

29/11/2006

Société Générale Corporate and Investment Banking

Trends in Equity Derivatives and Structured Products

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Agenda

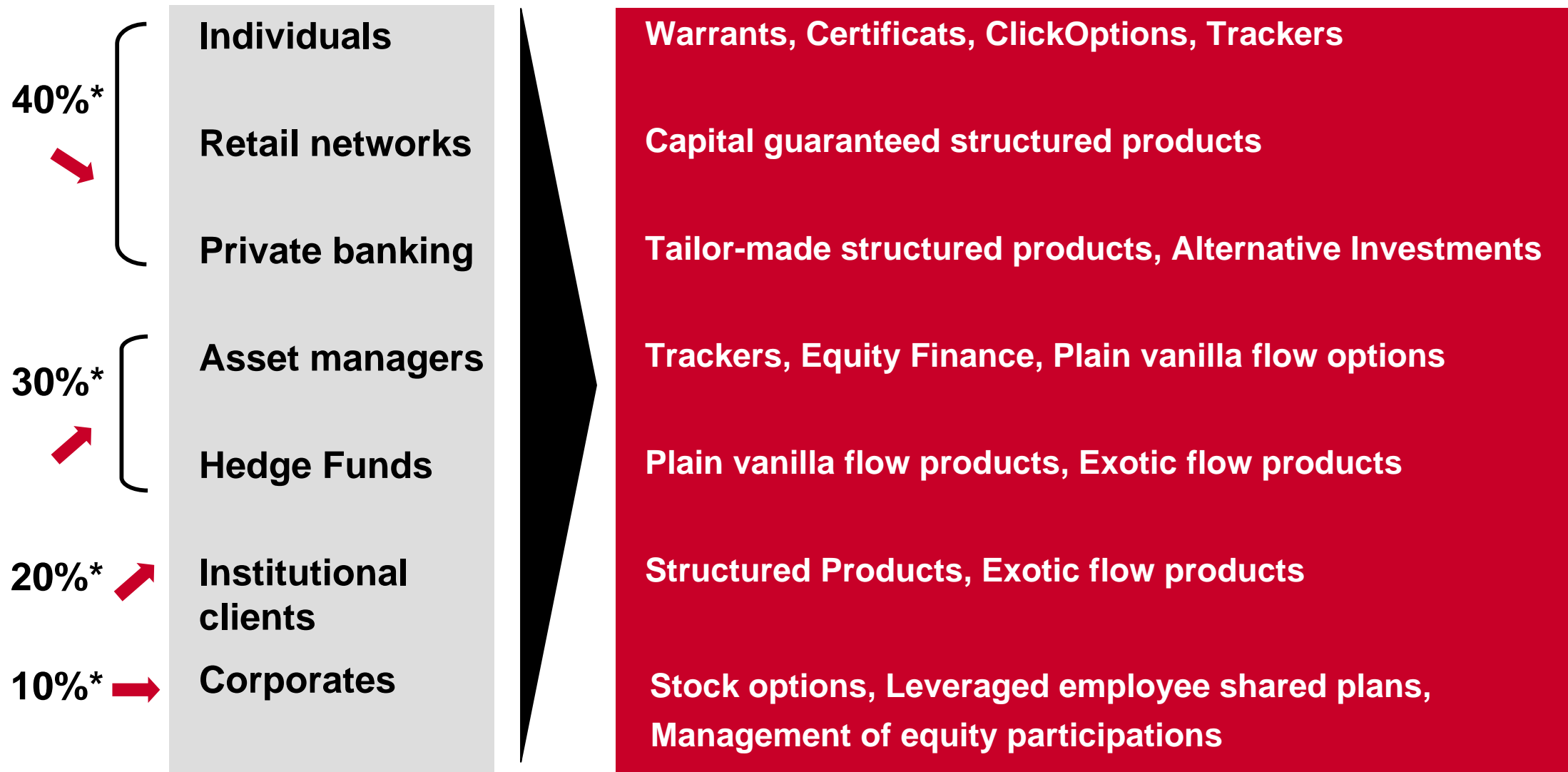
- **Market definition and recent market trends**
- Specifics on SG's Equity Derivatives franchise
- Focus on structured products
- Conclusion

The universe of Equity Derivatives

Structured Products	<ul style="list-style-type: none"> ▶ Shares & indices ▶ Mutual funds 	<ul style="list-style-type: none"> ▶ Hedge funds ▶ Hybrids and multi asset products
Flow & Listed Products	<ul style="list-style-type: none"> ▶ Warrants ▶ Trackers ▶ Certificates and delta one products 	<ul style="list-style-type: none"> ▶ Convertible bonds ▶ Semi-listed structured products
Proprietary trading within banks	<ul style="list-style-type: none"> ▶ Hedge Funds like: long/short equity, CB arbitrage, volatility arbitrage ▶ Quant trading: Index arbitrage, 	<ul style="list-style-type: none"> ▶ Volatility trading ▶ Equity Finance

