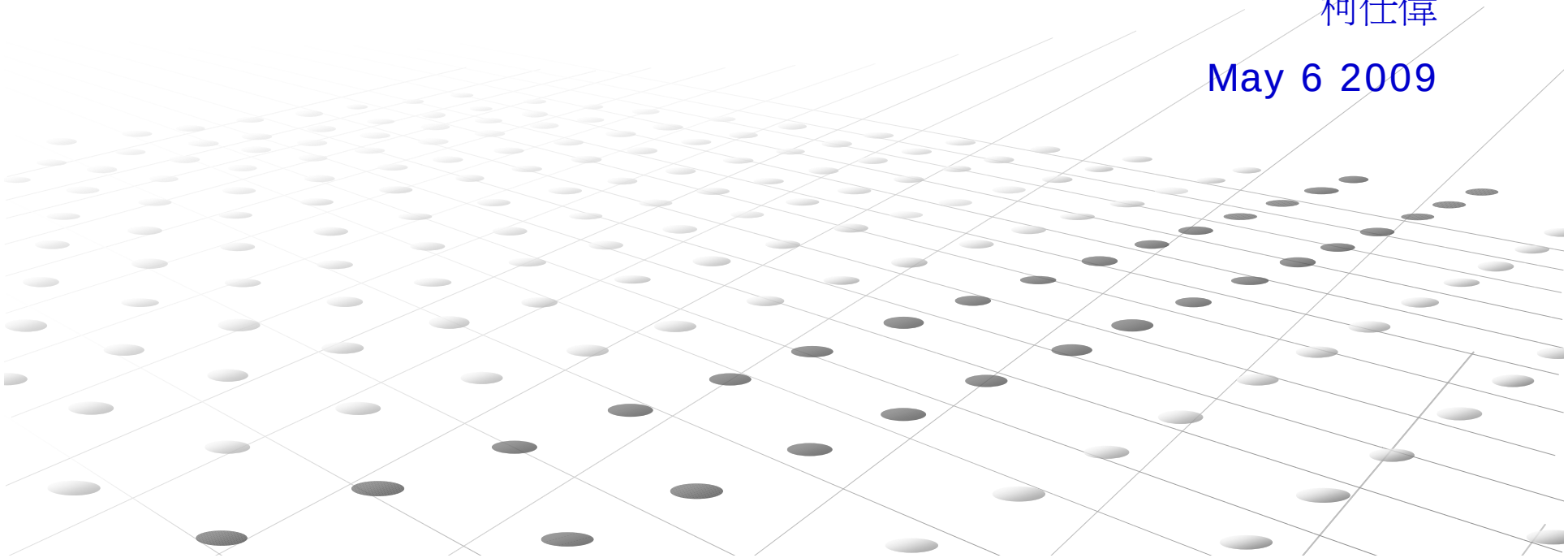
外匯交易簡介及
衍生性金融商品設計與創新

花旗銀行 金融交易處

柯仕偉

May 6 2009



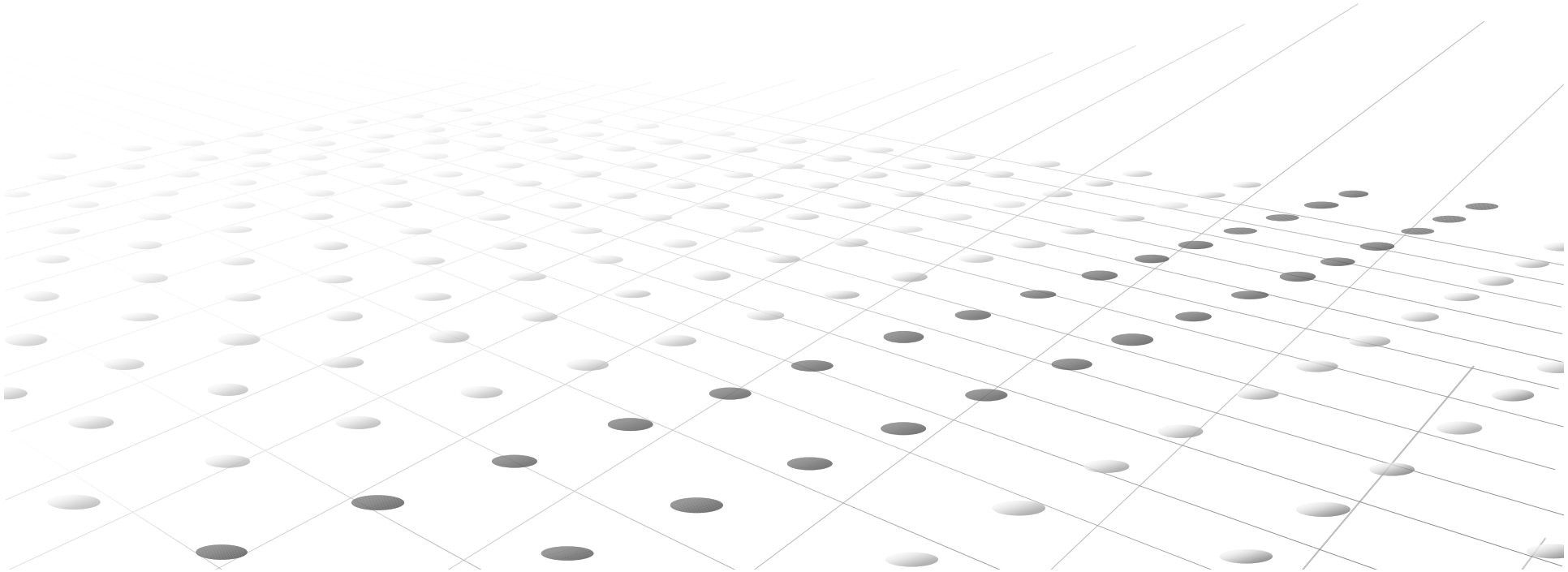
課程概要

- 前言概述
- 傳統金融市場暨外匯交易簡介
- 衍生性暨新種金融商品發展
- 衍生性暨新種金融商品行銷準則
- 衍生性金融商品的設計與創新
- Q & A

課程期待

- 如何得知客戶對商品的需求 ？
- 從這次金融海嘯得到的學習與教訓 ？
- 台灣有哪些法規限制 ？
- 交易員的生涯規劃 ？
- 衍生性金融商品的交易現況 ？
- 在校時應如何準備投入外匯交易工作 ？

I. 前言概述

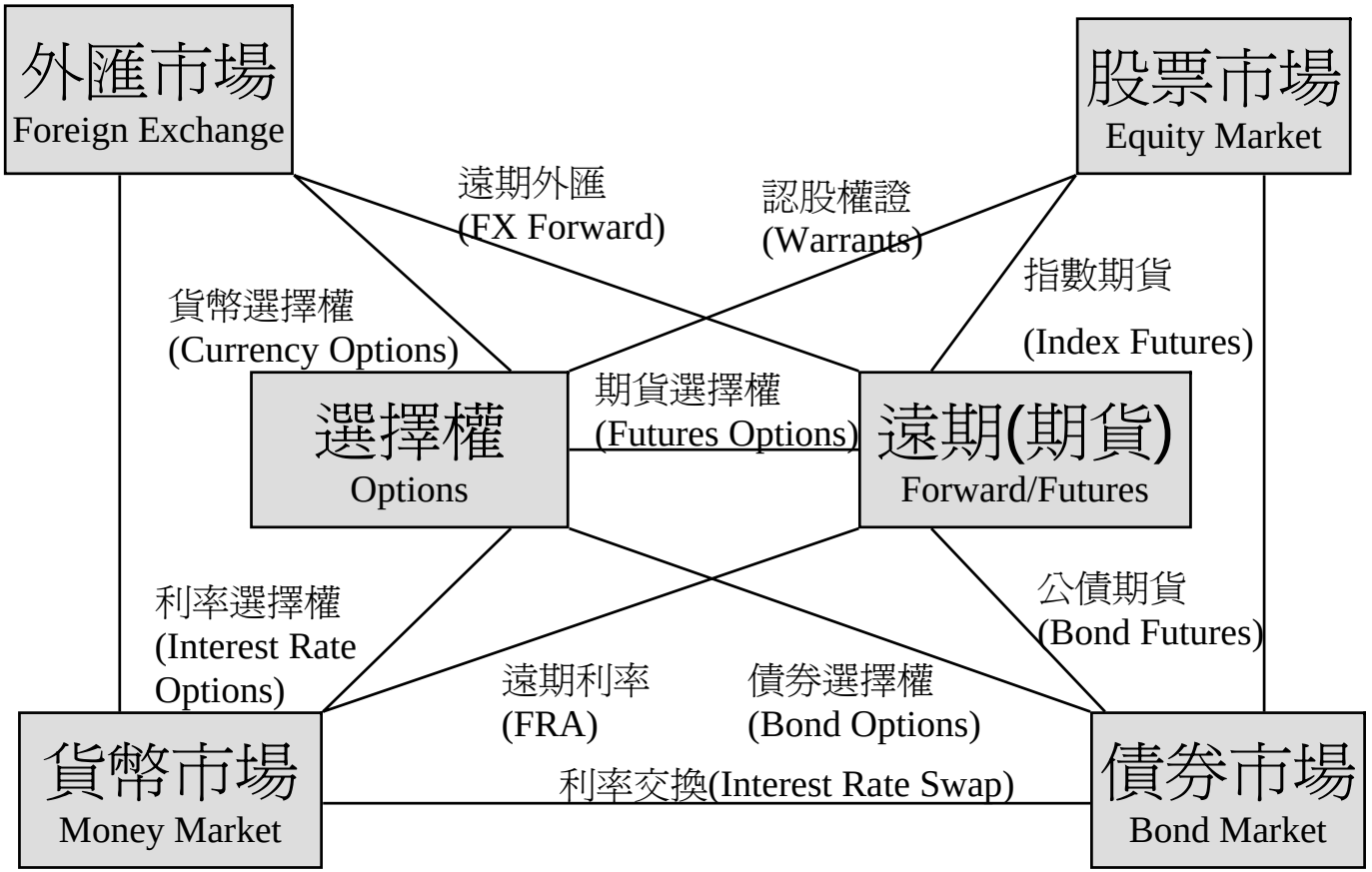


1.1 衍生性金融商品暨市場建構基石

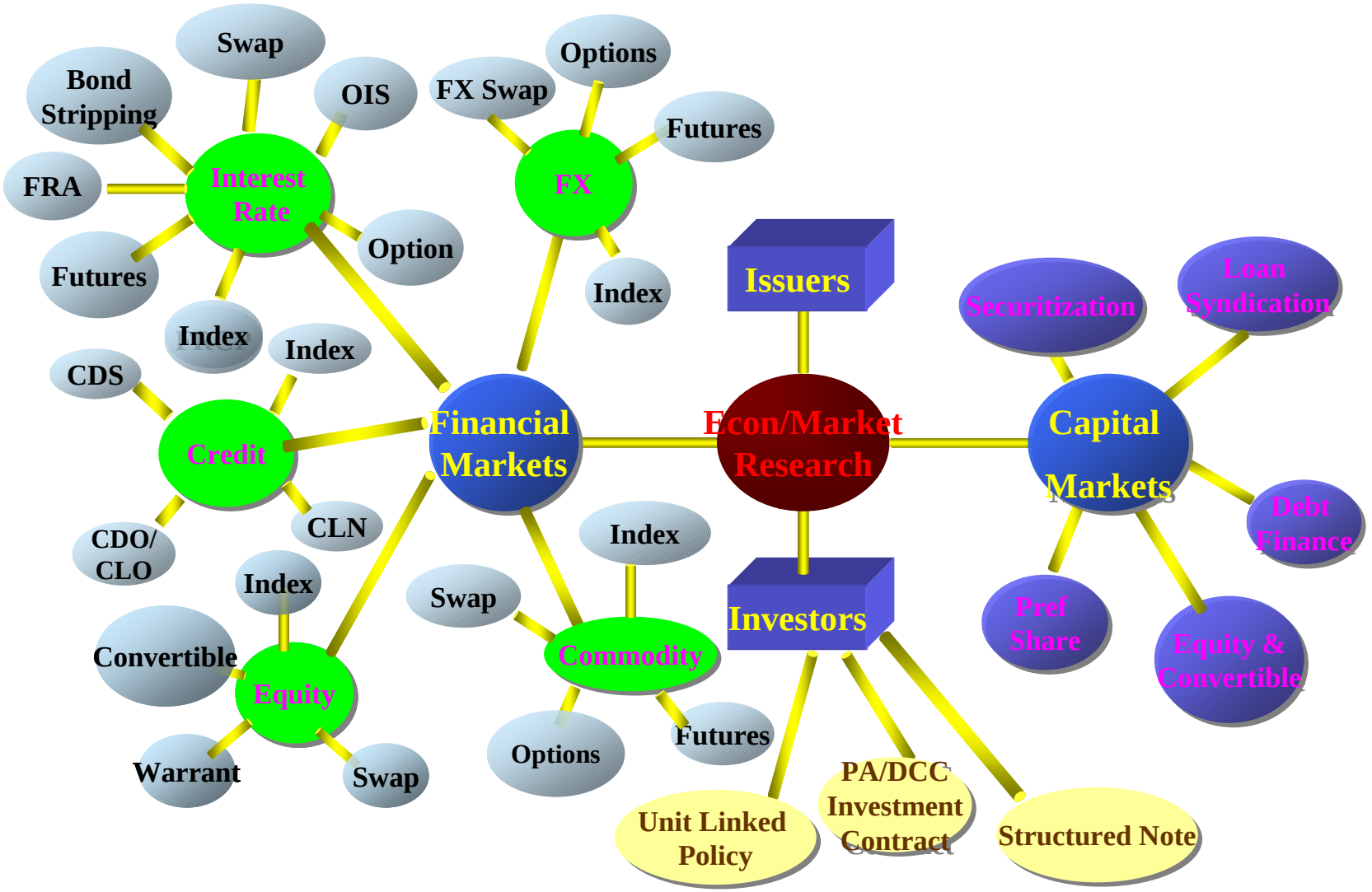
- 現貨 (Spot)： Underlying cash asset class
- 遠期 (Forward)： Opportunity cost
- 選擇權 (Option)： Value from volatility

1.2 金融市場暨基礎工具

OTC and *Exchange Traded* Derivatives



1.3 新種金融商品發展及運用



1.4 衍生性暨新金融商品發展趨勢

For market booming to real collapsing

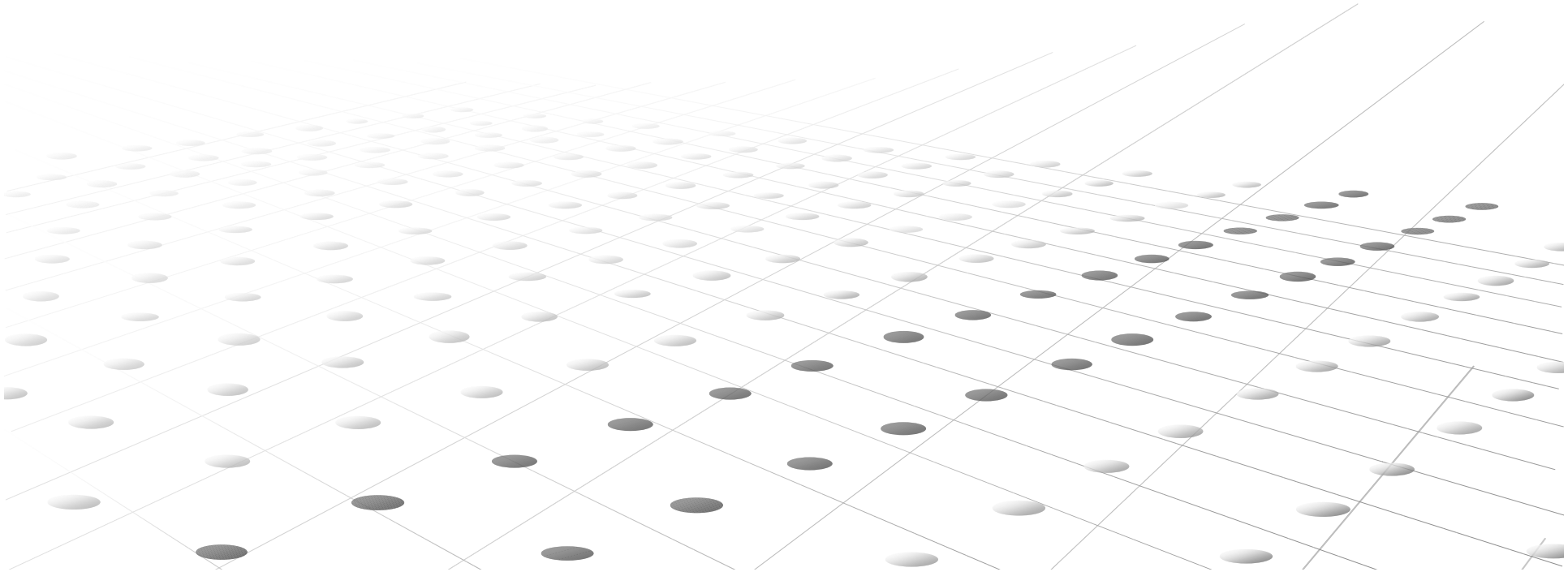
- Complexity & Uncertainty
- Quanto and Hybrid Product
- Securitized and Credit Tranching Product
- Hedge Fund / Alpha Trading
- Risk Management

1.5 後金融海嘯的衍生性暨新金融商品發展趨勢

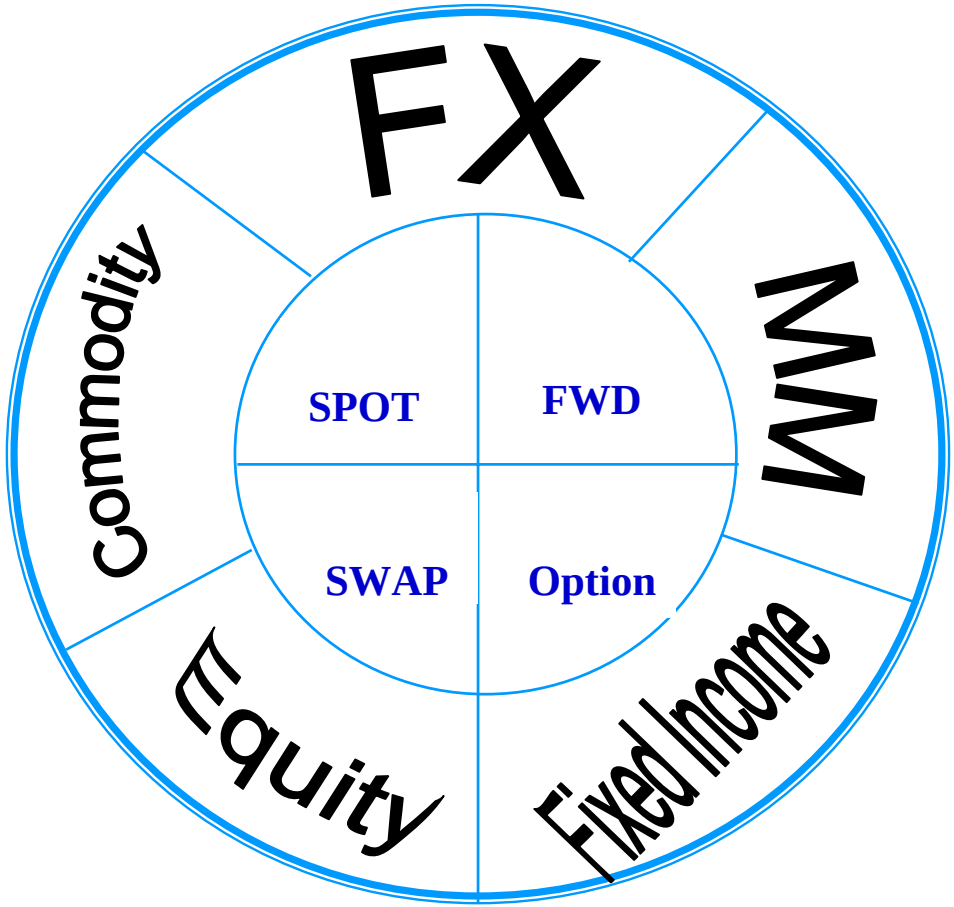
What will be future demand ?

