

國立臺北大學自然資源與環境管理研究所

101 學年度第一學期 『環境災害與風險管理』

課程講義 (十五) : 財務風險管理概要、企業持續營運
Introduction to Financial Risk Management; Business Continuity Planning

http://www.math.nyu.edu/faculty/avellane/global_derivatives_market.pdf

The Global Derivatives Market: An Introduction

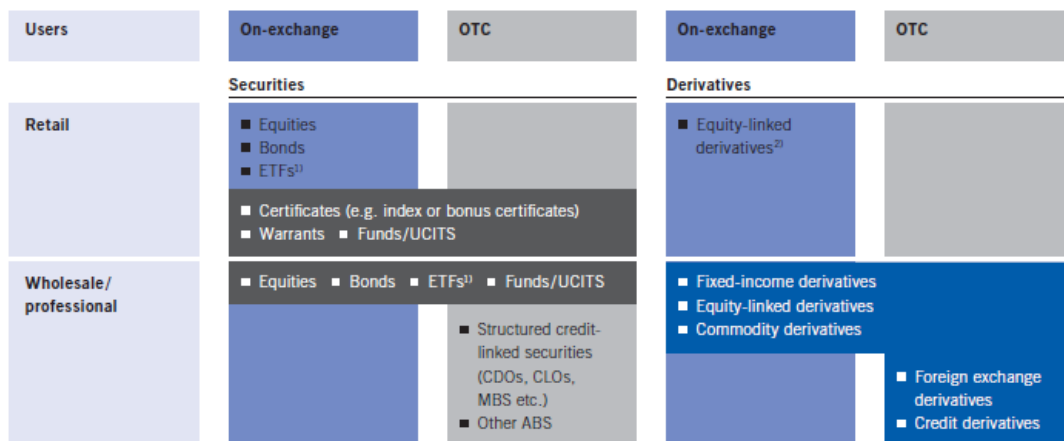
<http://zh.wikipedia.org/wiki/金融衍生工具>; [http://en.wikipedia.org/wiki/Derivative_\(finance\)](http://en.wikipedia.org/wiki/Derivative_(finance))

<http://www.rdec.gov.tw/np.asp?ctNode=12940&mp=100>

研考會首頁/績效考核/風險管理與危機處理/教育訓練教材

- CATEGORIES OF RISK AND BUSINESS RISKS (Holmes, 2002)
 - Categories of Risk (Holmes, 2002, pp.6-7): Strategic Risk, Business/Financial Risk, Program and Project Risk, Operational Risk, and Technological Risk
 - Business Risks: Financial vs. Non-financial Risks
 - How to Deal with Risk => Avoid, Reduce, Retain, Transfer, and Share
 - Approaches to Managing Risk (Holmes, 2002, pp.8-9): Identification, Quantification, Managing/Responding, Monitoring/Controlling
 - Key Measures for Risk Management (Holmes, 2002, pp.9-10): sensitivity, volatility, downside measures such as VaR (Value at Risk)
- FINANCIAL RISK MANAGEMENT (Jorion, 2007)
 - Bond Fundamentals => Engineering Economics
 - Capital Market => Derivatives
 - ⇒ Derivatives and Markets: Options, Securities, Equity, Commodities Markets...
 - ⇒ Sources of Risk: Currency, Fixed-Income, Equity, and Commodity
 - Credit Risk Management
 - ⇒ Estimate default probabilities, credit exposures, recovery rates
 - ⇒ Measuring expected credit loss and Measuring credit VaR
 - Operational and Integrated Risk Management
 - Legal, Accounting, and Tax Risk Management => Basel Accord (Basel III)

Exhibit 1: Overview of financial instruments universe

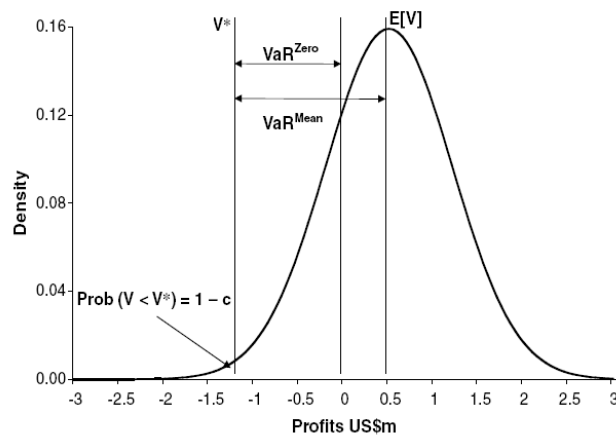


- VALUE AT RISK (VAR or VaR; Krause, 2003; 風險值; 在险价值)
 - Originally VaR was intended to measure the risks in derivatives markets
 - ⇒ Downside measure
 - ⇒ Widely applied in financial institutions to measure all kinds of financial risks
 - The Basic Idea of VaR: Value of an Investment
 - ⇒ Given the cumulative distribution function $F(V)$ of the value of an investment V at the end of a time horizon ΔT , the value of the investment is below V^* with a probability of $1 - c$ satisfies the following relationship,