- ▶ **Does not include prime brokerage and listed derivatives brokerage**

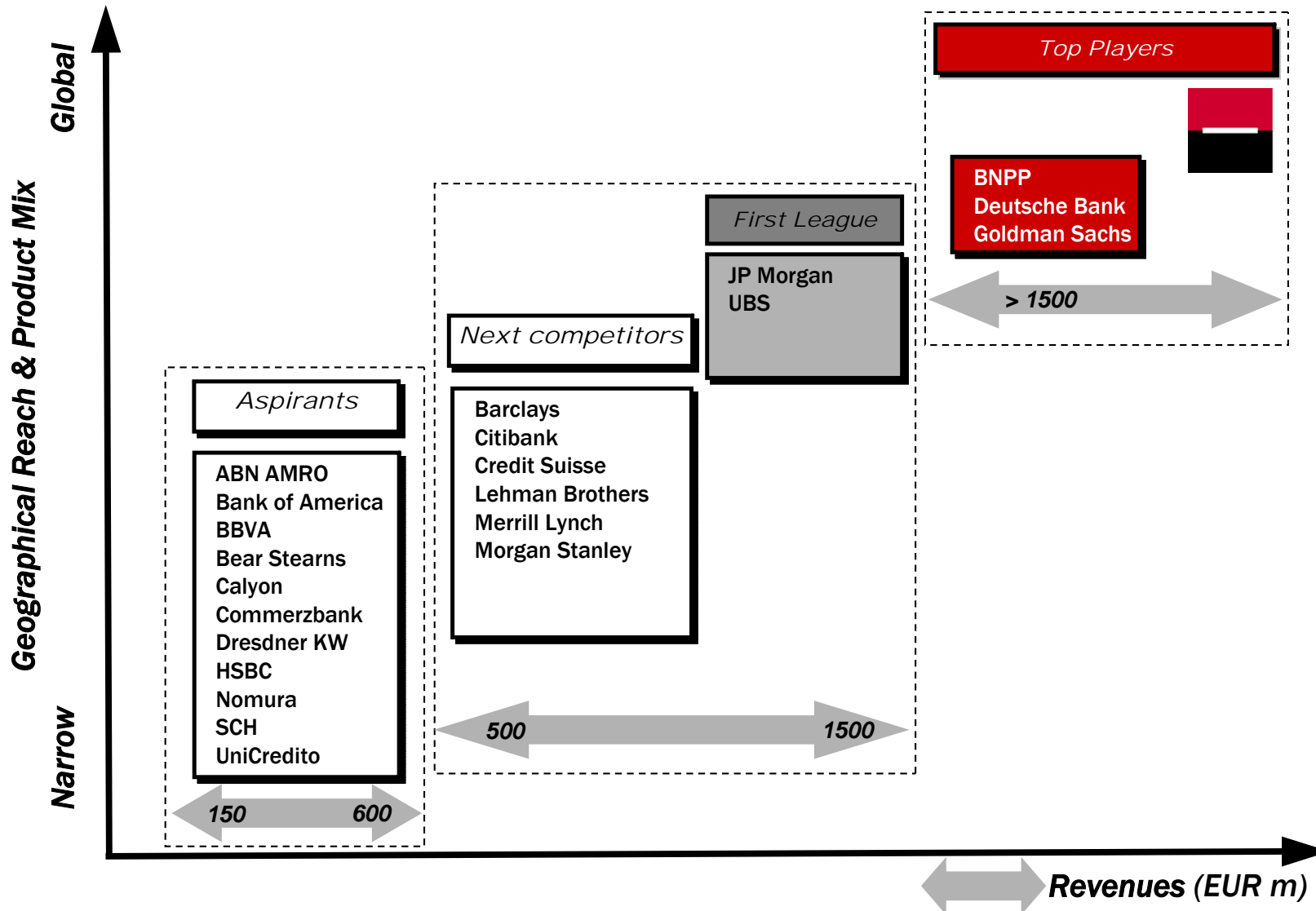
The clients



*SG estimates of industry revenues by client type

Focus on the industry – SG view

■ SG estimates: around EUR 22/25 bn in 2006



Recent market trends

Competition

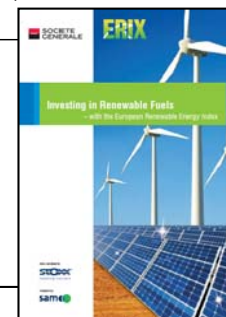
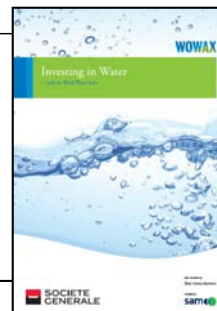
- ▶ **No significant new players (top 10)** due to the high barriers to entry
- ▶ **Fierce competition in retail structured products**