- Risk, Risk, and Risk Management to all parties
- Visibility and Credibility
- Next Prevailing Market Fashions?

II. 傳統金融市場暨外匯交易簡介



2.1 傳統金融市場



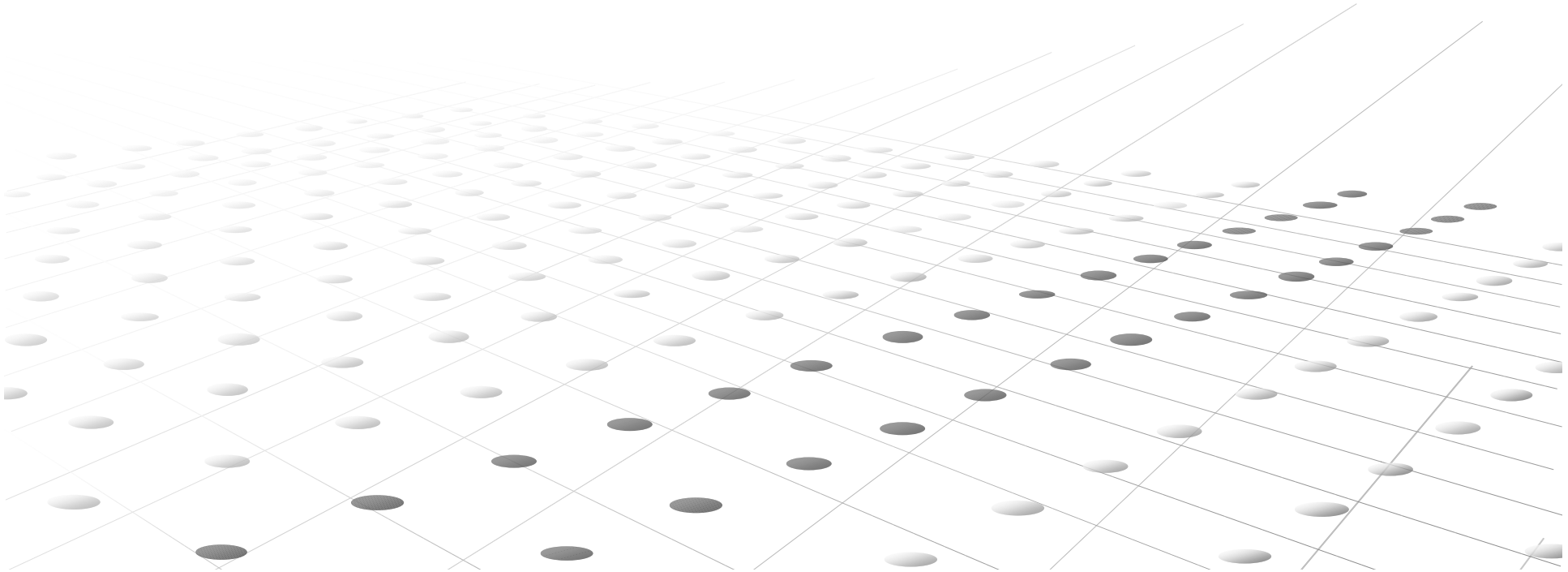
2.2 外匯市場簡介

- FX Spot 即期外匯
- FX Forwards 遠期外匯 / FX Swap 換匯
- FX Options 外匯選擇權
- 外匯避險

2.3 國際匯市機制發展沿革

- Gold Standard (1880 - 1936)
- Bretton Woods Conference (1944 -1971)
- Floating rate system (1973 ~)
- EMS (European monetary system) & Launch of "EURO" (1999)
- Discussing a single Asia Currency (亞元) ?
- **China's proposing replacement currency to replace USD (or parallel used) as reserve currency**

FX Spot 即期外匯



2.4 全球主要外匯交易中心

- Tokyo/Singapore

- London

- New York

24 hour trading

Liquidity

2.5 外匯市場參與者

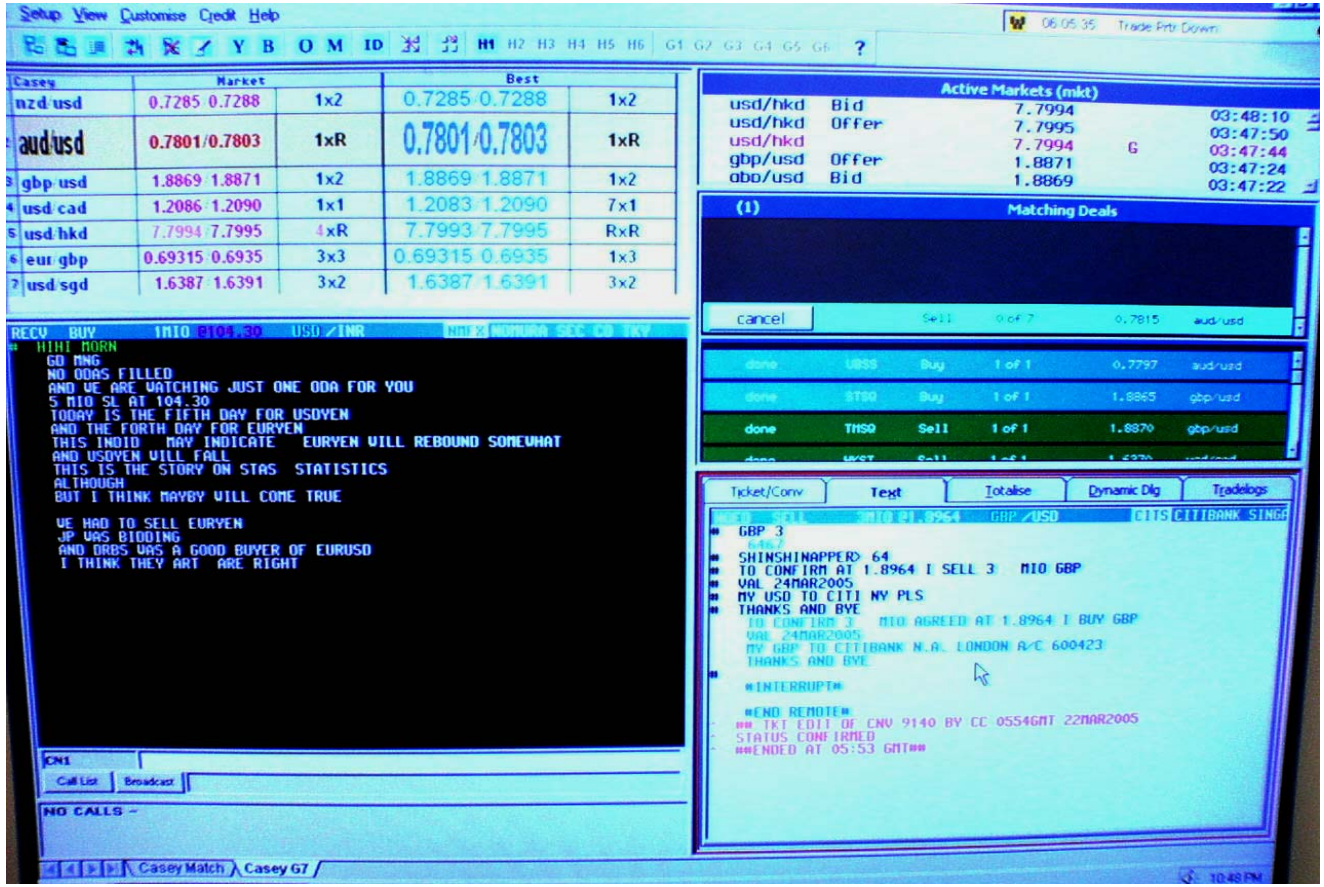
- Regulated FI: Banks, Securities Trading House
- Non(or Less) Regulated Institution: Hedge Funds
- Corporate Hedgers: Importers, Exporters
- Currency Investors: Individual, Corporate, Funds
- Individual: Investment, Travel
- Central banks

2.6 FX Transacting Platform

- Telex
- Telephone
- Broker
- **Reuters Dealing**
- **Electronic broker: EBS / Reuters D22**
- **e-FX Platform (Citibank, UBS, DB.., etc)**

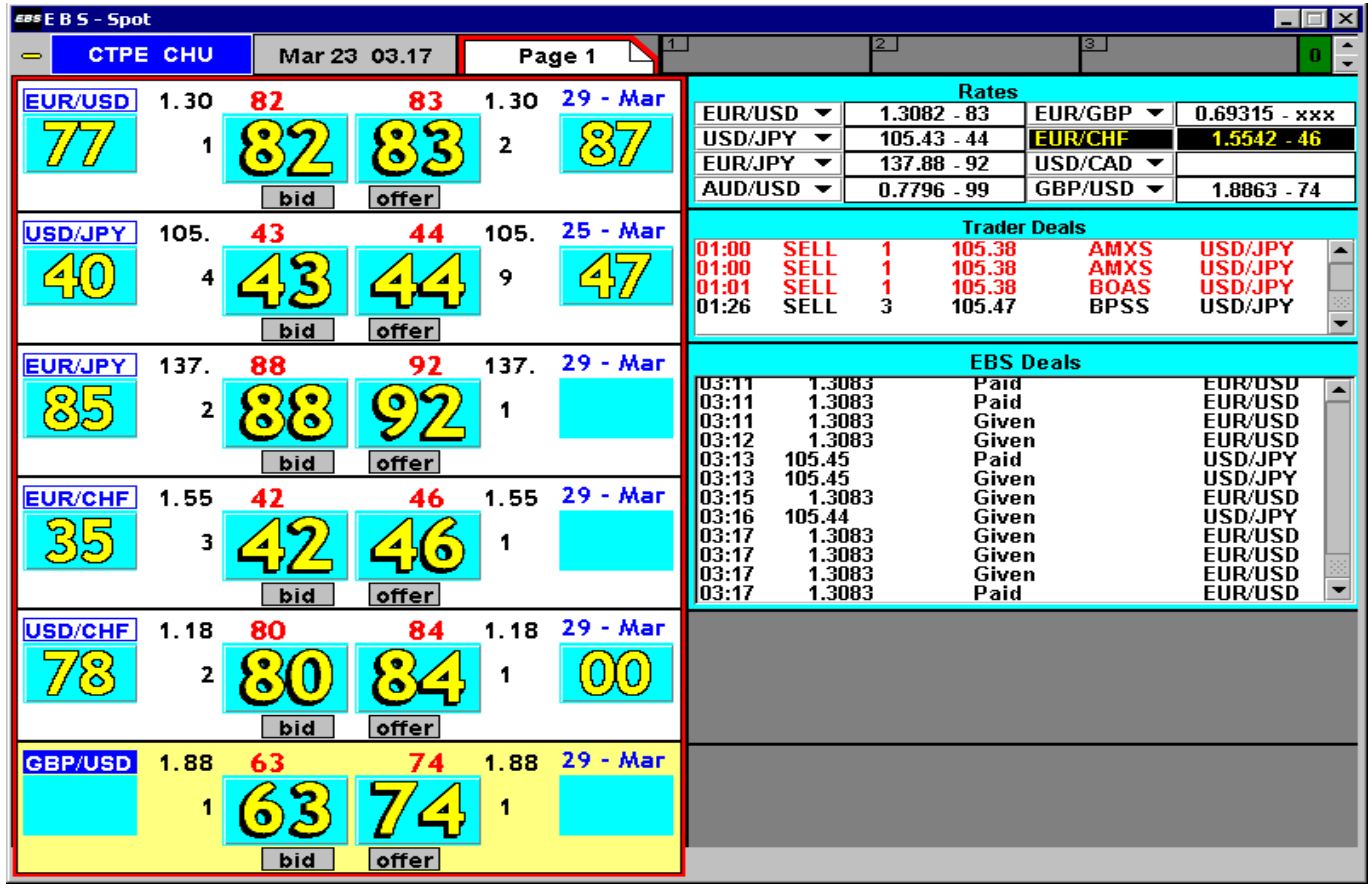
2.6 FX Transacting Platform (續)

Reuters Dealing Platform



2.6 FX Transacting Platform (續)

EBS



2.7 即期外匯報價習慣 ~ Price Quotation

Commodity Currency	**1 unit or fixed amount of the foreign currency**
Terms Currency	**Variable amounts of the local currency**

Example:

In Tokyo, 1US$ = YEN 99.88

In Switzerland, 1US$ = CHF 1.1588

In Taipei, 1US$= TWD 33.888

In China, 1US$= CNY 6.8388

In Hong Kong 1US$= HKD 7.7588

* Commonly used where US$ is the commodity currency.

2.7 即期外匯報價習慣 ~ Volume Quotation

Commodity Currency	**1 unit or fixed amount of the local currency**
Terms Currency	**Variable amounts of the foreign currency**

Example:

In EU, 1€ =US$ 1.2988

In London, 1£ = US$ 1.4688

In Sydney, 1A$ = US$ 0.6888

* Commonly applicable where US$ is the term currency, e.g. EURO (€), Sterling (£), and Commonwealth currencies such as Australian Dollars (AUD) and New Zealand Dollars (NZD) etc.

2.8 Reuters quotes

1839	CCY	BANK	SPOT	BANK	PREV1	HIGH	LOW ASAP
1839	EUR	WBCA	1.1424/29	CICI	25/28	1.1467	1.1397
1839	JPY	LEUI	111.65/68	BGFX	64/70	111.75	111.08
1839	GBP	MSFX	1.6488/93	DRE1	82/92	1.6601	1.6453
1839	CHF	WBCA	1.3480/85	LEUI	82/87	1.3518	1.3420
1839	AUD	WBCA	0.6685/90	MMWB	85/90	0.6760	0.6684
----------			30YR <RTRTSY1> 105*28-31				----------
1839	NZD	WBCA	0.5869/79	I	1839	XAU	UBSI 379.90/380.60
1839	HKD	RAB1	7.7496/06	I	1830	XAG	JAUK 5.10/ 5.12
1838	SGD	MAYS	1.7302/12	I	1838	CAD	RBSL 1.3613/16
1646	MYR	SCKL	3.7995/05	I	1832	IDR	SCBI 8412/8422
1830	THB	HKRS	40.070/100	I	1839	INR	CLBO 45.855/865

- Contributed by banks / securities trading house
- May not as a firm dealing price but good market level
- Quote might not able to reflect a fast market move. I.e.,Central bank intervention

2.9 Cross Rate

A CROSS RATE is a foreign exchange rate between two currencies derived via a third currency, e.g. YEN/NTD rate via US$

RATE SCENARIO

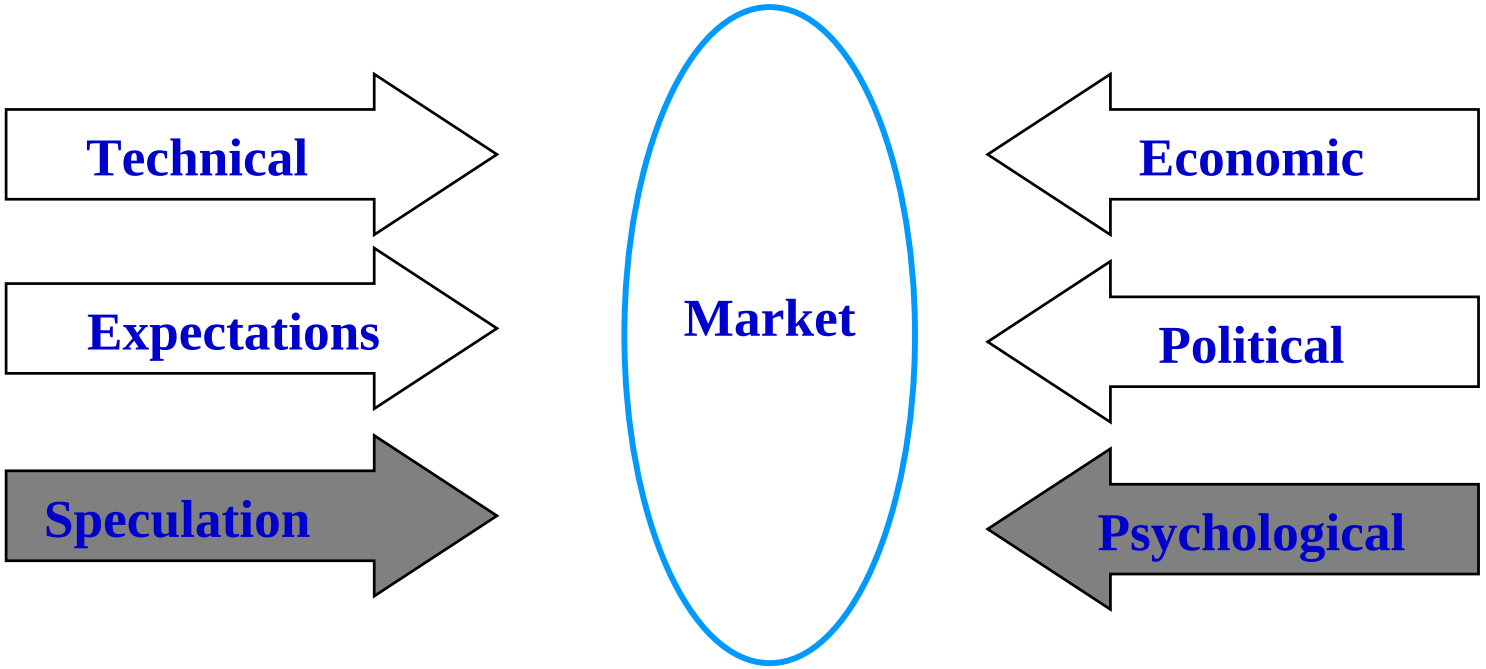
US$1 = ¥ 99.88
US$1 = NTD 33.888

What is the YEN/NTD rate? (YEN in NTD terms)

¥ 99.88 = US$1 = NTD 33.888

1 ¥ / NTD = 33.888 /99.88 = 0.3393

2.10 影響外匯市場因子



2.10 影響外匯市場因子 (續)

Short term factor

1. Commercial demand/supply for physical trade transactions
2. Investment capital flows
   - Interest rate differentials
   - Equity investment etc.
3. Speculative positions
4. Political & Economic factors
5. Announcement of economic data
6. Central bank intervention
7. Seasonal factors
   - Financial year-end
   - Market holidays
8. Technical analysis related factors
9. Rumors

2.10 影響外匯市場因子 (續)

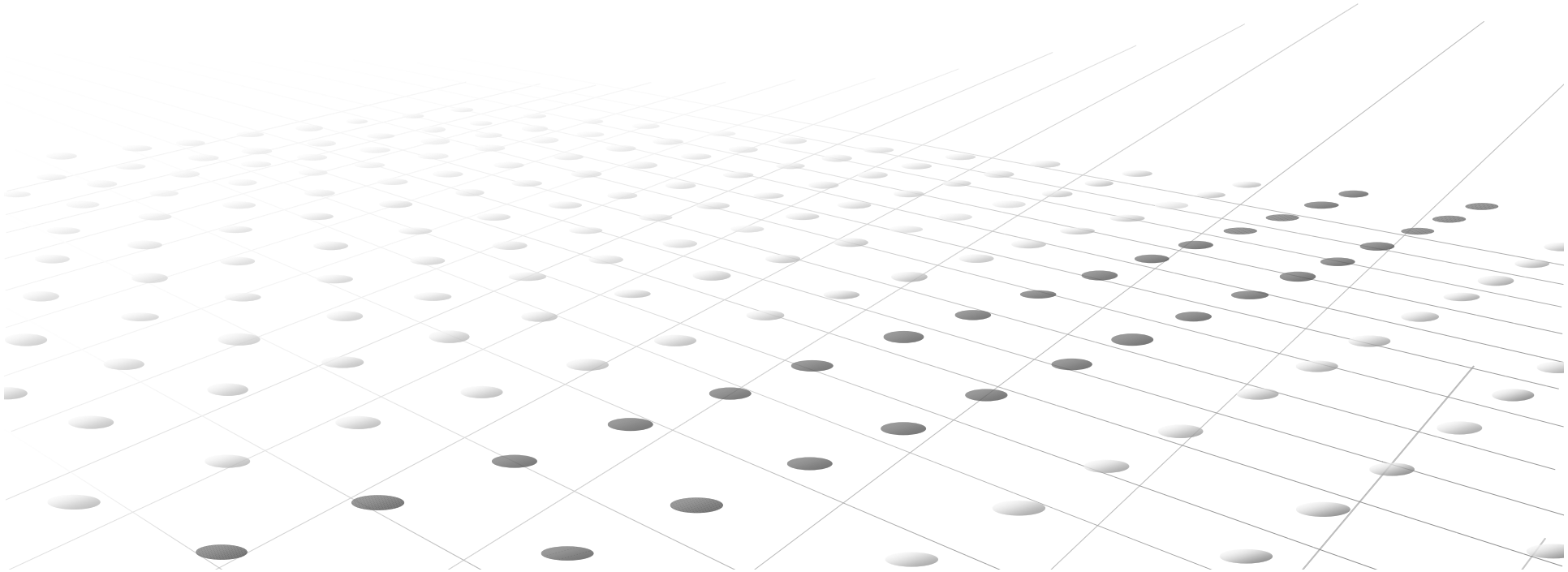
Medium / Longer Term Factor

1. Structure of economy
2. Government policy
3. Political/Security factors
4. Theories on FX rate determination
   - Purchasing Power Parity (PPP) approach
5. Balance of Payments (BOP) approach

2.11 FX Trading Tip

1. Trend is your friend.
2. Buy on rumor, sell on fact.
3. The market may not be smart, but it is always right.
4. Cut loss fast, let your profit run.
5. When you have nothing but hope. You are losing.
6. Never mark up your losing position.
7. Don't try to pick market tops or bottoms; pick point in direction of market trend.
8. Close out of position if you don't know what's happening or don't feel comfortable.
9. Don't try to get even on one trade, market will still be there tomorrow.
10. Opportunities exist; without patience they are missed.
11. It is never a sin to take profits.
12. If you have a position, forget your emotion.

