective and efficient use of its resources
- **Reporting** – reliability of reporting
- **Compliance** – compliance with applicable laws and regulations
- Internal Environment
- Objective Setting
- Event Identification
- Risk Assessment
- Risk Response
- Control Activities
- Information and Communication
- Monitoring



Risk

Yield



Lower

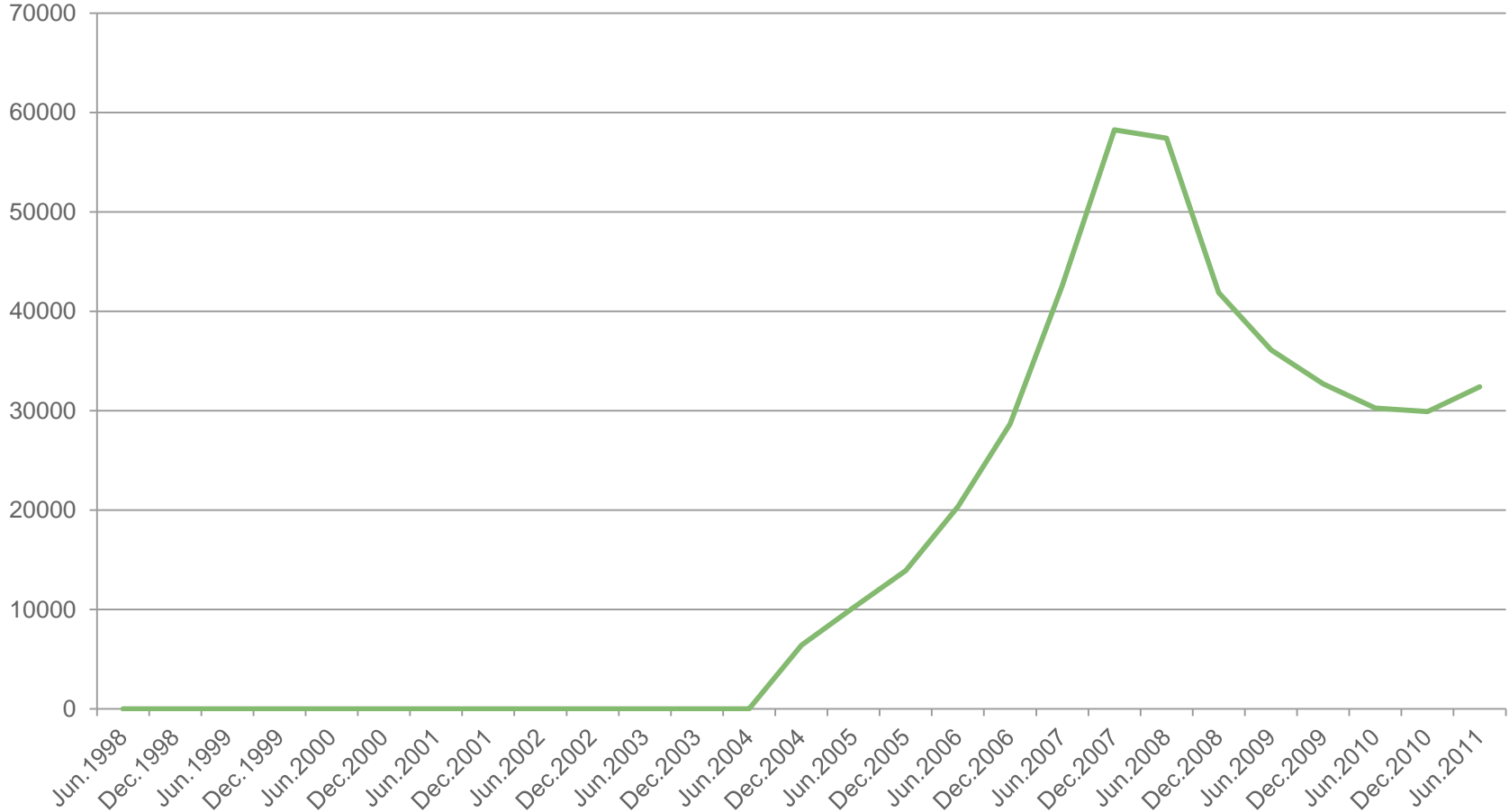
Higher

Borrowers



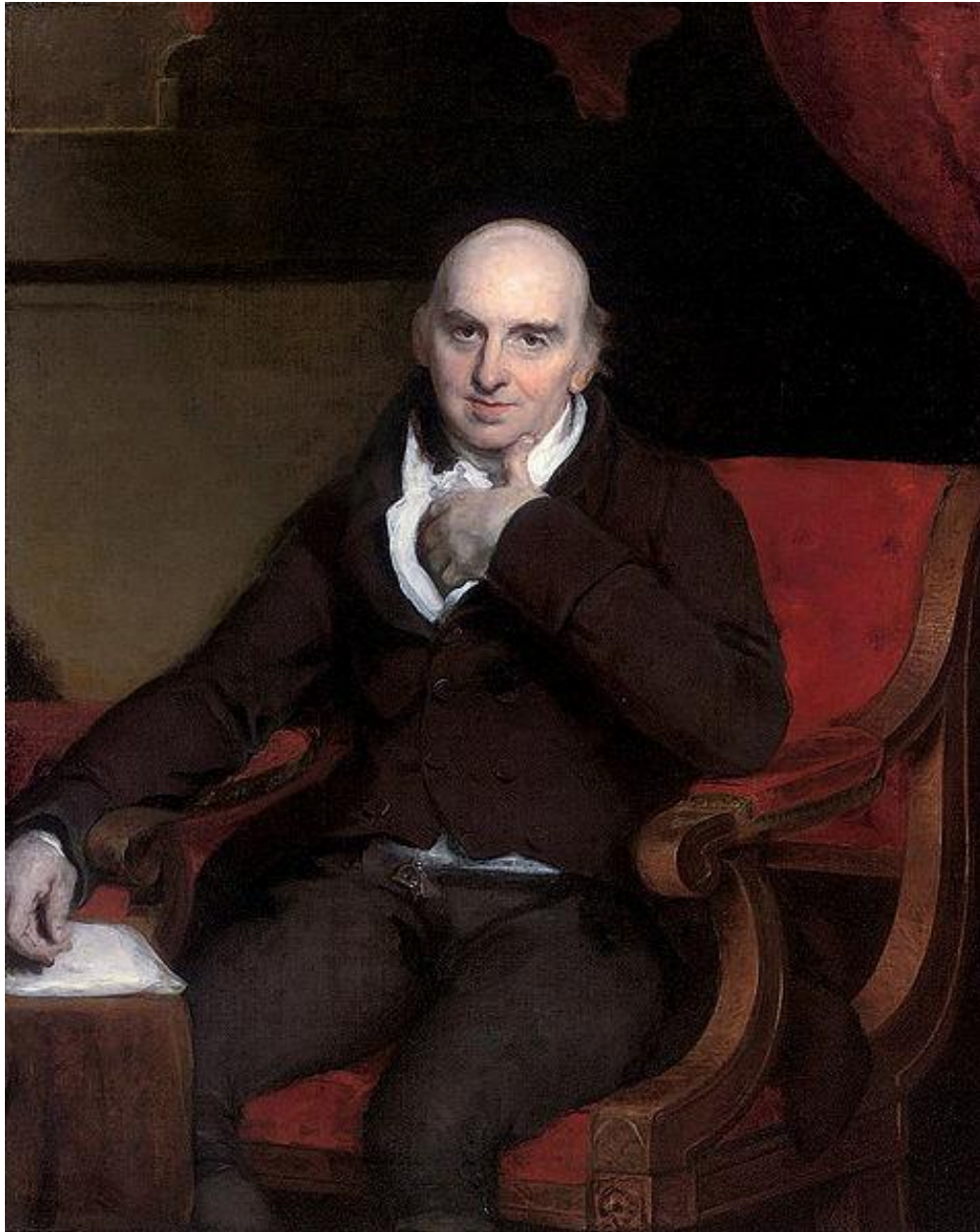
# CDS notional outstanding

\$bn USD



Source: Bank for International Settlements











**Thank You**

Any questions?