Clients

- ▶ **Emerging countries**
- ▶ **Hedge funds** as clients on ART deals (dividends swap, correlation swap, skew swap...)
- ▶ **Structured products with insurance companies and pension funds**

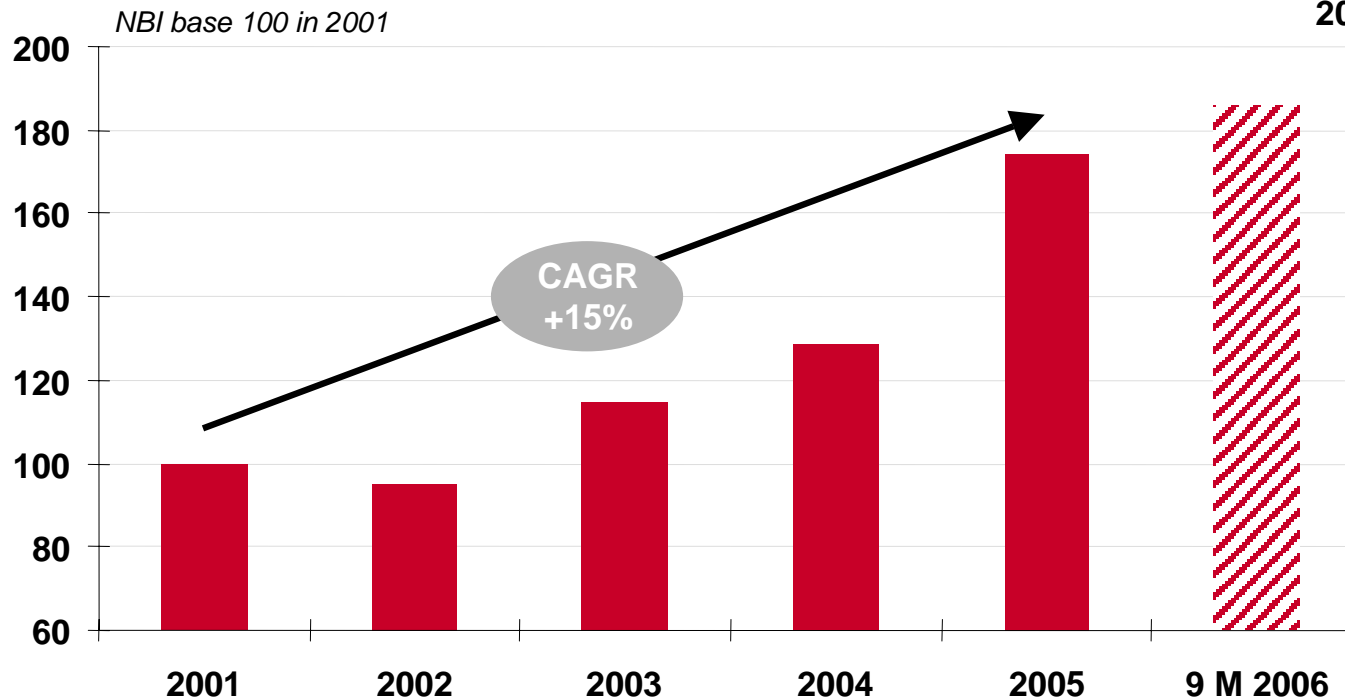
Products

- ▶ **Hybrid products**
- ▶ **Delta one products and trackers**
- ▶ **New underlyings** (alternatives energy/water, private equity, commodities, direct access trade to emerging markets like India, Gulf countries...)



Future growth: maturing phase in 2007-2009

SG Equity Derivatives growth




- ▶ **2006:** strong growth forecasted. Exceptional trading revenues due to favourable market conditions in H1

Future growth

- ▶ Mix of growth level: +5/+20%
- ▶ Geographical growth
- ▶ Growing business with some client segments: Hedge Funds, IFA's, Institutional investors
- ▶ Flow products for assets managers

- ▶ High single digit equity market growth (after +60% in 3 years for EuroStoxx50)
- ▶ Decreasing margins due to the fierce competition in some businesses
- ▶ Some players with amazing pricing

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SG specifics: (1/6) Size of the platform