FX swaps 換匯
FX Forwards 遠期外匯



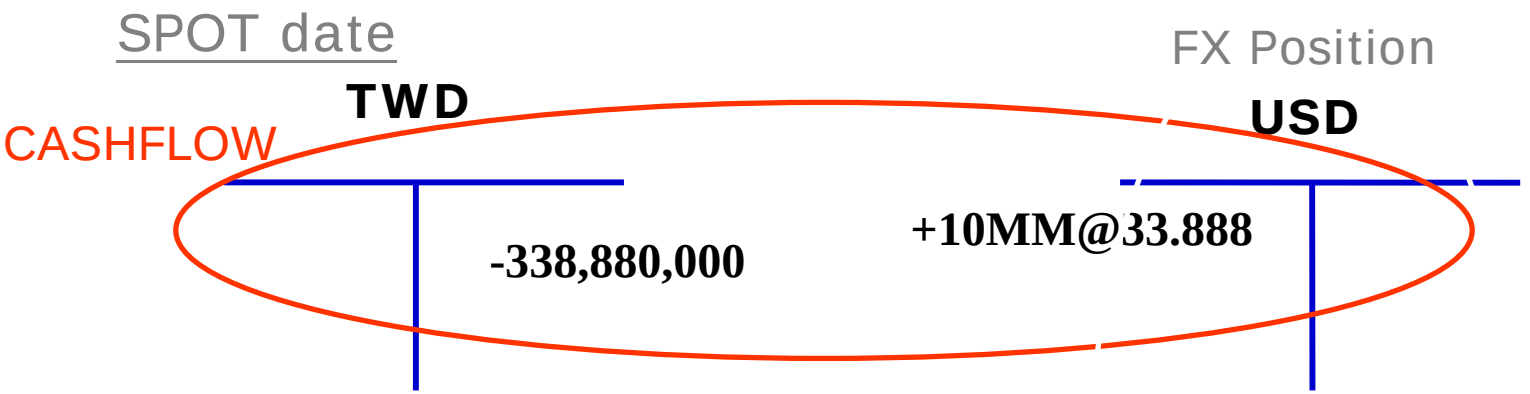
2.12 FX Swap 換匯 – 跨幣 Cross Currency Funding 理論基礎

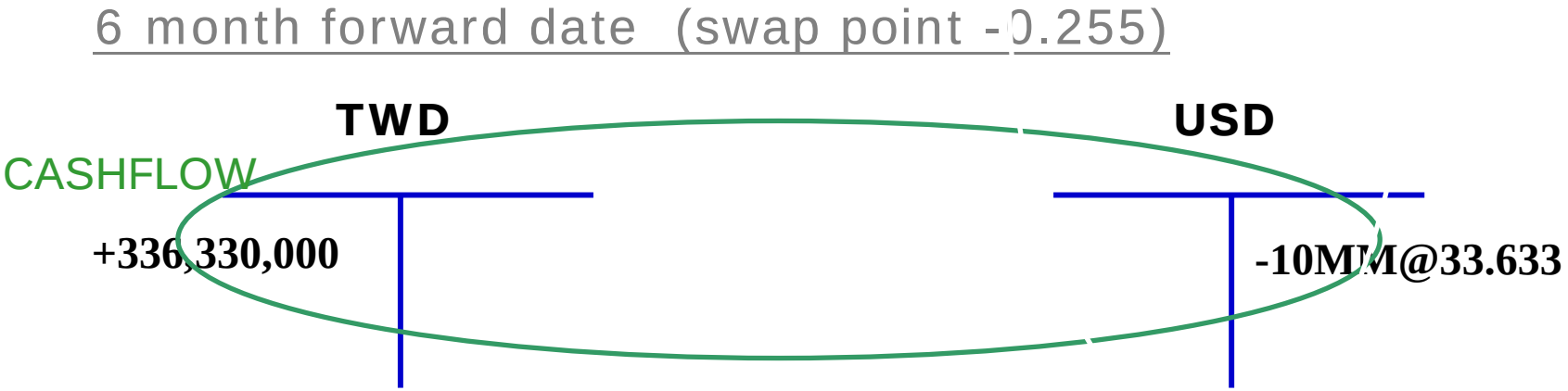
- Generate Liquidity by Cross Currency Funding

- *A local bank has access to local currency, but has restricted sources for acquiring funds in the international market. He enter a swap transaction I.e., Sell/Buy local currency to provide liquidity in the foreign currency.*

- *Foreign branches of global banks usually have many sources of funds in the international capital markets, but don't have enough access to funds in restricted markets. These banks enter a swap transaction I.e., Sell/Buy international currency to provide liquidity in the restricted currency.*

2.13 FX swaps – Cashflow & FX Position





2.14 FX swaps points – Quotation

Premium Swap Point

Spot US$/CNY	6.8316/6.8317
6-month Swap Rate	+ 0.0065/ +0.011
6-month outright forward	6.8381/6.8427

Discount Swap Point

Spot US$/TWD	33.851/33.860
6-month Swap Point	-0.255/-0.230
6-month outright forward	33.596/33.630

2.14 FX swaps – Cashflow & FX Position

DERIVATION OF FORWARD RATE FORMULA

By definition $f = \frac{FV_T}{FV_C}$ where f = forward rate
s = spot rate
T => terms currency
C => commodity currency

Similarly, By definition $s = \frac{PV_T}{PV_C}$

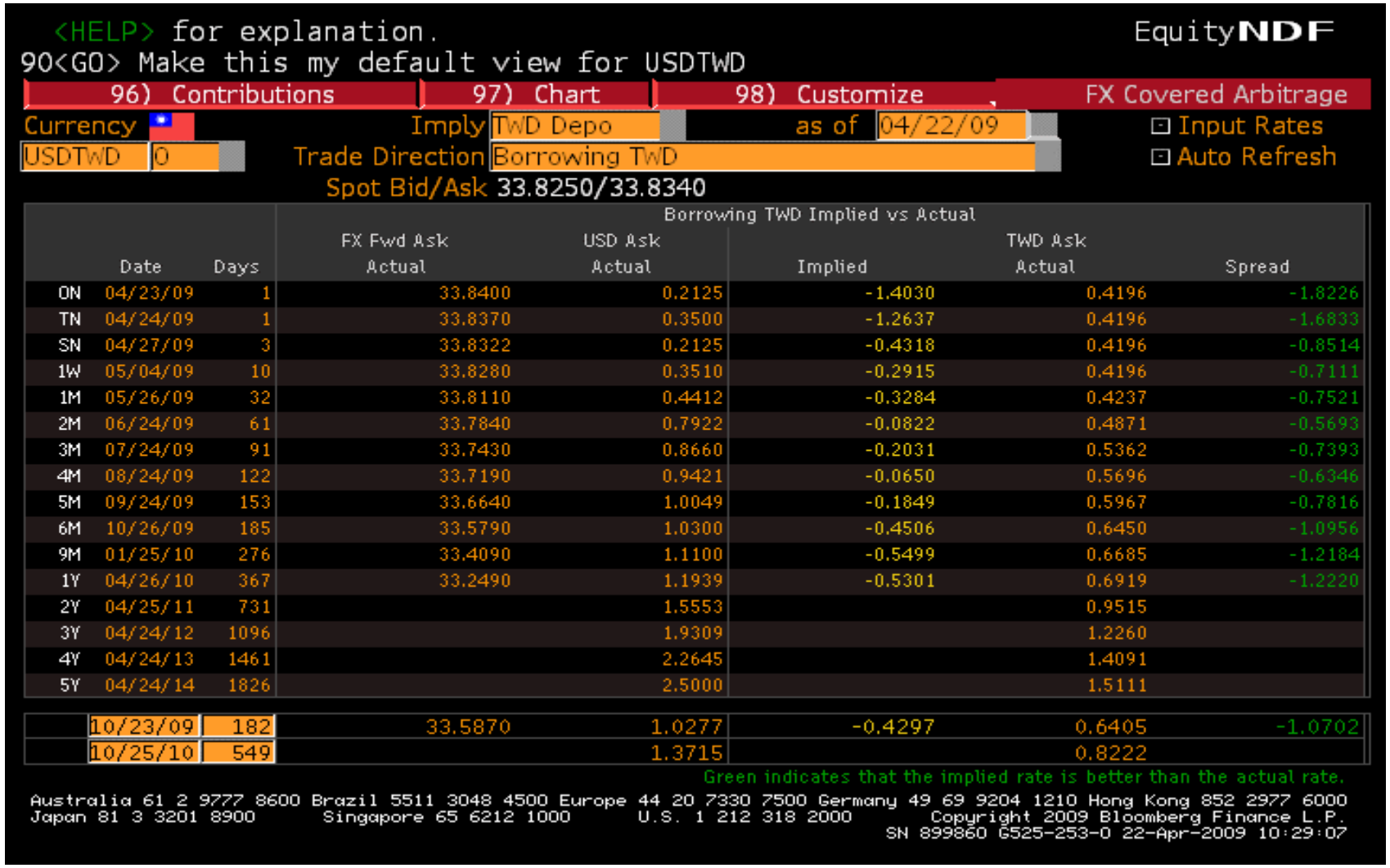
WE KNOW FOR SIMPLE INTEREST CALCULATIONS (LESS THAN 1 YEAR)

$$FV = PV\,(1 + rt) \quad \text{Where } t = (\text{no. of days}/365)$$

Substituting $f = \frac{FV_T}{FV_C} = \frac{PV_T(1+r_T t)}{PV_C(1+r_C t)}$

$$= s\ \frac{(1+r_T t)}{(1+r_C t)}$$

2.15 Interest Rate Differential –USD / TWD



<HELP> for explanation. EquityNDF

90<GO> Make this my default view for USDTWD

96) Contributions | 97) Chart | 98) Customize | FX Covered Arbitrage

Currency: USDTWD 0 | Imply: TWD Depo | as of: 04/22/09 | Input Rates | Auto Refresh

Trade Direction: Borrowing TWD

Spot Bid/Ask 33.8250/33.8340

Borrowing TWD Implied vs Actual

	Date	Days	FX Fwd Ask Actual	USD Ask Actual	TWD Ask Implied	TWD Ask Actual	Spread
ON	04/23/09	1	33.8400	0.2125	-1.4030	0.4196	-1.8226
TN	04/24/09	1	33.8370	0.3500	-1.2637	0.4196	-1.6833
SN	04/27/09	3	33.8322	0.2125	-0.4318	0.4196	-0.8514
1W	05/04/09	10	33.8280	0.3510	-0.2915	0.4196	-0.7111
1M	05/26/09	32	33.8110	0.4412	-0.3284	0.4237	-0.7521
2M	06/24/09	61	33.7840	0.7922	-0.0822	0.4871	-0.5693
3M	07/24/09	91	33.7430	0.8660	-0.2031	0.5362	-0.7393
4M	08/24/09	122	33.7190	0.9421	-0.0650	0.5696	-0.6346
5M	09/24/09	153	33.6640	1.0049	-0.1849	0.5967	-0.7816
6M	10/26/09	185	33.5790	1.0300	-0.4506	0.6450	-1.0956
9M	01/25/10	276	33.4090	1.1100	-0.5499	0.6685	-1.2184
1Y	04/26/10	367	33.2490	1.1939	-0.5301	0.6919	-1.2220
2Y	04/25/11	731		1.5553		0.9515	
3Y	04/24/12	1096		1.9309		1.2260	
4Y	04/24/13	1461		2.2645		1.4091	
5Y	04/24/14	1826		2.5000		1.5111	
	10/23/09	182	33.5870	1.0277	-0.4297	0.6405	-1.0702
	10/25/10	549		1.3715		0.8222	

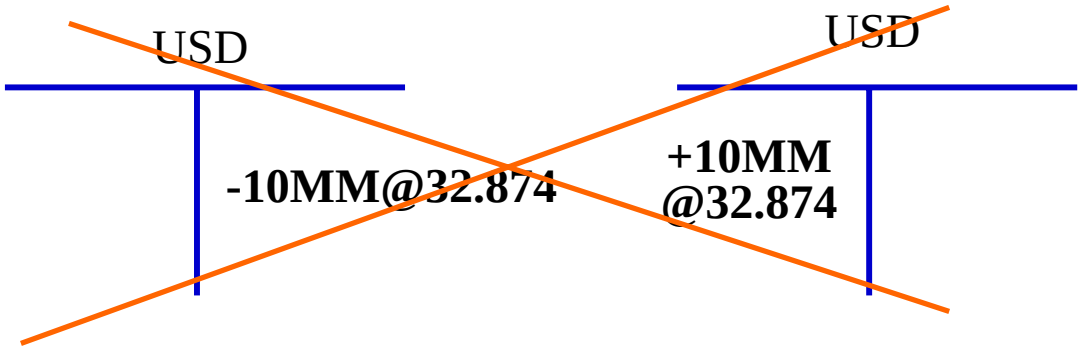
Green indicates that the implied rate is better than the actual rate.

Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2009 Bloomberg Finance L.P.
SN 899860 G525-253-0 22-Apr-2009 10:29:07