$$\text{Prob}(V \leq V^*) = \int_{-\infty}^{V^*} dF(V) = 1 - c$$

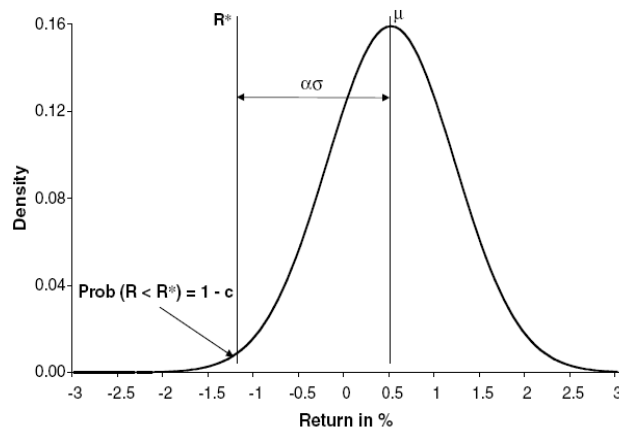
- ⇒ The VaR relative to the benchmark of zero profit V_0 is: $VaR_{c,\Delta T}^{zero} = V_0 - V^*$
- ⇒ The VaR relative to the expected outcome $E[V]$ is: $VaR_{c,\Delta T}^{mean} = E[V] - V^*$

Definition of Value at Risk



- VaR in terms of returns
 - ⇒ Define R^* and μ such that $V^* = (1 + R^*) \cdot V_0$ and $E[V] = (1 + \mu) \cdot V_0$ then
 - ⇒ The VaR relative to the benchmark of zero profit V_0 is: $VaR_{c,\Delta T}^{zero} = -V_0 \cdot R^*$
 - ⇒ The VaR relative to the expected outcome $E[V]$ is: $VaR_{c,\Delta T}^{mean} = -V_0 \cdot (R^* - \mu)$

Determination of the VaR with Normally Distributed Returns

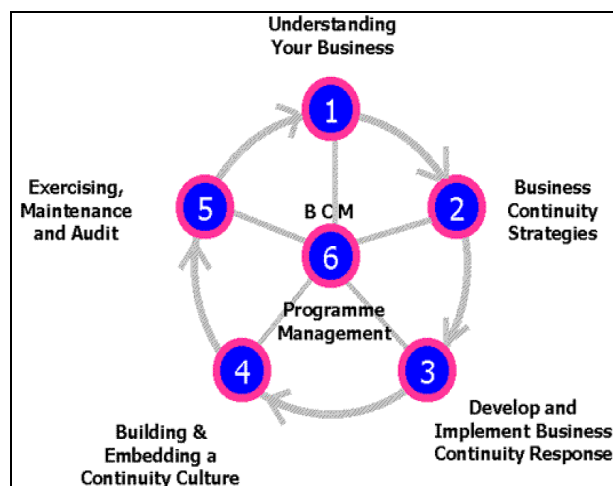
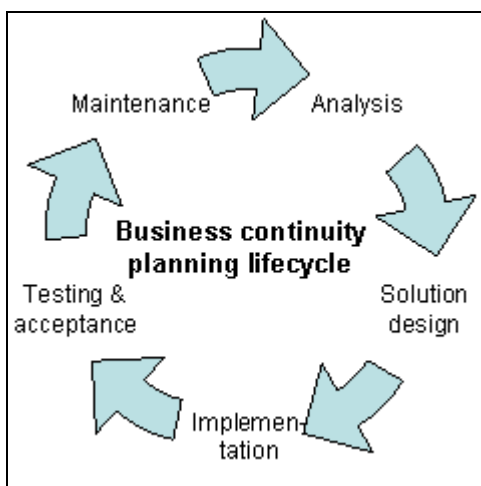


- **BUSINESS CONTINUITY: PLAN, PROGRAM, AND MANAGEMENT**

- Business continuity is the activity performed by an organization to ensure that critical business functions will be available to customers, suppliers, regulators, and other entities that must have access to those functions. (http://en.wikipedia.org/wiki/Business_continuity)
 - ⇒ These activities include many daily chores such as project management, system backups, change control, and help desk.
 - ⇒ Business Continuity refers to those activities performed daily to maintain service, consistency, and recoverability.
- [Business Continuity and Disaster Recover Planning](#)
 - ⇒ Definition: Business continuity planning (BCP) is a methodology used to create and validate a plan for maintaining continuous business operations before, during, and after disasters and disruptive events.
 - ⇒ Origin: In the late 1990s, BCP came to the forefront as businesses tried to assess the likelihood of business systems failure on or after January 1, 2000 (the “Y2K” issue).
 - ⇒ Disaster recovery is part of business continuity, and deals with the immediate impact of an event.
- BCP: Business Continuity Plan/Program; BCM: Business Continuity Management
- Business Continuity Planning Related Standards
 - ⇒ [NFPA \(National Fire Protection Association\) 1600 Standard on Disaster/Emergency Management and Business Continuity Programs](#)
 - ⇒ DRII (DRI International, Inc.) and CSA (Canadian Standards Association) Z1600
 - ⇒ ISO/IEC 27031:2011 Information technology -- Security techniques -- Guidelines for information and communications technology readiness for business continuity
 - ⇒ ISO 22301:2012 Societal security -- Business continuity management systems -- Requirements

- **BUSINESS CONTINUITY MANAGEMENT ([組織風險與營運持續管理](#))**

- BCP Lifecycle and Framework for BCM



- Business Continuity Planning
 - ⇒ Strategies: Prevention; Response; Resumption; Recovery, and Restoration
 - ⇒ Contents: Objective, Scope, Assumptions and Limitations, Teams, and Goals
- [BCM-企業持續營運管理](#) (研考會首頁/績效考核/風險管理與危機處理/教育訓練教材)
- [行政機關營運持續管理評估查核表](#)