2650

▶ **Global staff of the platform**

950

▶ **Front office staff. +400 people in 3 years**

600

▶ **> 300 traders and 300 sales** divided among 58 business units

100

▶ **> 100 financial engineers**

200

▶ **> 200 people at Lyxor**

150

▶ **More than 150 people in Asia and in the US. Critical mass achieved**

1600

▶ **Support staff, i.e. 800 dedicated IT, 750 dedicated middle and back office**

100

▶ **> EUR 100 m/year spent on IT expenses of which EUR 30 m on a new IT system**

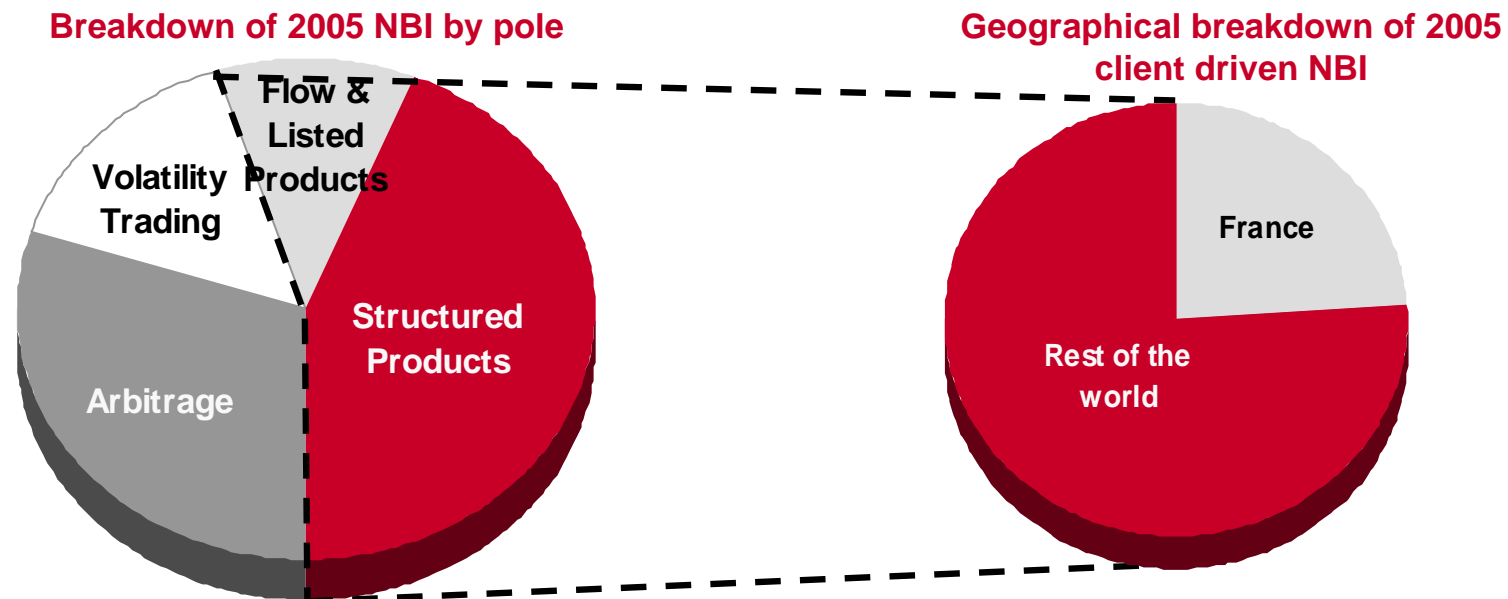
2.7X

▶ **Our CPU capacity for production, 2.7 times larger than in 2005**

Estimated staff figures at end of 2006

SG specifics: (2/6) Balanced sources of revenues

■ A well balanced 4-pole organisation



■ Diversification of the structured products sources of revenues

- ▶ Retail market responsible for less than 35% of our total business
- ▶ Strong activity in alternative investment thanks to Lyxor
- ▶ Deals in more than 64 countries - 13 countries with more than EUR 10 m NBI
- ▶ Growing part of our business with institutional investors

■ Doubling of our trading strategies in 3 years

SG specifics: (3/6) A new world class flow business

■ Wide range of products for our different client types

Clients	Products
Retail clients	Warrants, Trackers, Clickoptions products, Certificats
Private banks	Taylor made structured products, Alternative investment, OTC and listed options, convertibles bonds, synthetic convertibles
Assets Managers	Trackers, Equity Finance, plain vanilla flow options
Hedge funds	Delta one products, dividend swaps, exotic flow products

■ Sharp increase in revenues

- ▶ Round the clock service: Americas, Europe & Asia
- ▶ >100 dedicated sales

■ Key product leaderships on the retail side

- ▶ No.1 worldwide in warrants (18.5% market share)
- ▶ No.2 in Europe on ETFs (25% market share). 53 ETF of which 34 launched in 2006

■ Financial community recognition. In June 2006, voted Number 2 in the prestigious Extel Survey of Pan-European asset managers for:

- ▶ Equity Derivatives Flow Sales
- ▶ Equity Derivatives Flow Trading & Execution
- ▶ Equity Derivatives Flow Research



SG specifics: (4/6) Lyxor

- Lyxor is SG CIB's asset management company dedicated to Equity Derivatives. At end October, Lyxor had EUR 58.7 bn AuM
- Lyxor is well positioned in the 3 fastest growing asset management segments:



Structured Funds

- ▶ Lyxor enables SG to **structure funds in every part of the world in compliance with the local regulatory environment**