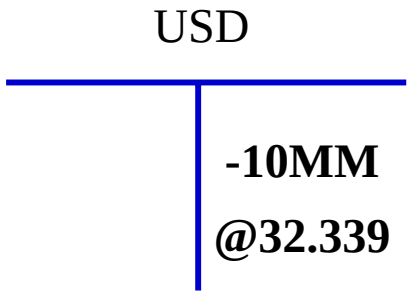
2.16 FX swaps & FX Forward

- A FX Forward is simply a Spot plus an FX Swap

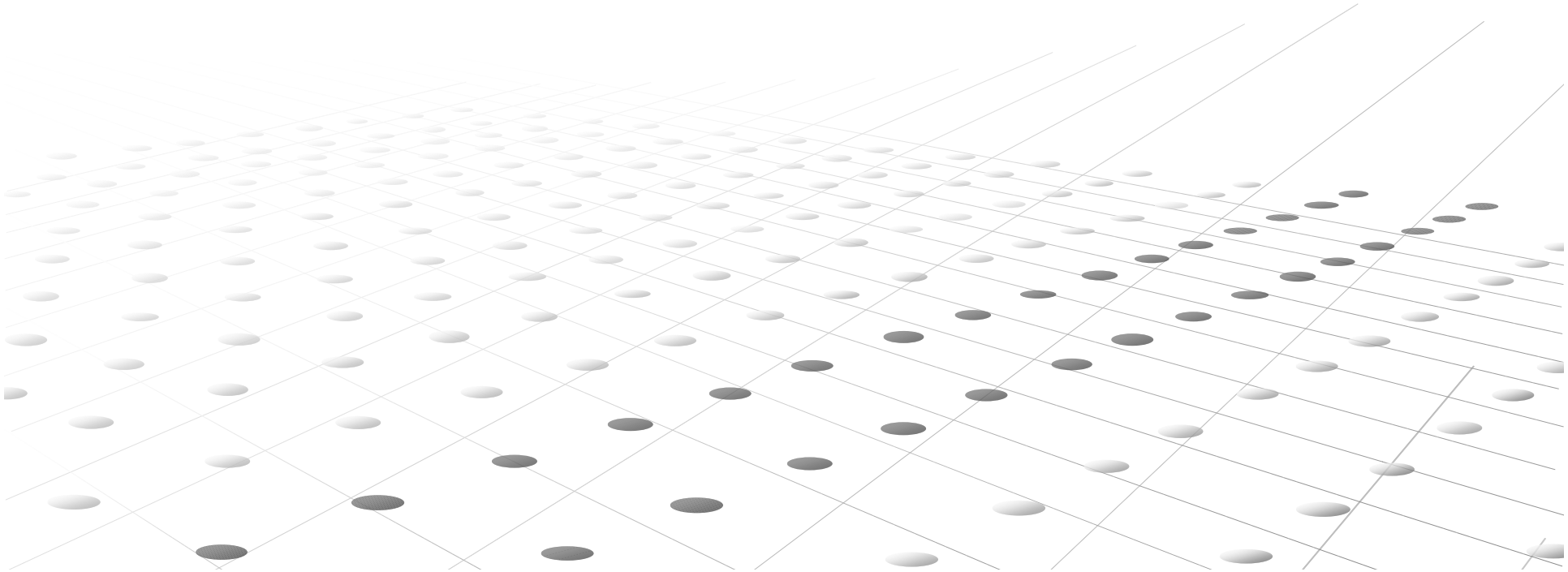
SPOT date



6 month forward date



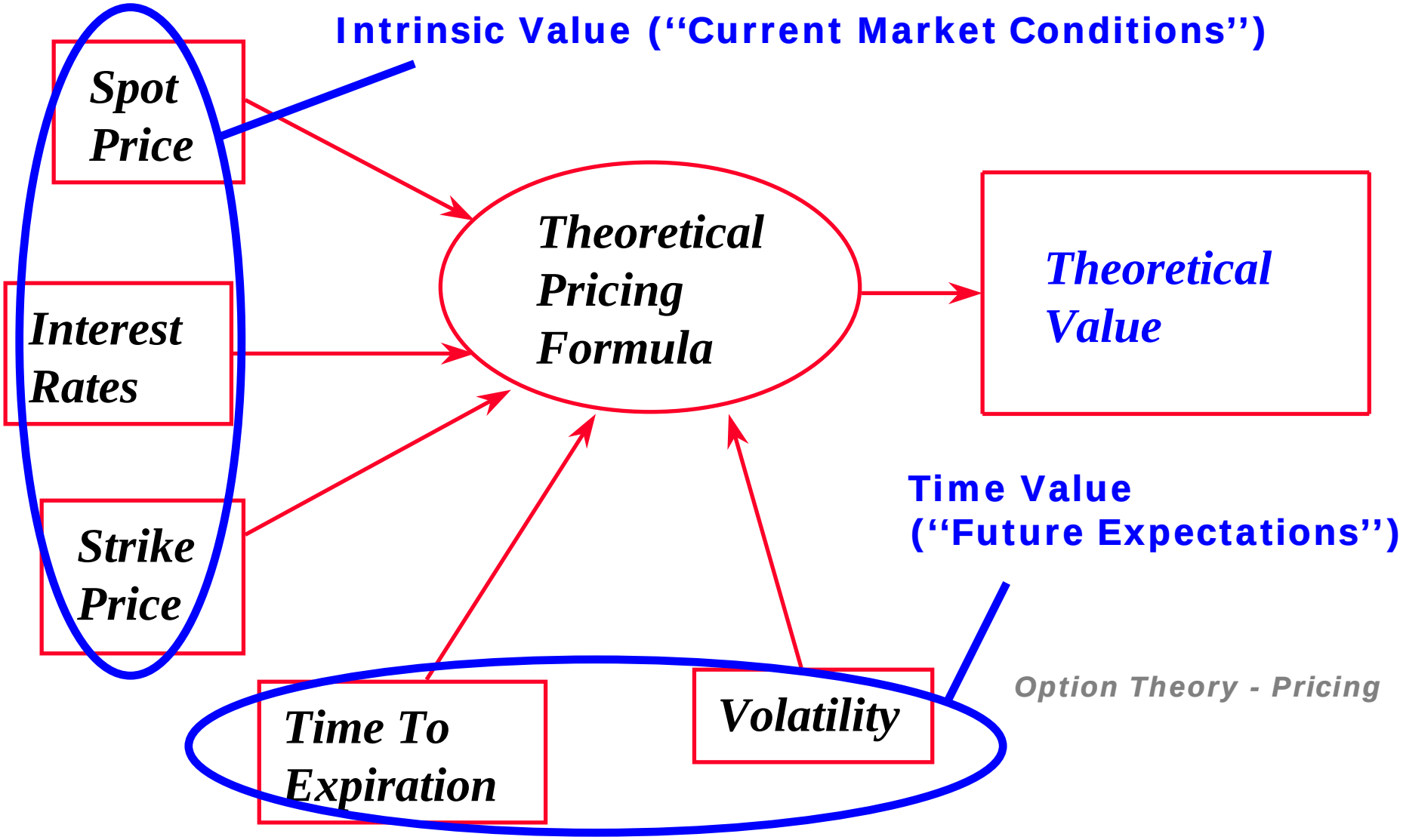
FX Options 外匯選擇權



2.17 Black-Scholes Equation (1973)

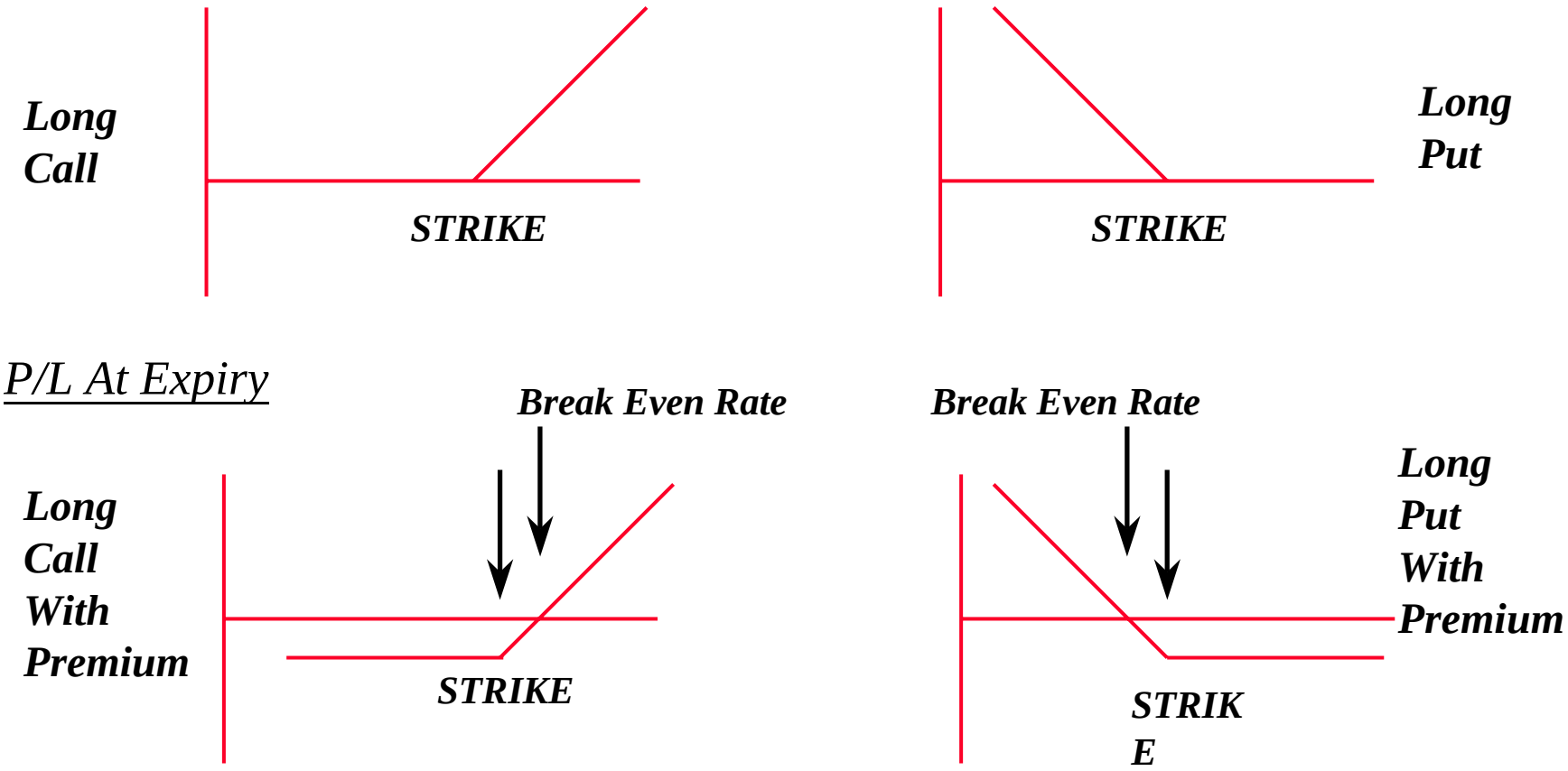
- Simple To Use - Only One Parameter To Estimate
- Led Directly To Explosive Growth In Options Trading
- Still The Market Standard For FX Option Pricing

2.18 Option Pricing – Pricing Component

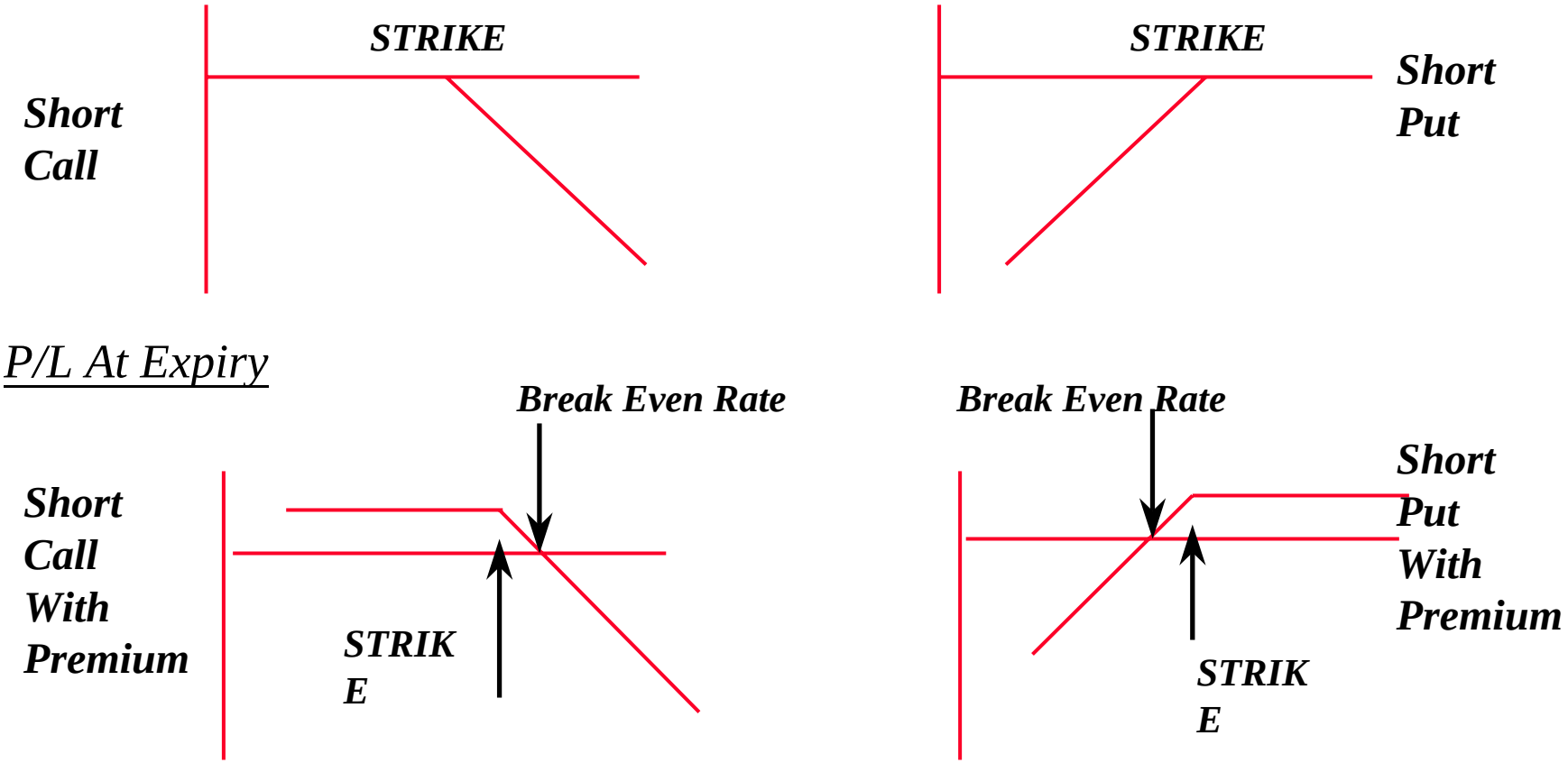


Option Theory - Pricing

2.19 The Four Elementary Strategies



2.20 The Four Elementary Strategies (Conti)

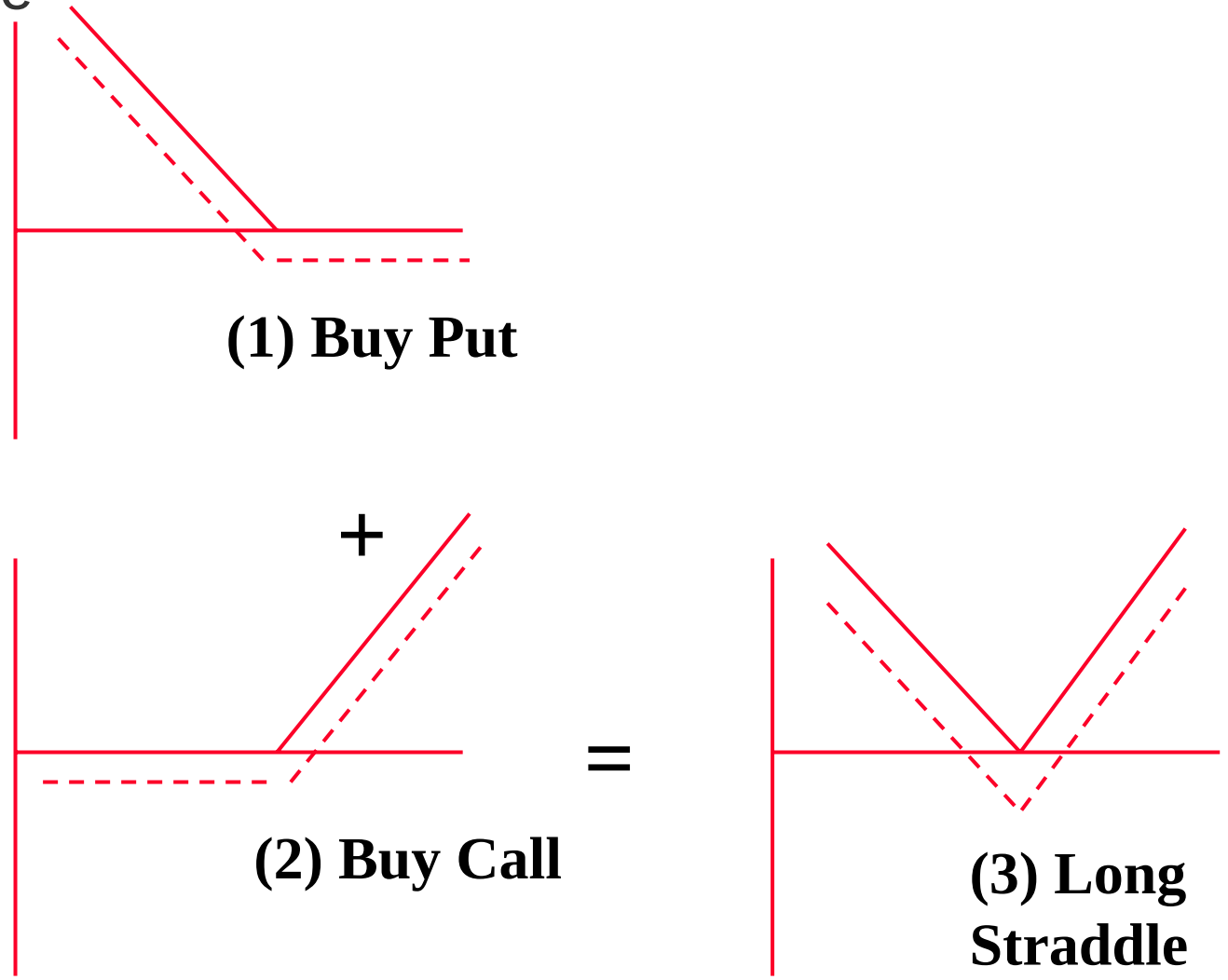


2.21 Common Options Strategies

- Straddle
- Strangle
- Call spread
- Put spread
- Target forward
- Range forward

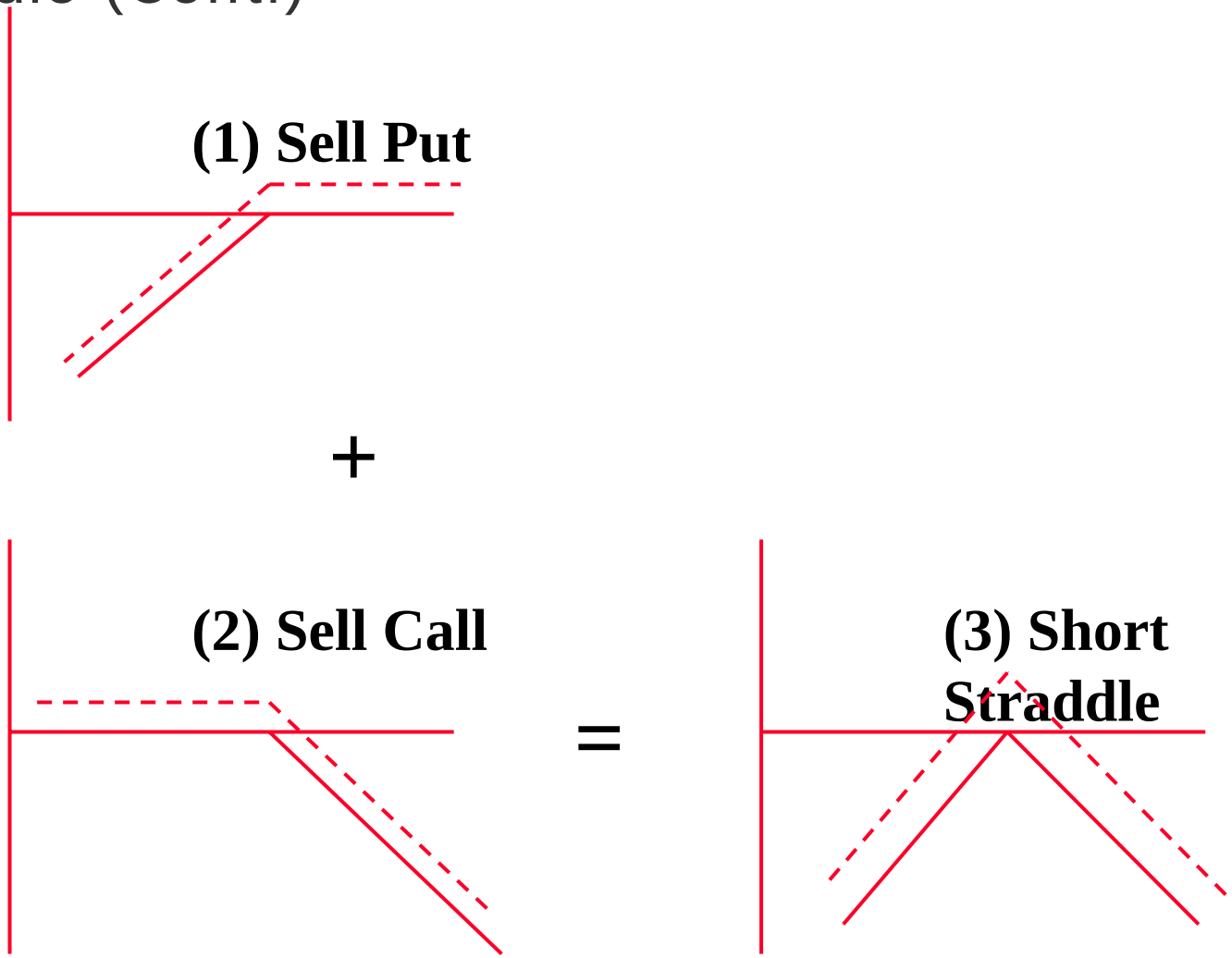
2.21 Common Options Strategies (Conti)

Straddle



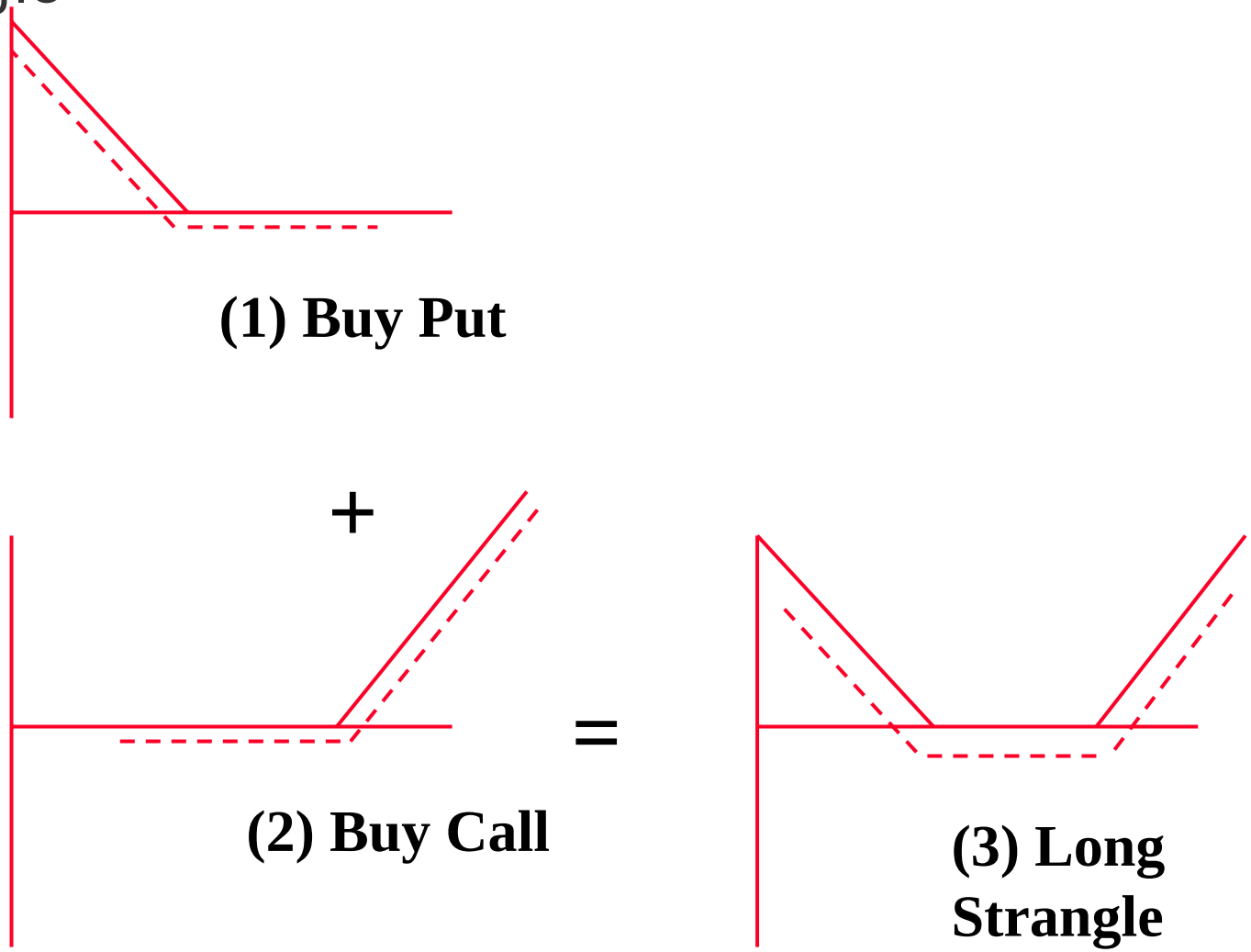
2.21 Common Options Strategies (Conti)