EUR 17.9 bn AuM

Alternative investment

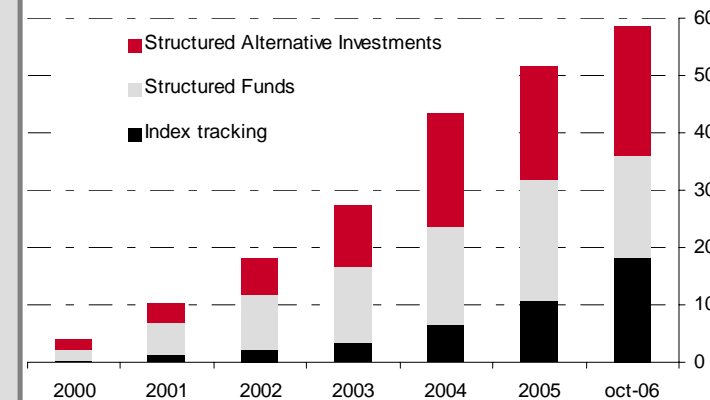
- ▶ Lyxor provides all types of **solutions for alternative structured investment** via its managed account platform

EUR 22.7 bn AuM

ETF

- ▶ **53 Lyxor ETFs** (equities, bonds, commodities)

EUR 18.1 bn AuM



Figures at end of October 2006

- **Lyxor has developed many synergies** with the structured products teams of the SG Equity Derivatives platform
- **Lyxor is unique:** more than 200 people, 167 managed accounts and 1659 investible units of external hedge funds. Few successful initiatives by competitors

SG specifics: (5/6) Innovation

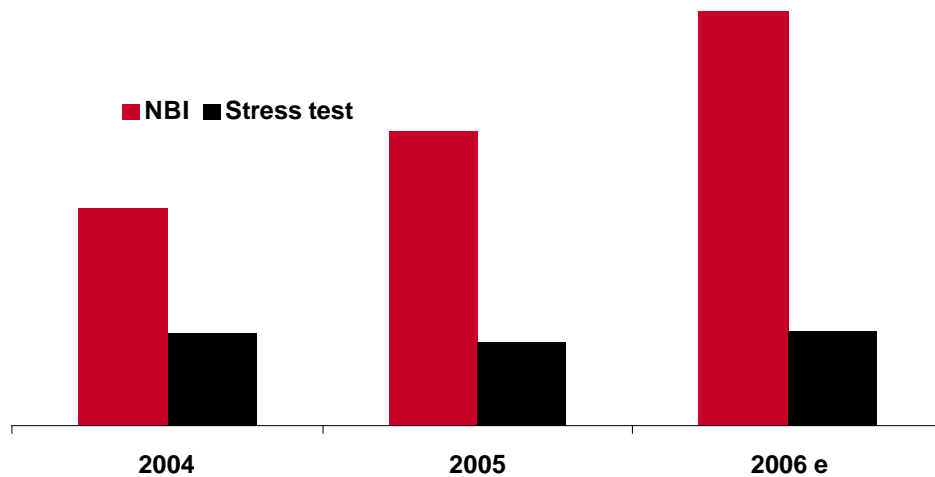
- **The largest financial engineering team in the industry:** more than 100 people working side by side with our sales teams

Main SG innovations

1989	First warrants in Europe	
1995	Structured products based on mutual funds and Hedge Funds	
1998	First correlation products (Everest, Himalaya, Altiplano,...)	Creation of Lyxor and first managed accounts
1999	First ART deals and first correlation hedge	
2001	First tracker on CAC 40	
2004	Bond/Gold/Inflation index trackers in Europe	Explosive growth of correlation swap with HF (first deal in 2003)
2005	Dividend swap	
2006	Sharpe derivative	

SG specifics: (6/6) Sound risk management & solid proprietary trading

■ A strong "return" on risk



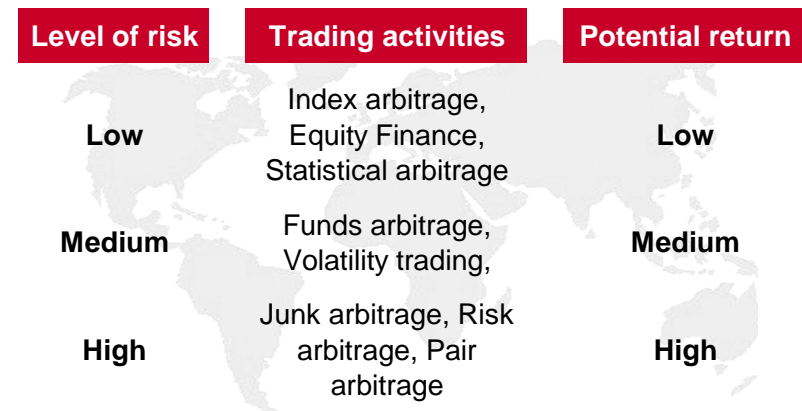
■ Market risk under control

- ▶ Risk diversification
- ▶ Spread of activities reduces earnings volatility and increases netting of risks (58 business units)
- ▶ A VaR level at EUR 28 m Q3 average VaR 99%

■ An impressive track record

- ▶ Only 2 negative monthly P&Ls in the past 10 years
- ▶ No negative quarterly GOI in past 15 years despite market crises

■ Diversification in multiple activities with varying levels of risk and regions (US/Asia/Europe)



■ 16 trading teams worldwide & 30 styles in production

■ Impressive performance of our hedge fund like activities

As at 31th Oct. 2006 Source SG

Style	Perf.	Benchmark	Perf.	Delta
Event Driven Strategies	25,8%	HFR Event Driven	7,4%	18,4%
Equity Hedge - Stat Arb	17,7%	HFR Equity Hedge	5,6%	12,1%
CB Credit Arbitrage	10,8%	HFR Credit Arbitrage	7,5%	3,3%
Market Neutral - Fund Arb	9,0%	HFR Market Neutral	4,4%	4,6%
Fund of Hedge Funds	8,8%	HFR Fund of Fund Index	5,9%	2,9%
CTA	0,4%	BTOP50 CTA Index	1,7%	-1,3%

Benefits of being the largest Equity Derivatives platform

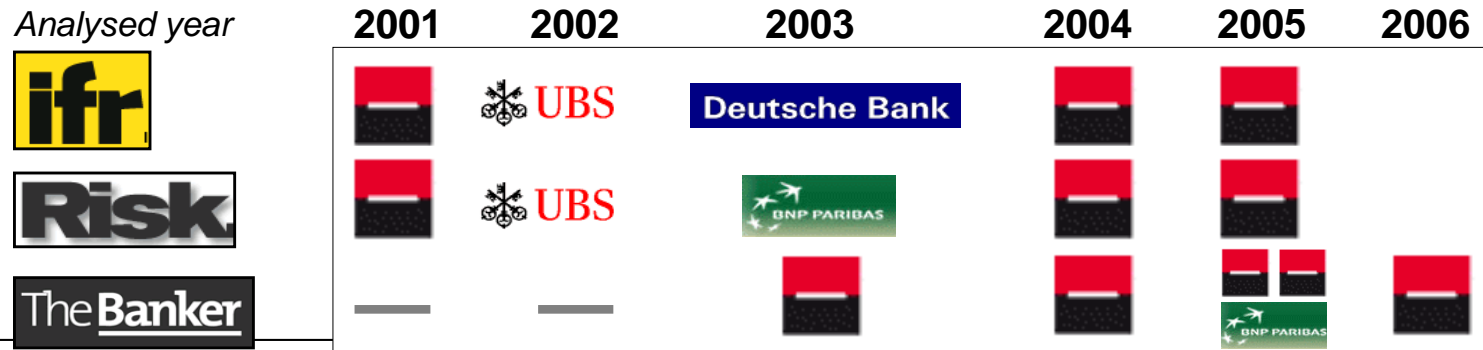
- **A large sales team**
 - ▶ Extensive coverage capacity (Flow, HF, retail networks...)
 - ▶ Large and balanced client deals
 - ▶ First player in new countries


- **Huge investment capacity**
 - ▶ IT investment
 - ▶ After-sales service on secondary market
 - ▶ Innovation, R&D, emerging/new business

- **Human resources**
 - ▶ Ability to attract the best people
 - ▶ Ability to retain our staff by offering challenge and growth

- **Risk management capacity**
 - ▶ Ability to process large transactions

- **Industry awards**
 - ▶ Financial community & client recognition



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Structured products: Why such a large market?