Straddle (Conti)



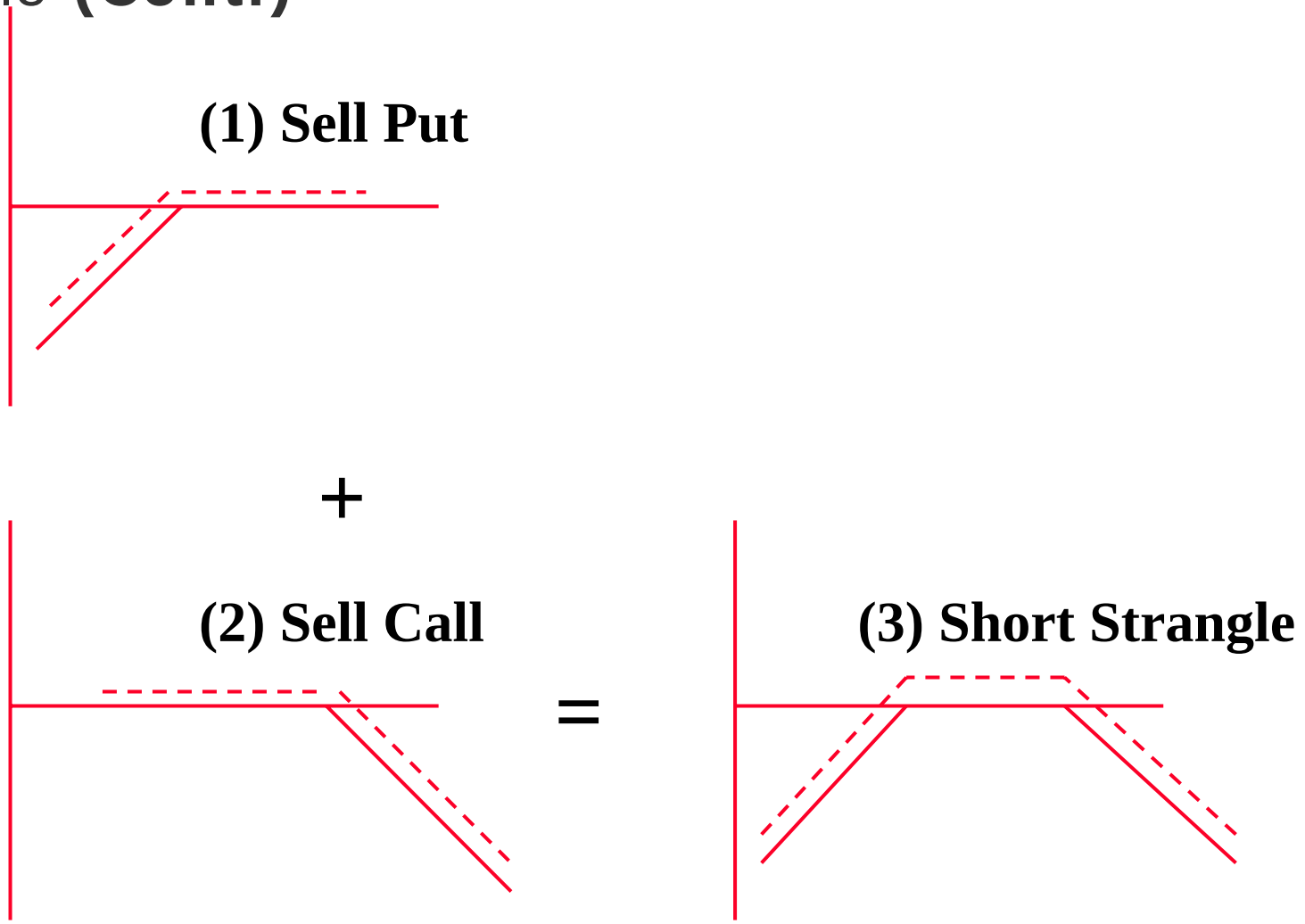
2.21 Common Options Strategies (Conti)

Strangle



2.21 Common Options Strategies (Conti)

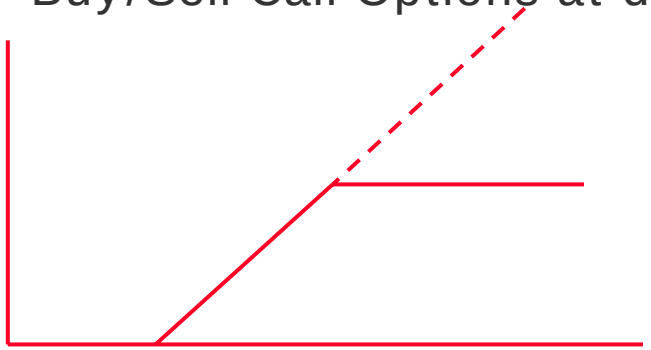
Strangle **(Conti)**



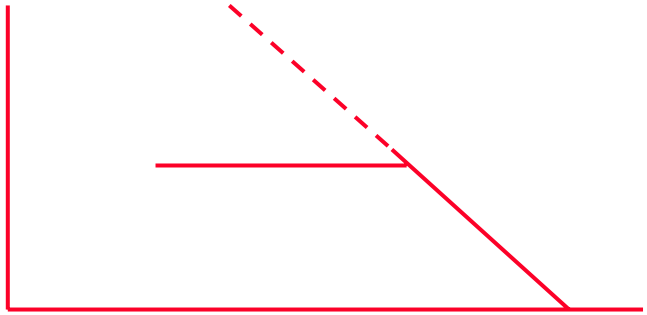
2.21 Common Options Strategies (Conti)

Call / Put Spread

Call Spread: Buy/Sell Call Options at different Strikes



Put Spread: Buy/Sell Put Options at different Strikes

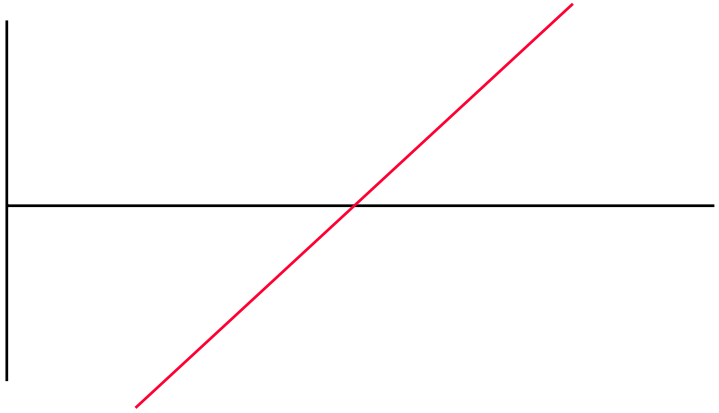


Calendar Spread: Buy/Sell Options at different Expiry Dates

2.21 Common Options Strategies (Conti)

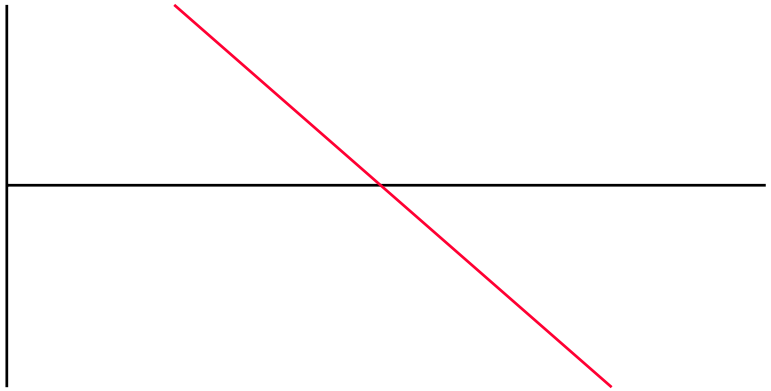
Target forward

- Buy call / sell put at same strike with same expiry date



Equivalent long Forwards

- Buy put / sell call at same strike with same expiry date

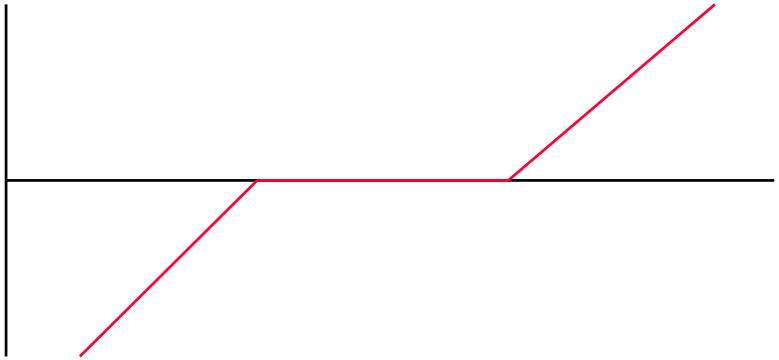


Equivalent sell Forwards

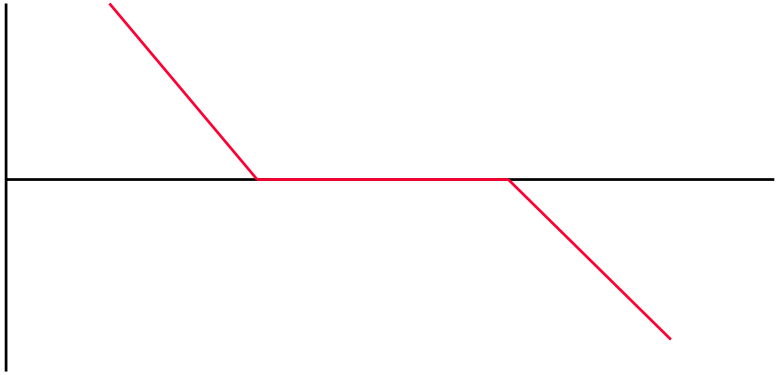
2.21 Common Options Strategies (Conti)

Range forward (also known as risk reversal)

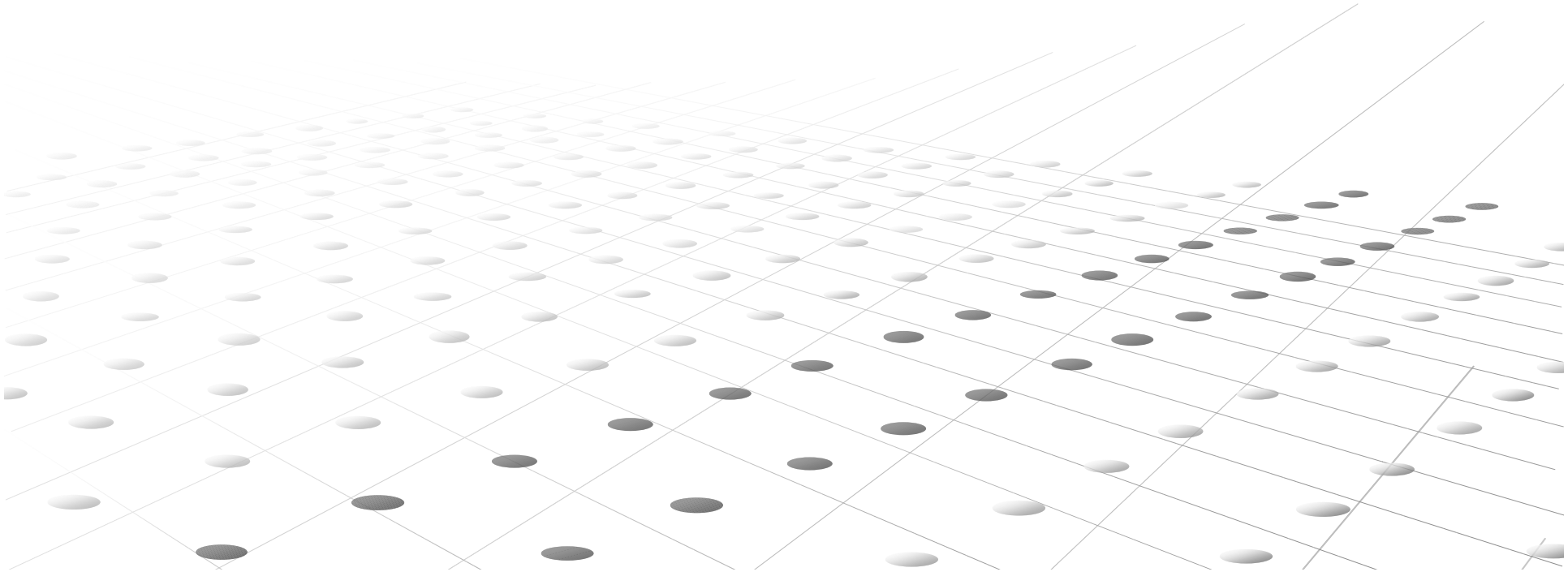
- Buy call/ sell put at different strikes with same expiry date



- Buy put/ sell call at different strikes with same expiry date



外匯避險



2.22 Hedging Strategy 避險策略

移轉不想要之風險

- 將風險轉化成衍生性商品承作人願意承擔之風險
- 在不同面向的風險中擇一承擔
- 例如，某公司之貸款成本爲浮動利率，因此承作一利率交換合約(interest rate swap)，支付固定利率，收受浮動利率，藉以固定貸款成本，此意味該公司將原先所承擔的利率上揚風險，轉化成利率下滑的風險

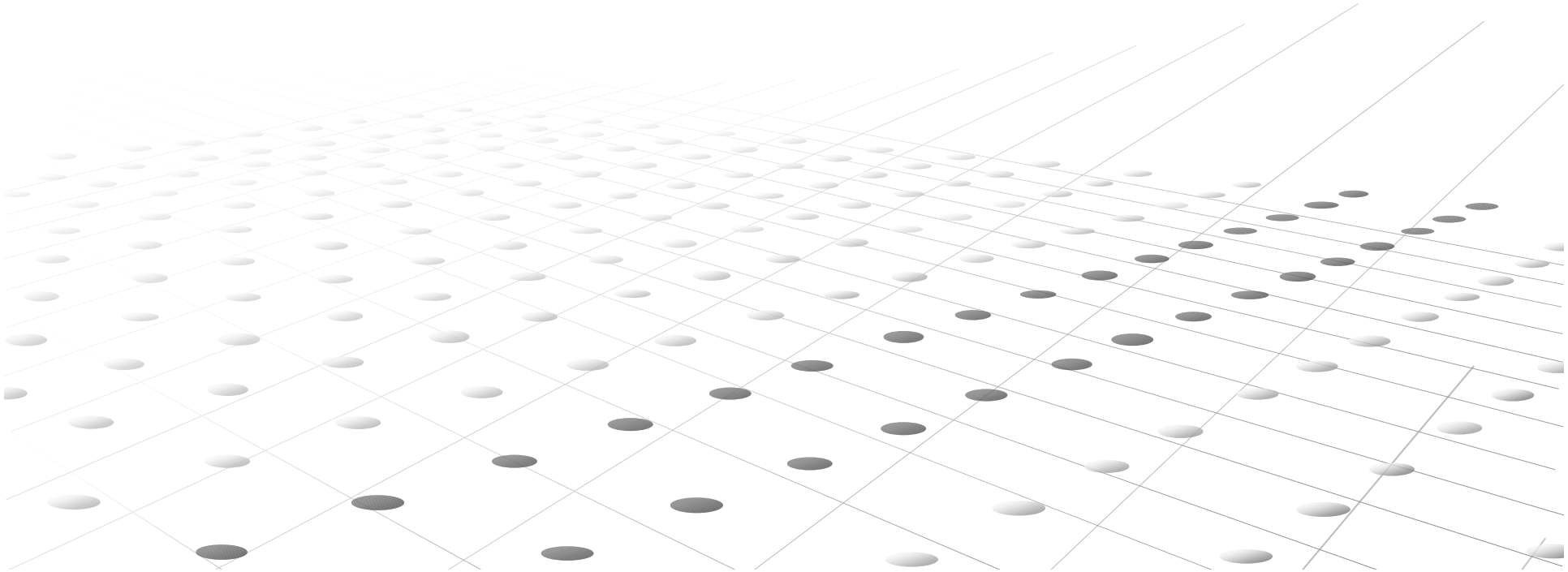
排除不想要之風險

- 將不想要之風險去除，並且不承擔額外之風險
- 風險最小化 (Best of both world)
- 例如，利率上限契約(interest rate cap) 之承作人可以規避利率上揚的風險，同時也有機會享受利率下滑的好處，可避開在低利率時代仍要承擔高利率的風險

2.23 Hedging 避險金融工具選擇

- 避險商品型態提供不同的風險價值
  - ✓ 風險移轉
    - 基礎工具: 遠期合約 (Forwards) / 交換合約 (Swap)
    - 零成本
  - ✓ 風險排除
    - 基礎工具: 選擇權 (Options)
    - 高成本
- 考量面向: 避險之程度與成本
  - ✓ 以避險程度及成本而言，風險之移轉與風險之排除分佔衍生性金融商品的光譜兩端
  - ✓ 風險之移轉: 只能規避單向之風險，但成本也相對地便宜
  - ✓ 風險之排除: 具有高度規避不同向風險之功能，但成本也相對地昂貴