An extensive combination of products

Underlyings

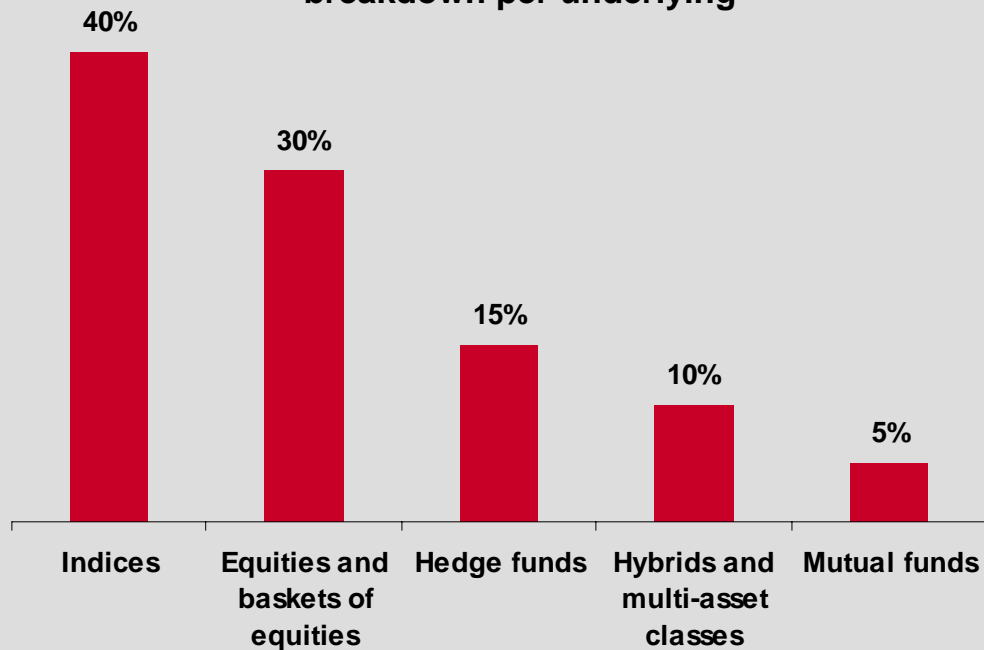


Wrapper



Pay-off

Estimates of global industry production - breakdown per underlying



Source : RiskBooks, Structuredretailproducts.com

Bonds, notes

Funds

Swaps

Life insurance contracts

...

Capital protection / leverage

Long or short exposure

Income/growth

Equity / bond / hybrid profile

Maturity

...

Clients: Overview and trends (1/4) - Introduction

Size & growth

- ▶ >EUR 250 bn nominal traded annually
- ▶ 15% annual growth

Source : RiskBooks, Structuredretailproducts.com

Growing segments

- ▶ **By client:** biggest growth is seen in historically smallest client segment:

Type of clients	Growth
(1) Retail distribution	+
(2) Institutional investors	++
(3) Hedge funds	++

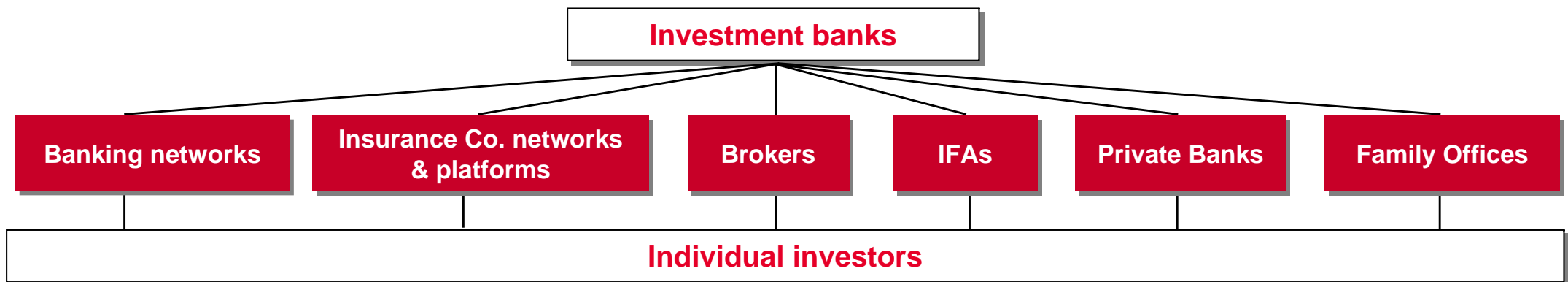
- ▶ **By country:** new markets opening. North America, India, China, ... more than 50% growth compared to 10% in Europe

Margins

- ▶ Decreasing margins due to fierce competition on retail structured products, stable on others segments

Clients: Overview and trends (2/4) – Retail market

■ A large scope of distributors



■ Mainly capital guaranteed products

Risk aversion

remains a strong characteristic of retail market despite 3 years of bull markets

Client confidence

drives client relationship managers

▶ 85% of structured products are capital guaranteed.

- In some countries, capital guaranteed products reach 95%:
 - Italy
 - Poland
 - Spain
 - Denmark
 - Portugal

**Sources: RiskBooks*

Clients: Overview and trends (3/4) – Institutional investors

Financial context for institutional investors

- ▶ In all countries, bond yields are not attractive
- ▶ Convertible bonds are progressively disappearing
- ▶ Funding ratio of pension funds is deteriorating

Positive trends of structured products

- ▶ They are not “black box” any more
- ▶ Recent academic studies in Europe reinforce their credibility
 - According to Edhec and St Gallen studies, significant increase of the risk adjusted return with the inclusion of structured strategies in an equity + bond allocation

①
Expansion
of structured
products in ALM

②
Structured products -
now a real asset
class

■ Exemples

An Italian institutional need: enhance the yield on a bond portfolio with the best of equity and bond markets



Alpha pays, as soon as the equity markets rise moderately, an annual coupon equal to the max of 5%, CMS or any rise in equity markets