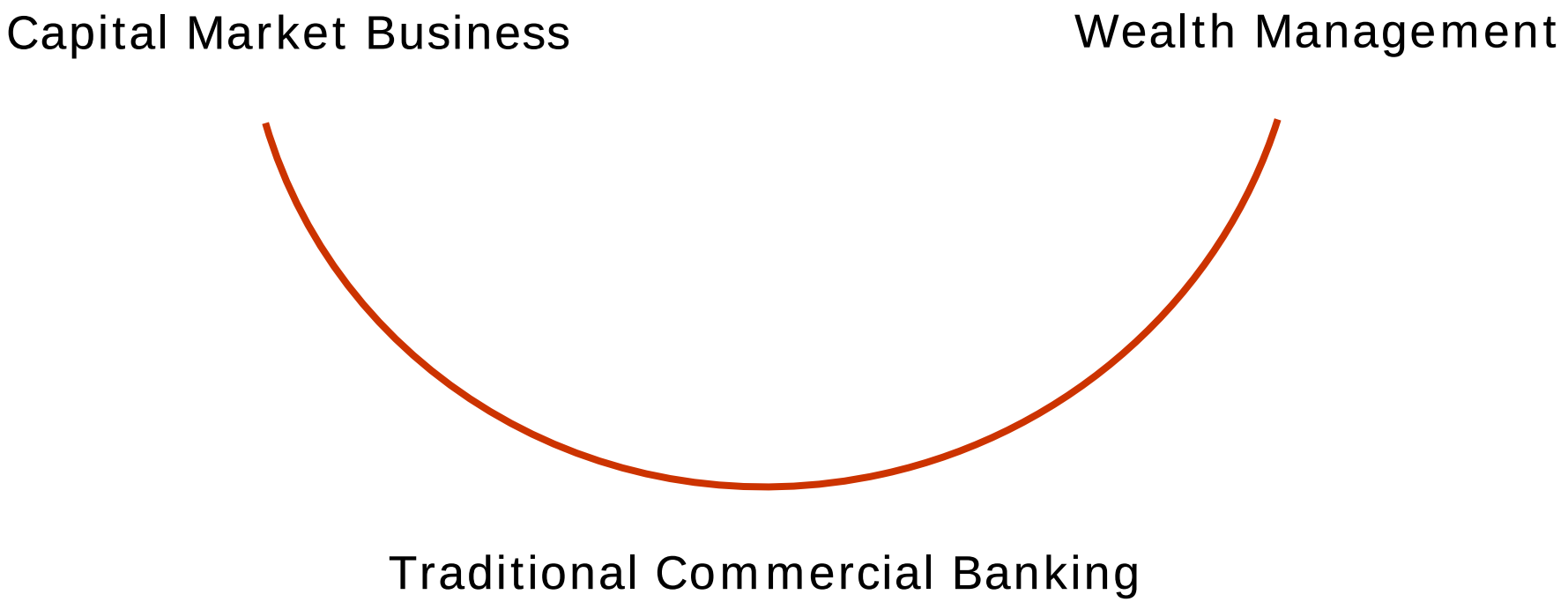
III.衍生性暨新種金融商品發展



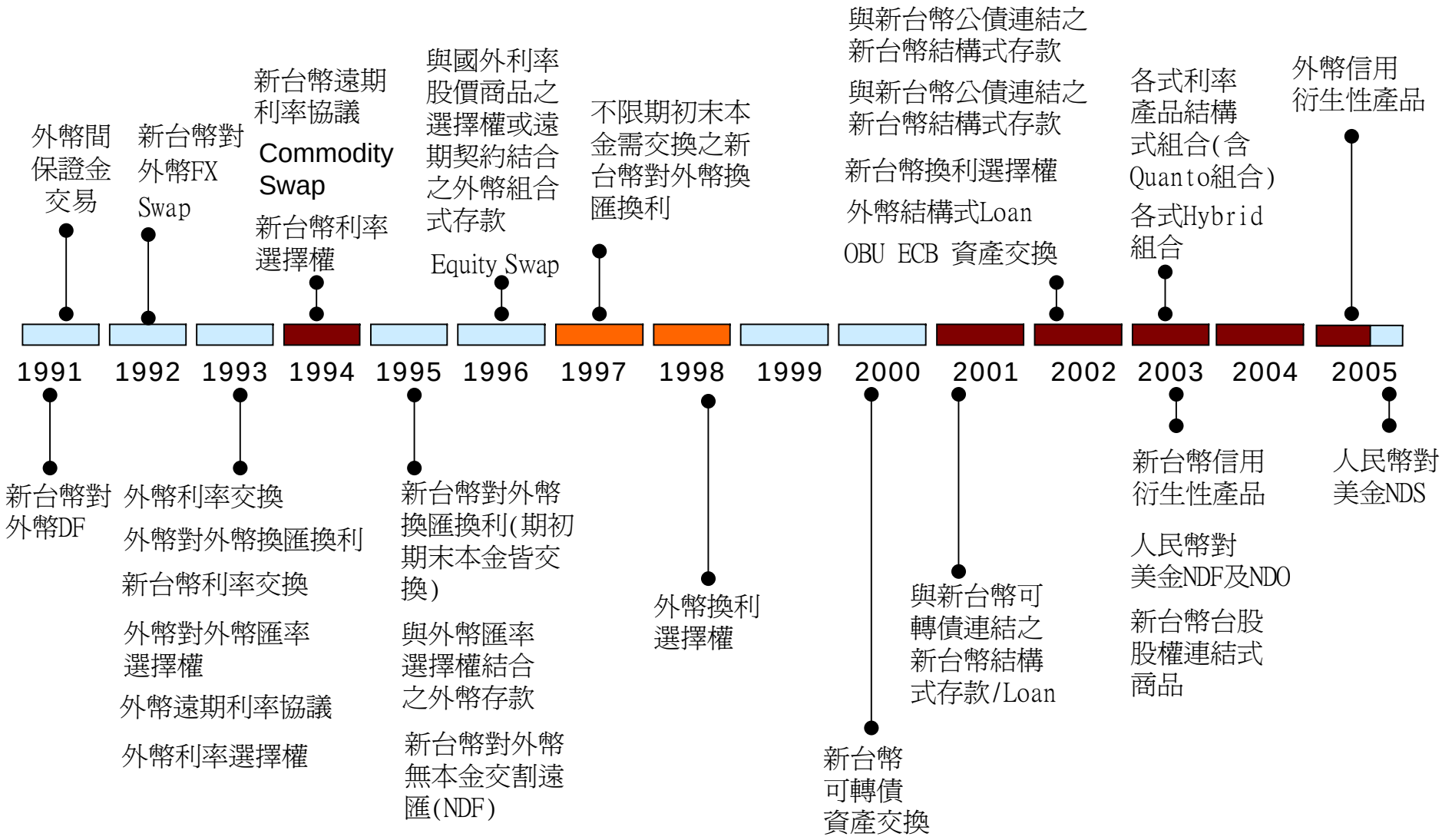
3.1 台灣近年新種金融商品發展背景

- 商業銀行走出傳統借貸業務:
  - ✓ 在全球金融國際化及本地金控版圖的激烈競爭中，銀行業務轉型欲提昇營運體質及績效。積極引進人才及 know how，銷售甚期望研發創新金融產品業務。主管單位由早年逐項產品業務申請鬆綁至採負面表列開放。
- 證券業深耕資本市場靈活佈局:
  - ✓ 證券產業主管單位證期局、證交所、櫃檯買賣中心及業者積極合作，推動股債市各項制度興革，以新制度、新商品及國際化爲發展主軸，因應國內銀行業務多元化，市場自由化與國際化的衝擊與挑戰
- 政府推動相關立法或修法:
  - ✓ 如金融控股公司法、金融資產證券化、不動產證券化、 RTC 等法案

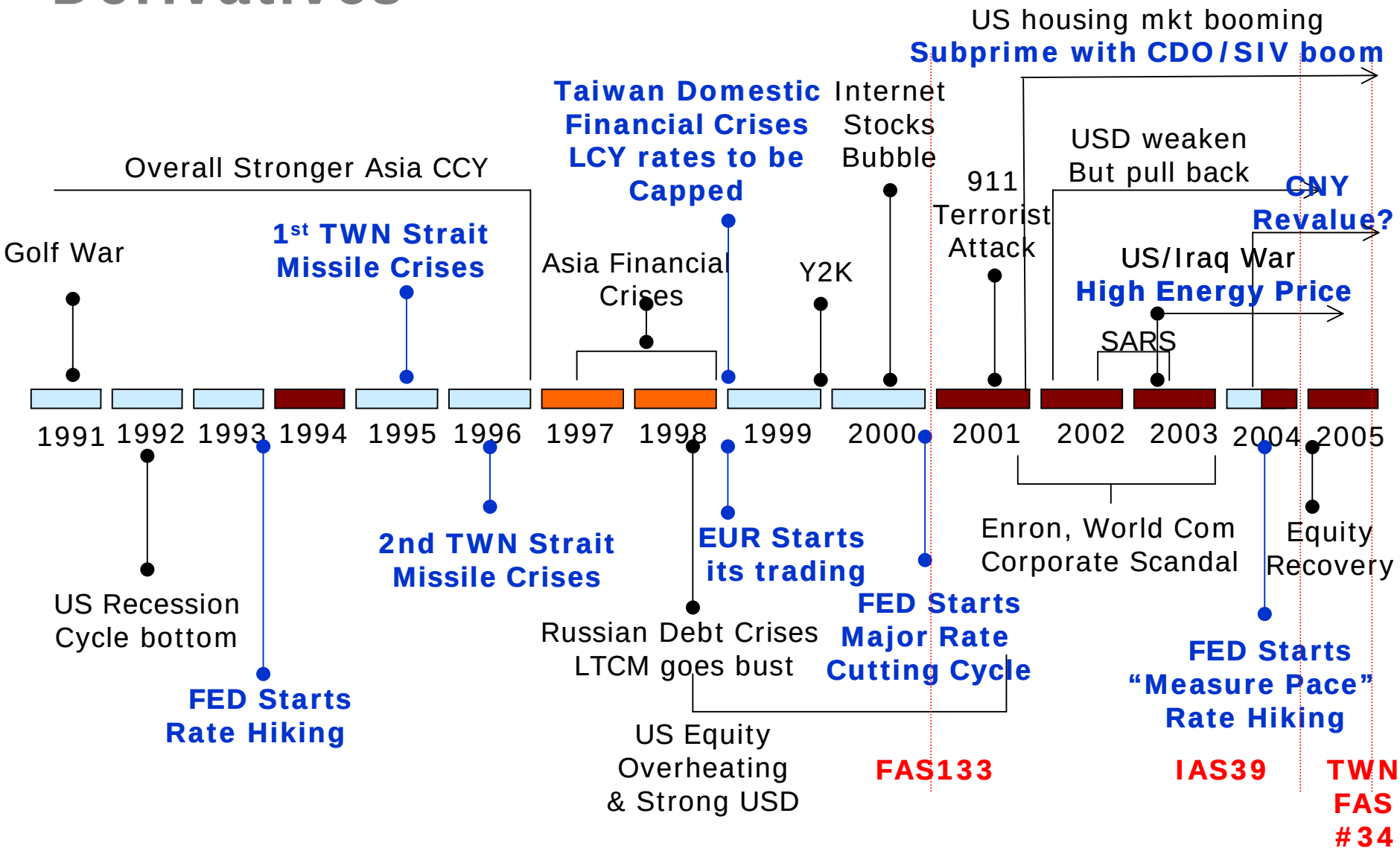
3.2 台灣近來金融業業務成長策略



3.3 台灣銀行業OTC衍生性金融商品之開放



3.4 Macro and Micro drive use of Derivatives



3.5 避險衍生性金融商品新奇結構(Exotic) 運用

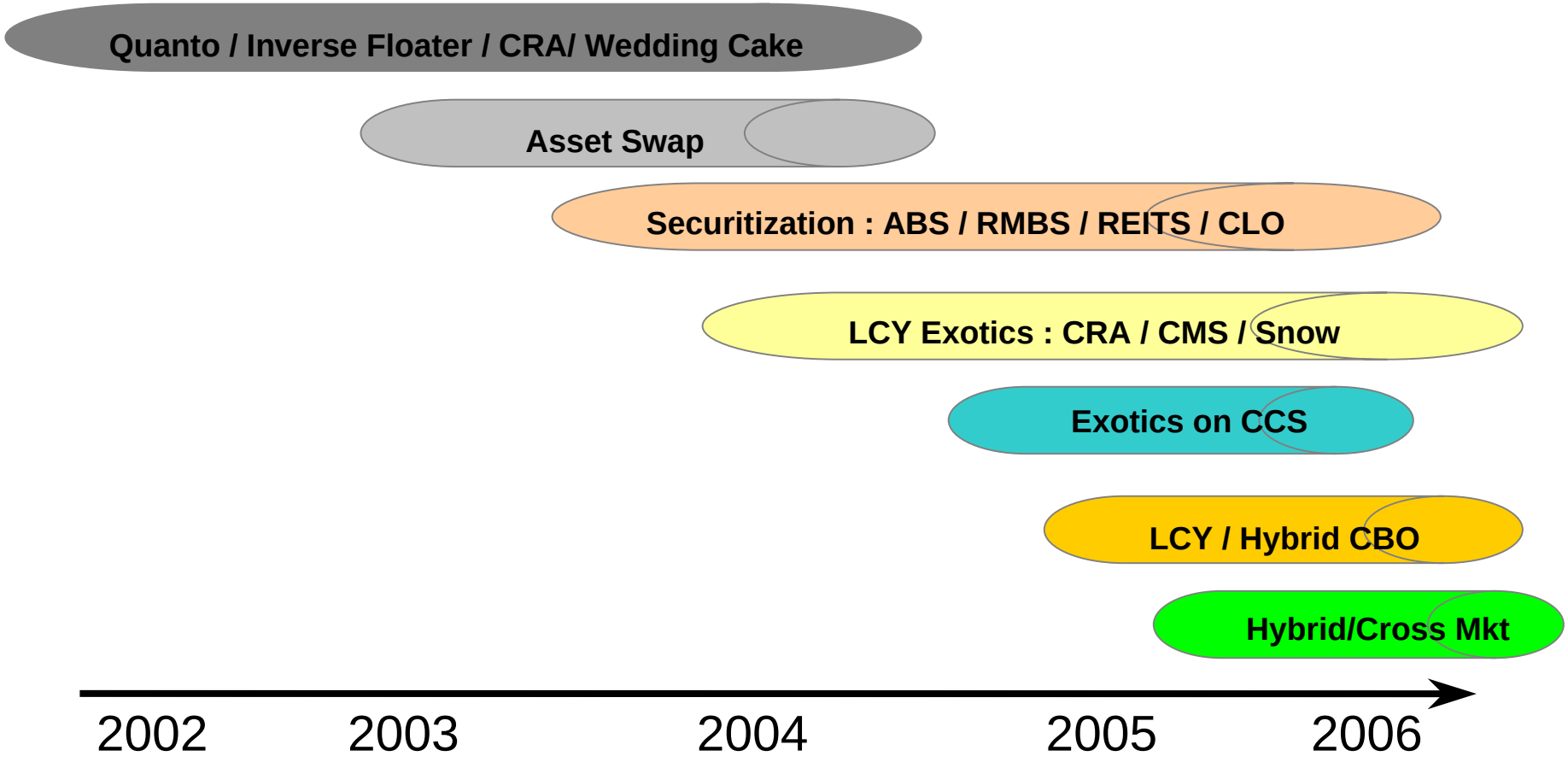
- 基礎架構
  - ✓ 遠期合約 (Forwards)、交換合約 (Swap) 和選擇權 (Options)
- 新奇(Exotic)特性:
  - ✓ 市場已發展出許多結合基本避險商品之新奇特性，例如 KI、KO、Cancellable、Extendible、Digital Range 、Quanto等
- 新奇(Exotic)結構: 客製化的特性，可針對特定避險人對風險移轉，風險排除與成本之個別需求設計出新奇的產品結構
- 結合不同市場的指數(Cross Index Reference): 避險的代理(Proxy)工具
  - ✓ 例如，以USD LIBOR指數來代替新台幣商業本票利率，或者以西德州原油(WTI)價格來代替噴射機燃油(Jet Fuel)價格

3.6 投資型結構式商品暨產品架構風行

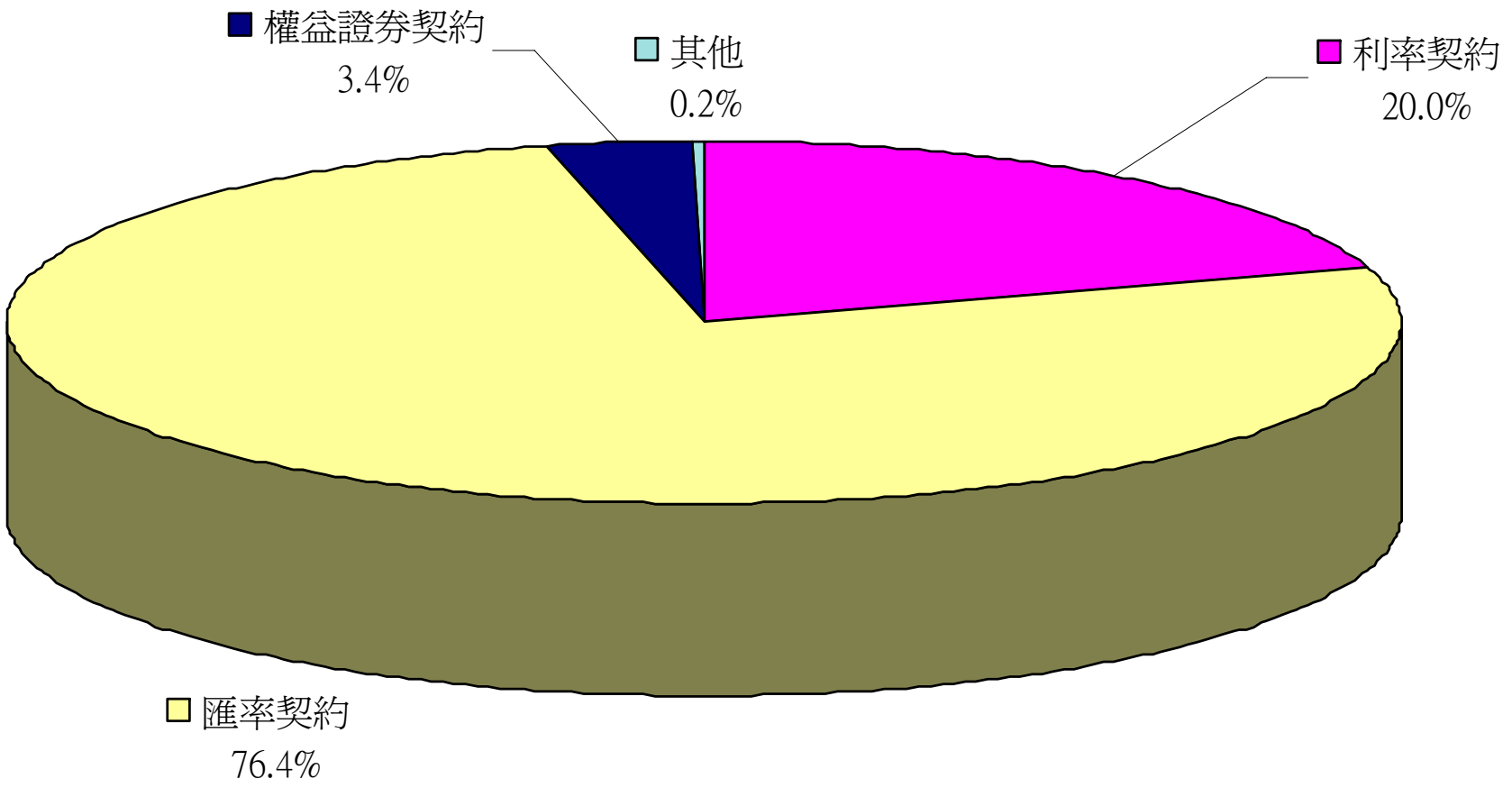
- 增益型產品Yield Enhancement Structured Products
  - ✓ 市場上對於以新奇結構(Exotic)來增加收益的需求龐大
  - ✓ 新奇結構式商品(Exotic) likes Inverse Floaters, Range Accrual, CMS Spread & Accrual, Auto Call/Target Redemption, Snow Ball Note or Investment Contract
  - ✓ 新奇結構混合式商品(Exotic Hybrid) likes interest rate + credit, interest rate + equity, interest rate + FX Note or Investment Contract
- 投資型保單 Investment Linked Policy
- 資產管理型產品Asset Management Products
  - ✓ Bond Fund, MM Fund, Balanced Fund, Equity Fund, etc

3.7 2001至2007 間結構式產品及信用債券蓬勃發展

惟市況於'07年次貸危機及'08年金融海嘯後迅速消褪急凍



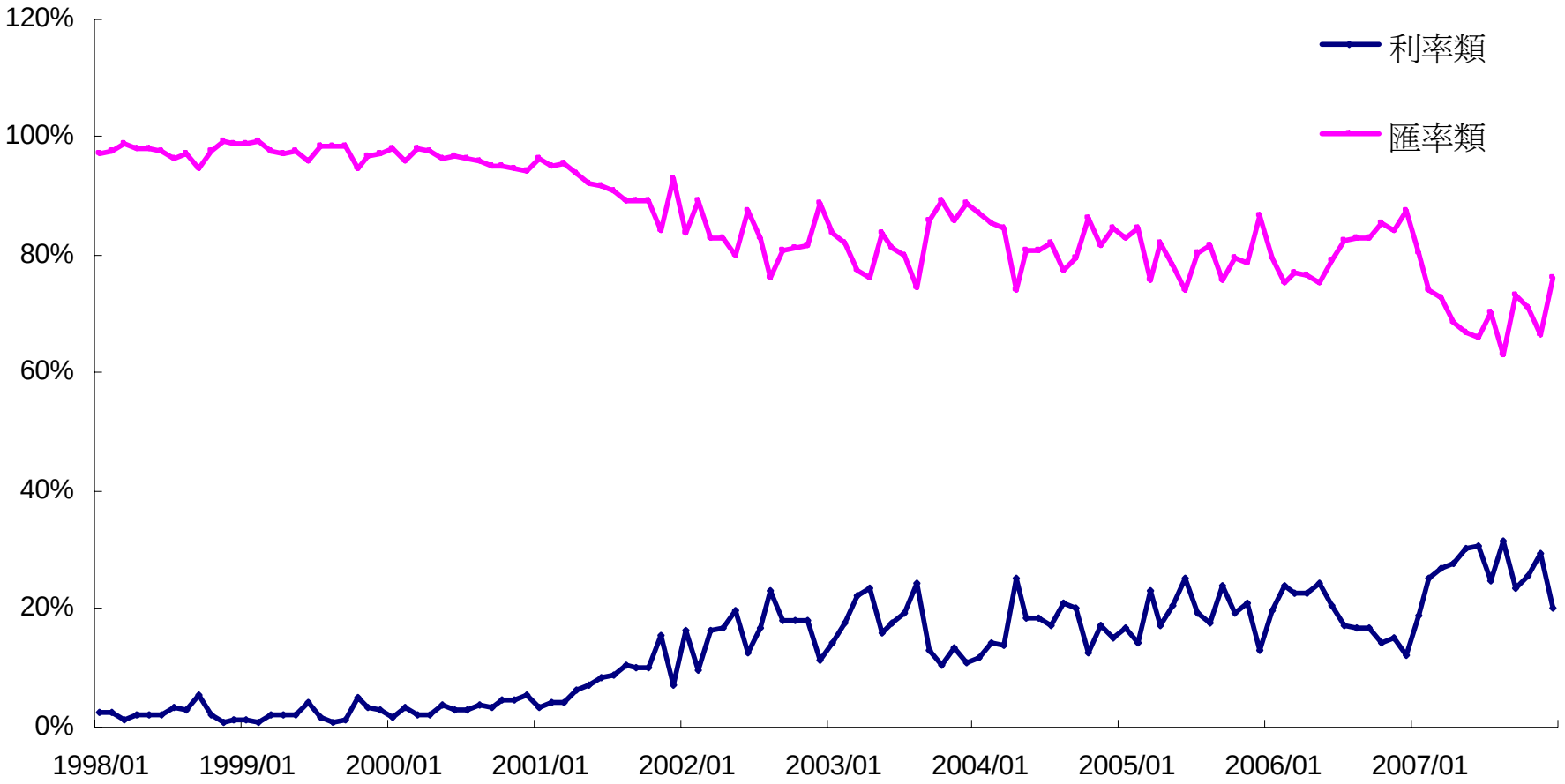
3.8本地衍生性金融商品交易統計-從產品內涵分類



資料來源:中央銀行, 2007年12月份

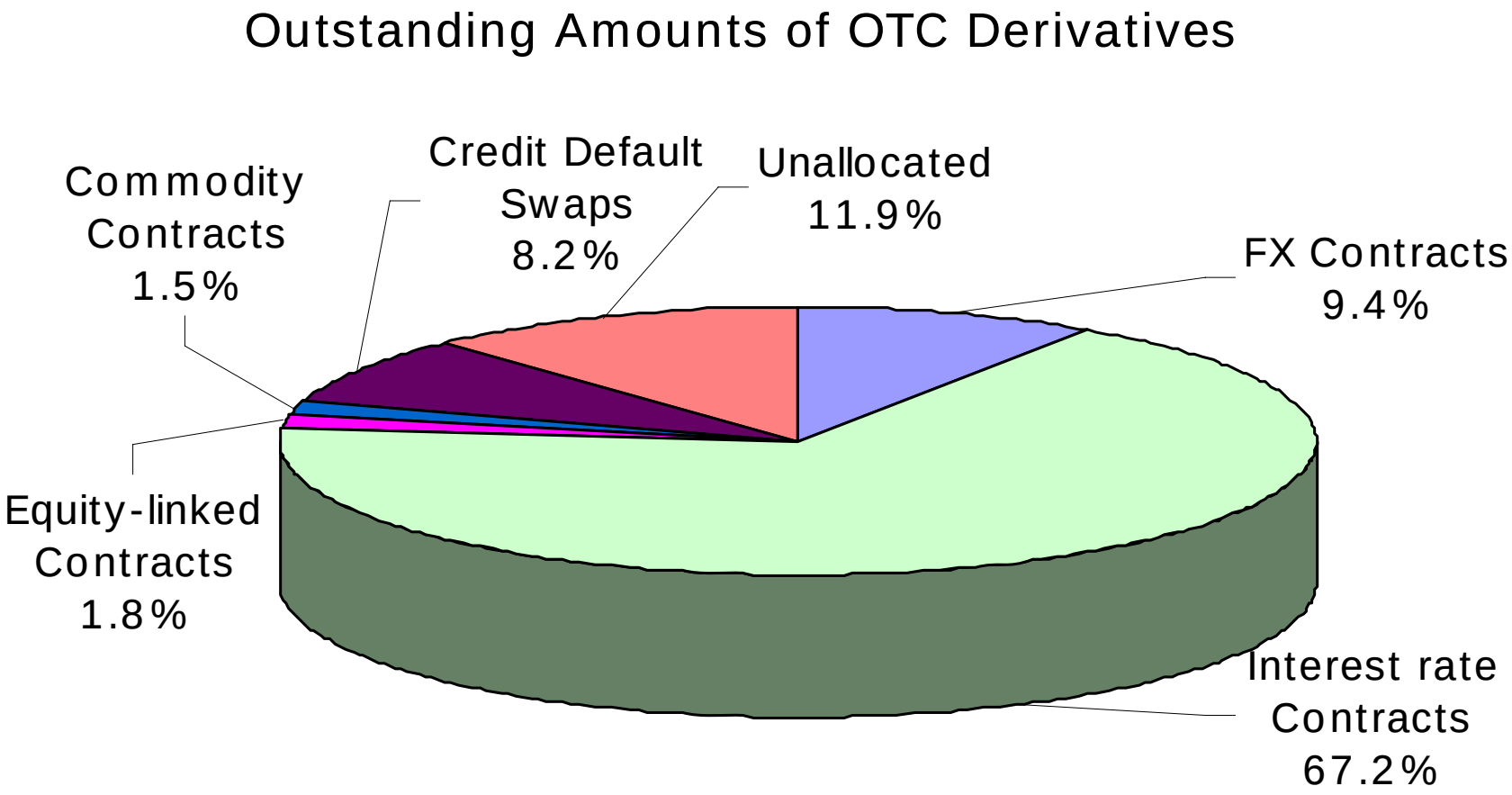
3.9本地衍生性金融商品歷年交易量統計

交易量比重 %



資料來源:中央銀行

3.10全球衍生性金融商品交易統計-從產品內涵分類



Source: Derivatives Statistics, BIS, June 2007

3.11 避險衍生性金融商品範例A

- 新台幣利率交換合約 NTD Interest Rate Swap
  - ✓ 天期: 5年
  - ✓ 避險人支付: 固定利率 1.48%
  - ✓ 避險人收受: 浮動利率 90天商業本票利率 (90-day CP Rate)
  - ✓ 承作此項換利合約成本爲零
  - ✓ 假設目前90天商業本票利率: 0.52%

- 風險之移轉
  - ✓ 排除之風險: 90天商業本票利率上揚大於 1.48%
  - ✓ 增加之風險: 90天商業本票利率下滑小於 1.48%

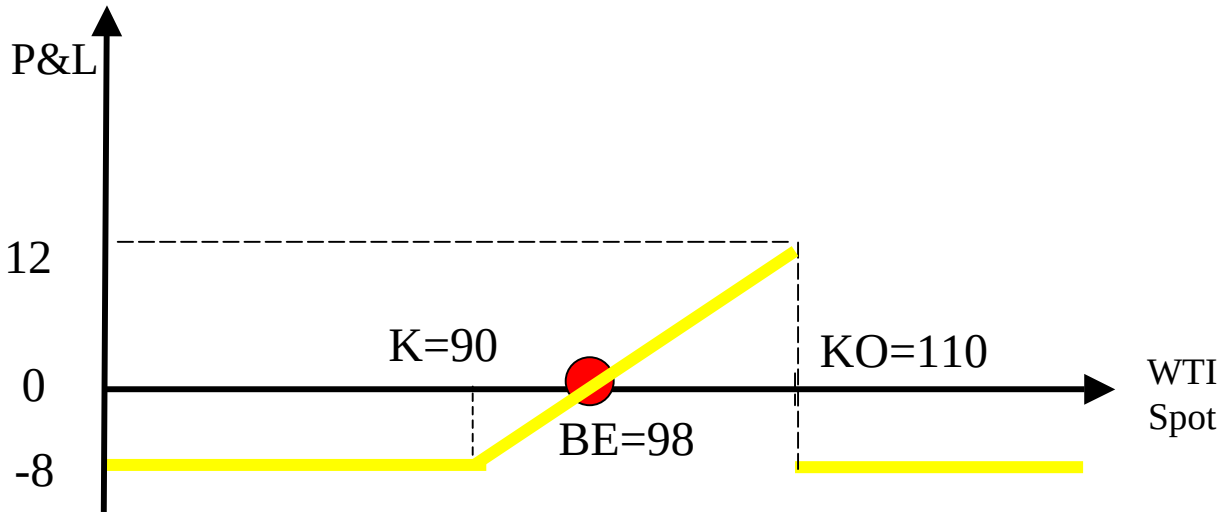
3.11 避險衍生性金融商品範例B

- 原油價格觸及失效買權WTI Knock-out Asian Call Option
  - ✓ 天期: 1年
  - ✓ 避險人購入油價失效買權:月平均原油單價的履約價爲 USD 90/桶
  - ✓ 如果油價漲破USD 110/桶,此買權立即失效
  - ✓ 權利金(避險成本): USD 8/桶
  - ✓ 實質履約價(含權利金成本): USD 98/桶

- 風險之排除
  - ✓ 排除之風險: 油價漲破USD 90/桶,但低於USD 110/桶
- 油價在USD 110/桶以下,避險人可以完全排除價格風險,但同時也可以享受油價下跌的避險好處.此項合約的避險成本相對比較低

3.11 避險衍生性金融商品範例B（續）

- 原油價格觸及失效買權WTI Asian Knock-out Call Option
  - ✓ 天期: 1年
  - ✓ 避險人購入油價失效買權:月平均原油單價的履約價爲 USD 90/桶
  - ✓ 如果油價漲破USD 110/桶,此買權立即失效
  - ✓ 權利金(避險成本): USD 8/桶
  - ✓ 實質履約價(含權利金成本): USD 98/桶

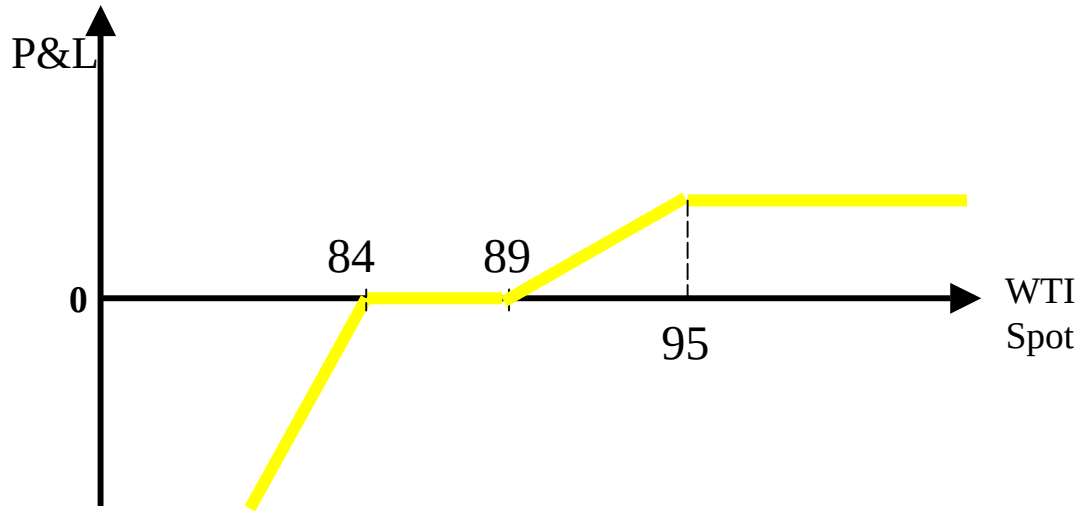


3.11 避險衍生性金融商品範例C

- 原油價格三向式可展期合約 3-Way WTI Extendible with Double Gearing Structure
  - ✓ 天期: 1年 (2008/02/01-2009/01/31)
  - ✓ 交易銀行每季皆有權決定是否展期,最多可展延至1年
    - 展期一:2008/02/01-2008/04/31
    - 展期二:2008/05/01-2008/07/31
    - 展期三:2008/08/01-2009/10/31
    - 展期四:2009/11/01-2009/01/31
  - ✓ 避險人買進1倍的油價價差買權合約(1x Call Spread Option): 月平均油價的履約價在 USD 89/桶 和 USD 95/桶
  - ✓ 避險人賣出2倍的油價賣權: 履約價爲 USD 84/桶
  - ✓ 避險人賣給交易銀行可每年決定延展天期的權利
  - ✓ 承作此項合約的成本爲零
- 風險之排除
  - ✓ 排除之風險: 油價漲破USD 89/桶,但仍低於USD 95/桶
  - ✓ 增加之風險(1): 油價跌破USD 84/桶以下的價格風險
  - ✓ 增加之風險(2): 展期後可能無法避開油價上漲的風險,但同時也有可能不需要承擔油價下跌帶來的價格風險

3.11 避險衍生性金融商品範例C (續)

- 原油價格三向式可展期合約 3-Way WTI Extendible with Double Gearing Structure
  - ✓ 天期: 1年.交易銀行每季皆有權決定是否展期,最多可展延至1年,共4期
  - ✓ 避險人買進1倍的油價價差買權合約(1x Call Spread Option): 月平均油價的履約價在 USD 89/桶 和 USD 95/桶
  - ✓ 避險人賣出2倍的油價賣權: 履約價爲 USD 84/桶
  - ✓ 避險人賣給交易銀行可每年決定延展天期的權利
  - ✓ 承作此項合約的成本爲零



3.12 避險衍生性金融商品風險價值 — 總結

- 產品比較
  - ✓ 同樣地,不同油價合約的產品結構對不同的避險人而言,代表著不同的風險內容,避險程度及成本,而在不同的市場環境之下,不同的產品結構各擅勝場. 因此很難比較孰優孰劣.
- 在上述的產品範例中可見,衍生性金融商品確實具有中性風險價值.因此,每一種產品結構都能提供避險價值, 只是程度上有所不同
- 商品的避險功能及程度完全取決於承作人所面對及所希望面對的風險內容及成本考量
- 因此,避險人應該衡量自己所能承擔的風險內容,避險程度及成本,選擇適合自己的產品結構

3.13 新種金融投資型契約範例(Hybrid Exotic)
~ 全球民生關鍵必需資產保本投資契約

產品參考條件

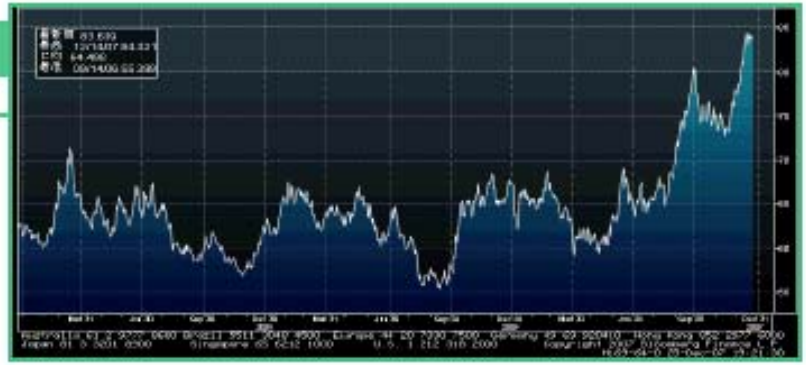
- 天期: 3.5年期
- 幣別: 美金計價
- 本金: 到期100%保本
- 連結標的:
  - ✓ 標準普爾高盛農業指數 (Bloomberg: SPGSAGP)
  - ✓ 標準普爾全球基礎建設指數 (Bloomberg: SPGTINFE)
  - ✓ WilderHill新能源全球創新指數 (Bloomberg: NEX)
- 配息: 每季配息一次
- 配息條件: 爲三指數相較於期初較小之漲幅,最高不超過 3%, 最低0%
- 提前贖回: 於任一評價日,若三個指數相較期初淨值之百分比皆大於等於當季的提前贖回標準
- 提前贖回評價日: 自第一季起, 每季一次 (共13次機會)
- 到期贖回標準: 第一季:105%, 第二季:102.5%, 第三季:100%, 第四季:97.5%, 第五季至期末:95%
- 到期贖回金額: 到期贖回100%本金

3.13 新種金融投資型契約範例(Hybrid Exotic)
~ 全球民生關鍵必需資產保本投資契約

標準普爾高盛農業指數 S&P GSCI Agriculture Index

指數成份:小麥, 玉米, 黃豆, 棉花, 糖, 咖啡, 可可期貨

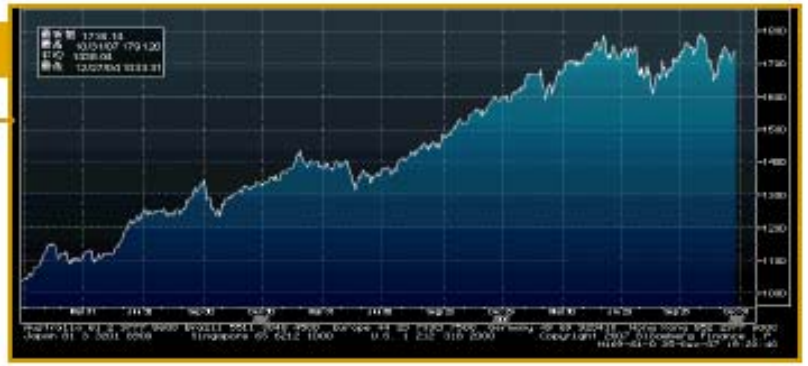
- ★ 標準普爾高盛農產品指數為以一籃子農產品期貨所組成之商品價格指數，個別商品權重以各農產品之全球產量或消費量進行計算，藉以反映個別農產品對全球經濟的影響程度。
- ★ 目前指數之成分為小麥、玉米、黃豆、棉花、糖、咖啡、可可亞等，其相對權重為小麥27.2%，赤小麥9.5 %，玉米23.7%，黃豆16.2%，棉花7.7%，糖8.5 %，咖啡5.3 %及1.9%可可。



標準普爾全球基礎建設指數 S&P Global Infrastructure Index

指數成份:全球公共事業, 交通運輸, 能源的領導公司股票

- ★ S&P全球基礎建設指數，此指數為提供市場交易基礎建設類股之指標指數，主要連結於75檔全球性基礎建設公司股票這些股票依資本額調整權重，最小標的不得低於美金2億5千萬元。
- ★ 指數主要包含領域為公共事業、交通運輸、能源等相關公司。



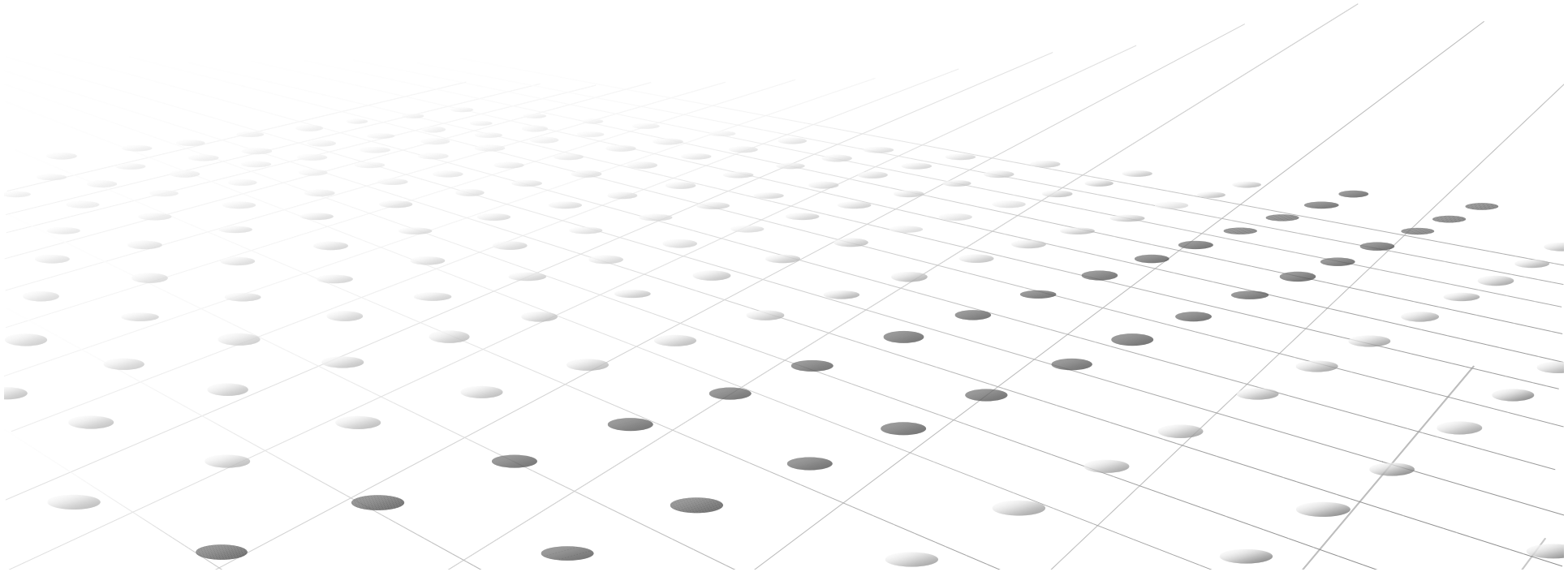
WilderHill 新能源指數 Wilder New Energy Global Innovation Index

指數成份:全球太陽能, 生質能源, 風力發電等領導公司股票

- ★ WilderHill新能源全球創新指數涵蓋了全世界21個國家 88間專注於提供新能源生產、保存、運用之相關科技商品或服務之公司的股價。
- ★ 主要新能源領域為太陽能，風力，生質能源。此外，指數特別著重於減少溫室氣體與傳統石化燃料（如煤、石油、天然氣等）排氣量的新創環保科技公司。

12/27/2004-2007/12/27 Bloomberg

IV.衍生性暨新種金融商品行銷準則



4.1 衍生性金融商品行銷之規定

- 核心規範: “分類 & 分級”
  - ✓ 衍生性商品業務執行方針
  - ✓ 行銷及交易衍生性暨結構型商品之全球綜合政策
  - ✓ 依據市場最新發展而隨時修改以上準則
- 其他相關規範:
  - ✓ 偏離市價之交易規範 (Off-Market Transaction Policy)
  - ✓ 結構性財務之規範 (Structured Finance Policy)
  - ✓ 交易擴大回報之規範 (Escalation of Transactions Policy)
  - ✓ 自然投資人銷售規範 (Retail Distribution Committee Policy)

4.2 行銷規定之準則 ~ S&A

- 適當性原則 Suitability & Appropriateness:
- 交易對手是否適合從事該筆交易?
  - ✓ 一般而言，客戶有責任決定是否適合從事該筆交易
  - ✓ 以專業及市場參與者的角度評估下列事項:
    - 客戶是否明瞭該筆交易及其相關之風險
    - 該筆交易是否與該客戶之交易目的，內部政策及外部標準相符合
  - ✓ 有義務提供客戶適當之資訊，其中應包括但不限於完整之風險揭露， 以可理解之形式幫助客戶自行作出資訊充分獲得之商業判斷

4.3 行銷規定之準則 ~ 風險揭露

- 風險揭露
- 交易對手是否瞭解風險?
  - ✓ 風險揭露必須與交易對手之經驗及交易種類相符合
  - ✓ 以口頭或文件作紀錄
  - ✓ 若以文件作紀錄，必須有適當之聲明事項
  - ✓ 設立情境分析 、交易契約書、客戶簡報及交易評估之規範準則

4.4 政策要點 - 產品與交易類別

- 產品類別
  - ✓ 依風險之不同，衍生性商品劃分爲兩大類
- 類別 A
  - ✓ 一般性的
  - ✓ 未經財務槓桿的
  - ✓ 非複雜的交易
  - ✓ 市場風險低或可預測的
  - ✓ 在市場上被普遍理解而且被廣泛交易
- 類別 B
  - ✓ 非一般性的
  - ✓ 經過財務槓桿的
  - ✓ 複雜的交易
  - ✓ 具有高度，不可預測或不對稱的市場風險

4.5 政策要點 - 客戶承作衍生性商品適當性審核

- 適當性原則之確認清單
  - ✓ 理解並證明客戶承作衍生性商品交易的適當性之程序
- 一般問題確認
  - ✓ 基本上涵蓋交易對手之業務，財務部位,組織，衍生性商品的知識，內部政策，承作衍生性商品交易之授權...等問題
- 產品類別 B 交易之額外問題確認
  - ✓ 涵蓋該筆交易之目的，客戶之管理高層是否充分獲得該筆交易之資訊，是否有其他稅務，會計，規範，商譽，公開揭露...等之考量

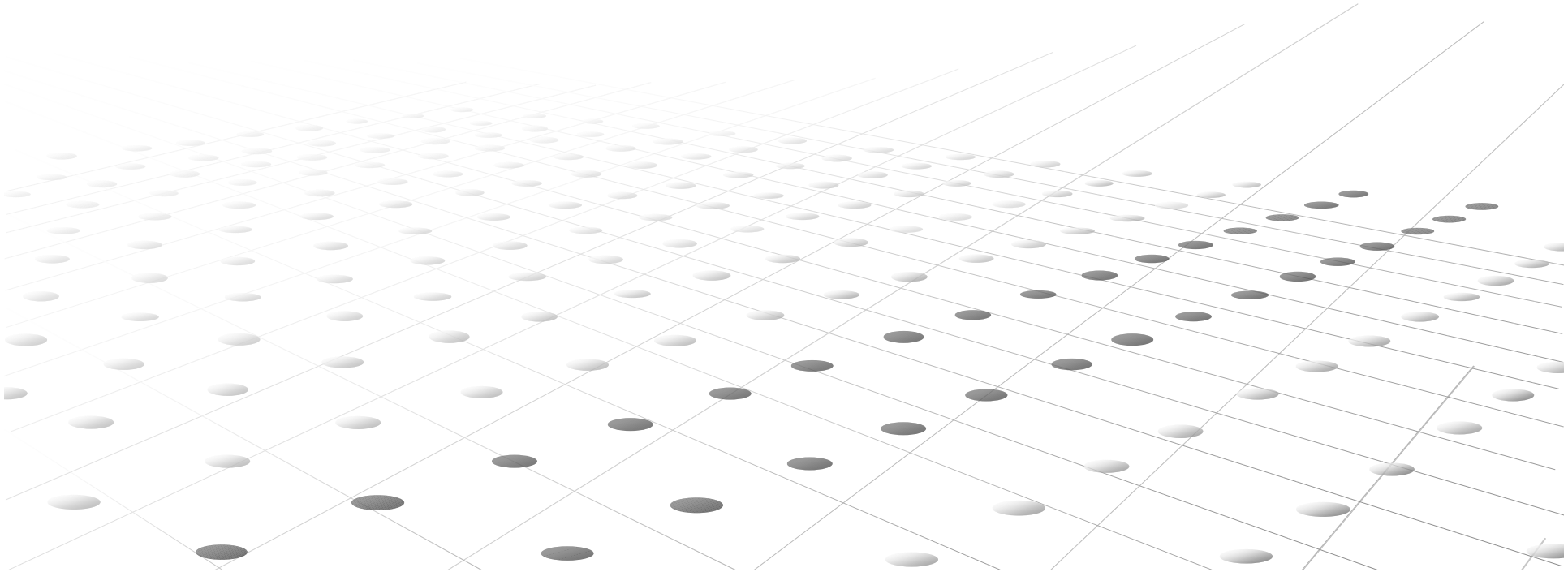
4.6 政策要點-交易對手類別

- 交易對手類別
  - ✓ 依據從事衍生性商品業務的程度，交易對手劃分爲四個類別
- 交易員
  - ✓ 專業之交易對手，其本身也爲衍生性商品之交易員
  - ✓ 通常爲全球性之衍生性商品銀行以及專業投資機構
- 市場參與者
  - ✓ 具有專精知識之財務中介機構，本身不是衍生性商品交易員但是活躍地交易相關產品，而且有能力設計模型抑或是瞭解重大風險所在
- 非專業者
  - ✓ 衍生性商品不是主要的業務範圍，通常只是使用者
  - ✓ 多數的公司爲非專業者
- 零售中介機構
  - ✓ 將金融商品轉賣給一般投資大眾之通路

4.7 銀行提供之文件及客戶應簽署之文件

- 交易前 - 客戶應簽署之文件
  - ✓ Master Agreements (mainly ISDA)
  - ✓ CSA/Loss Limitation Agreements (if need)
  - ✓ 風險預告暨重要事項聲明
  - ✓ 非關係人/內部人聲明書
  - ✓ 衍生性商品交易授權證明
- 交易時 – 銀行提供之文件
  - ✓ 商品交易契約書 (Term Sheet)
  - ✓ 前檯交易證明
  - ✓ 後檯交易證明
- 交易後 – 銀行可提供之文件
  - ✓ 市價變動報告書

V.衍生性金融商品的設計與創新



5.1 Challenges and Opportunities

- Globalization and Evolving Regulatory Institution
- New and Complex Derivatives
- Derivatives back behind Structured Credit Innovative Tranching Technology
- Documentation for Credit Support or Enhancement
- Other Issues/Discussions

5.2 Challenges to Risk Mgmt/Regulators

(1) Structured Derivatives Products

- Complexity & Uncertainty
- Hybrid Product
- Securitized Product
- Hedge Fund
- Complicated Accounting Procedure

5.3 Sample of complexity

TARN (Target Redemption Accumulator Forward)

- The Target Redemption Accumulator Forward is one of new FX Option structures in the market today, its target redemption “feature” or “global cap” on the potential overall payout gives a unique advantage that very few structures in the market do, which is that ***this structure will “knock Out” only after the absolute best case for the customer has been locked in.***

5.3 Sample of complexity(續)

TARN (Target Redemption Accumulator Forward)

- Strike = 107.65
- The client enters into the following strip of forwards:
  - ✓ Final Maturity: 12 Months (Monthly expiries)
  - ✓ If at maturity Spot fixing is lower than the strike:
    - Client sells USD 1mio ag JPY at 107.65
  - ✓ If at maturity Spot fixing is higher than the strike:
    - Client sells USD 2mio ag JPY at 107.65 (it's a leverage structured)
  - ✓ Global Cap : 30 BF on USD 1mio or JPY 30 Mio
- As soon as the total positive payout on the USD puts (on puts only!) reaches 30 big figures (30 JPY per USD), the remaining options of the strip (both the calls and the puts) disappear.
- Please note that the potential negative payout of the structure is not capped.
- The next slide has an example of how the structure works

5.3 Sample of complexity(續)

- The following table describes the TARN payoff on a simulated scenario based on the strikes and notional of the previous slide.

Monthly Expiry Date	Fixing at Expiry Date	Customer Cash flow	Payoff gain / (loss) Big Figure Units	Accumulated Cap amount	Remaining Cap amount
Inception date	----	----	----	0.00	**30.00**
24Oct07	105.65	Custy sell USD 1 mio @ 107.65	2.00 (107.65 - 105.65)	2.00	28.00
24Nov07	104.65	Custy sell USD 1 mio @ 107.65	3.00 (107.65 - 104.65)	5.00	25.00
24Dec07	109.65	***Custy sell USD 2 mio @ 107.65***	**(2.00) * 2**	5.00	25.00
24Jan08	114.65	***Custy sell USD 2 mio @ 107.65***	**(7.00) * 2**	5.00	25.00
24Feb08	115.65	***Custy sell USD 2 mio @ 107.65***	**(8.00) * 2**	5.00	25.00
24Mar08	103.65	Custy sell USD 1 mio @ 107.65	4.00 (107.65 - 103.65)	9.00	21.00
24Apr08	102.65	Custy sell USD 1 mio @ 107.65	5.00 (107.65 - 102.65)	14.00	16.00
24May08	100.65	Custy sell USD 1 mio @ 107.65	7.00 (107.65 - 100.65)	21.00	9.00
24Jun08	103.65	Custy sell USD 1 mio @ 107.65	4.00 (107.65 - 103.65)	25.00	**5.00**
24Jul08	**97.65**	**Custy sell USD 0.5 mio @ 107.65**	**10.00 (107.65 - 97.65) (but only 5 BF remain) so the cap hits here)**	**30.00**	**0.00**
24Aug08	102.00	No cash flow	0.00 (KO)	30.00	0.00
24Sep08	106.00	No cash flow	0.00 (KO)	30.00	0.00

The "fixing" at this expiry date is 97.65, therefore, the structure should pay ***JPY 10 mio*** which comes from ***USD 1mio * (107.65 – 97.65)***, but the remaining cap for this tenor is only **5 big** figures (**5 bf on USD 1 mio = JPY 5 mio**), so in order to reflect the correct payout of this TARN structure, we need to scale the notional to ***USD 0.5 mio * (107.65 – 97.65).= JPY 5 mio***. This is why we changed the notional on this last cash flow from USD 1 mio to USD 0.5 mio.

5.3 Sample of complexity(續)

- The following table describes the TARN payoff on a simulated scenario based on the strikes and notional of the previous slide.

Monthly Expiry Date	Fixing at Expiry Date	Customer Cash flow	Payoff gain / (loss) Big Figure Units	Accumulated Cap amount	Remaining Cap amount
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24Aug08	102.00	No cash flow	0.00 (KO)	30.00	0.00
24Sep08	106.00	No cash flow	0.00 (KO)	30.00	0.00

On 24Dec07 custy is “out of the money” by 2 bf on USD 2mio, effectively custy is OTM by **4 bf** 0n USD 1 mio, on 24Jan08 custy is OTM **14 bf** in USD 1 mio, on 24feb08 custy is OTM by **16 bf** on USD 1mio. By the end of this 3 mths, this custy has been OTM by **34 bf** all together. As you can see from this exercise, there is no cap for the downside (it is unlimited), The global Cap of 30 bf only applies to the upside or positive payoff (when spot fixes below the strike for the above structure).

5.4 後金融海嘯的衍生性暨新金融商品發展趨勢

再次思考： What will be future developing ?

- Risk, Risk, and Risk Management to all parties
- Visibility and Credibility
- Next Prevailing Market Fashions?

5.5 後金融海嘯議題 ~ CDS: Discussion of Clearing

- **Basically CDS Clearing proposed is the same as ICE current operation**
  - ✓ Way of tracking risk is the same
  - ✓ Which might benefit some end-user but sacrifice the profit for certain financial institutions

- **The key is about re-establishing the "<u>confidence</u>"**
  - ✓ Considering the Lehman Brothers' bankruptcy issue
  - ✓ A regulated central CDS clearing house would bring "confidence" to the market
  - ✓ Government takes care on financial crunch issue likes "CDS" stabilize the views

10 *Source: Discussion result during presentation as of 2nd-Apr*

ISDA®

INTERNATIONAL SWAPS AND DERIVATIVES ASSOCIATION, INC.

NEWS RELEASE

For Immediate Release, Wednesday, April 8, 2009

ISDA Announces Successful Implementation of 'Big Bang' CDS Protocol; Determinations Committees and Auction Settlement Changes Take Effect

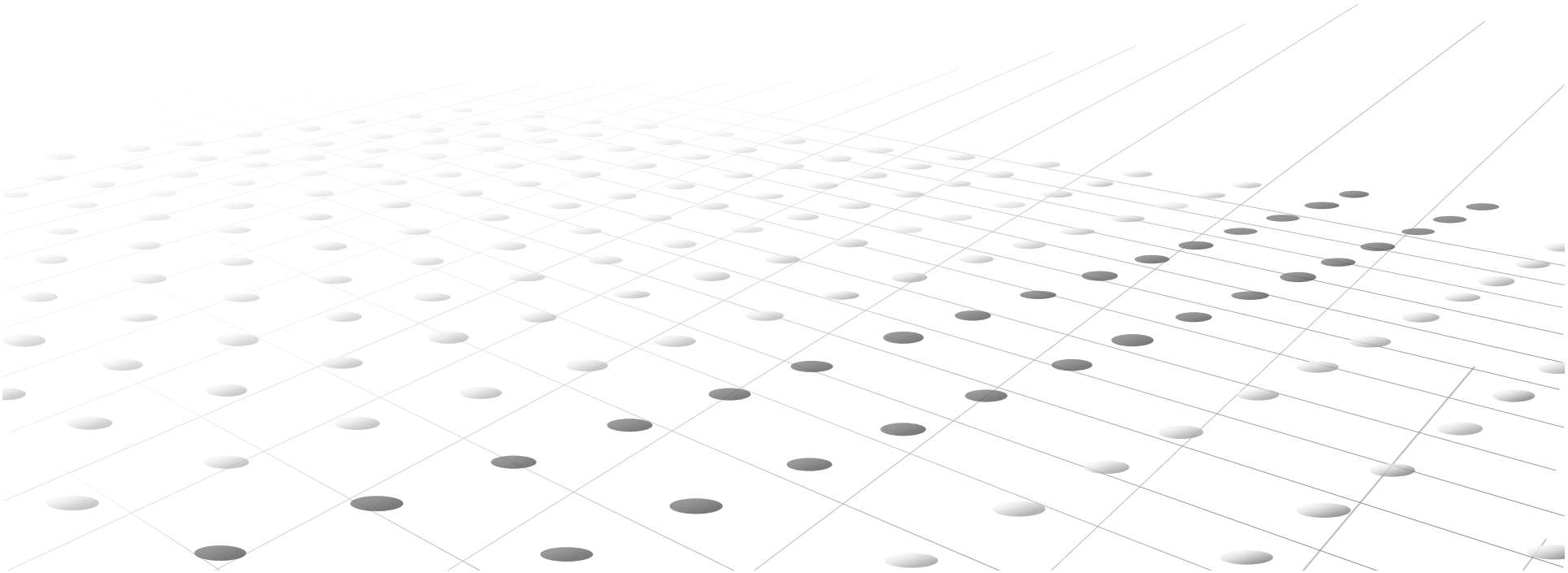
New York, Wednesday, April 8, 2009 – The International Swaps and Derivatives Association, Inc. (ISDA) today announced the successful implementation of its 2009 ISDA Credit Derivatives Determinations Committees and Auction Settlement CDS Protocol ('Big Bang' Protocol). Over 2,000 parties adhered to the Protocol, which closed on Tuesday, April 7. The Protocol represents the final step in the process known as "hardwiring", or the incorporation of auction settlement terms into standard CDS documentation.

5.7 Challenges to Risk Mgmt/Regulators

(2) Vanilla's trending toward E-platform

- System, Technology
- KYC, ATM...
- Freely Outbound/Inbound Access?
- Diverse Stakeholders

VI. Q & A



Thank You

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