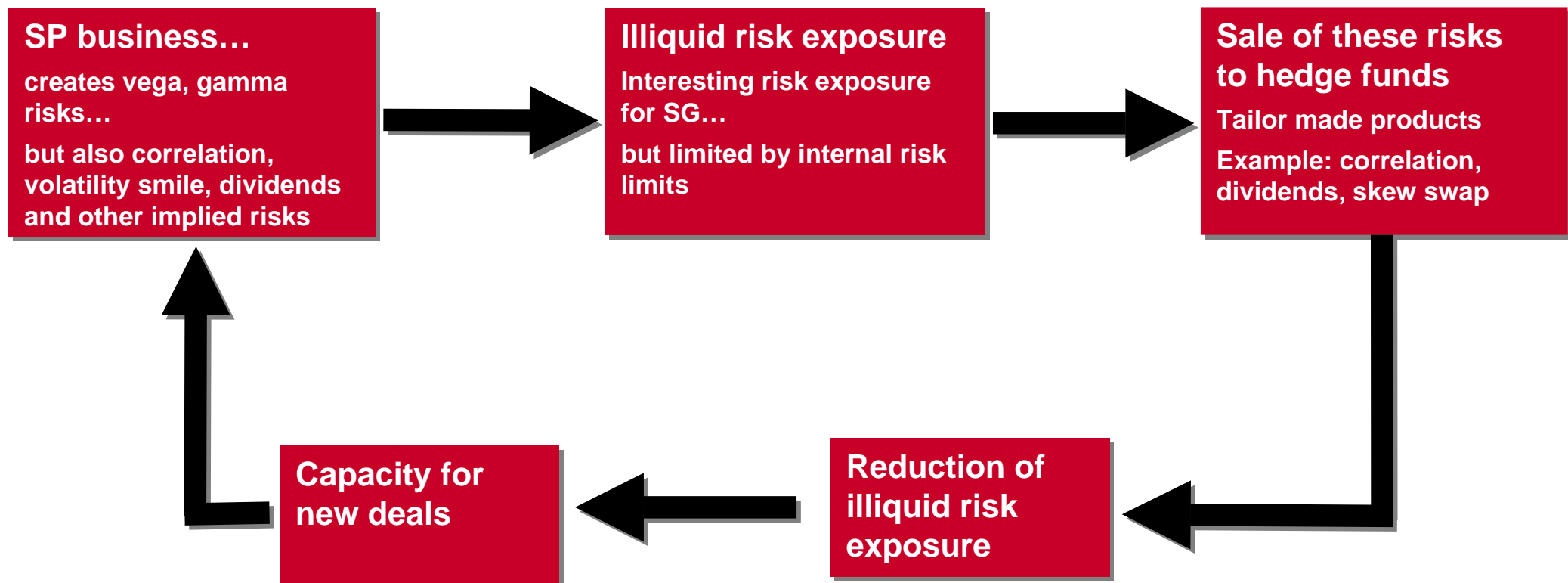
A Swiss life insurance Co. need: a short term globally diversified investment providing absolute returns



Palladium captures the dispersion of a basket by being systematically long on the best performing stocks and short the worst performing stocks.

Clients: Overview and trends (4/4) – Hedge Funds

- Interest of hedge funds in new sources of returns: exotic risks
- A promising virtuous cycle: ART (Alternative Risk Transfer)



Performances: An attractive alternative to equity markets

- Example: Société Générale network product range
- The aim is to beat the risk-return ratio of equity markets

Product (issue date)	IRR		Annualised Vol		Sharpe ratio	
	SP	DJ Euro Stoxx 50	SP	DJ Euro Stoxx 50	SP	DJ Euro Stoxx 50
SOGETRIUM 2 GARANTI ASS (Nov 01)	11,5%	1,6%	10,7%	25,1%	0,88	-0,02
SOGETOP 4 GAR ANTI ASS (Dec 02)	4,6%	11,8%	9,5%	19,9%	0,28	0,49
SOGEPRIME GARANTIE ASS (March 03)	11,9%	19,7%	8,7%	17,0%	1,13	1,05
SOGELYRE 4 GARANTI ASS (June 04)	7,8%	17,5%	4,8%	14,5%	1,22	1,07
MURANO DIVERS. ACTIONS (Feb 06)	11,6%	7,4%	12,9%	17,8%	0,74	0,30

- ▶ Performances can be decorrelated from equity markets
- ▶ Good risk-return



Optimising risk-return ratio

Non-linear payoff

=> Ability to customise solutions based on investor's market outlook

Long bias of the delta on its underlying

=> Systematically optimised exposure

Structured products are significantly different from an equity + bond allocation

➔ An excellent diversification tool to increase efficient frontiers

■ EDHEC Research Centre: "SP improve the expected risk-return of a diversified portfolio"

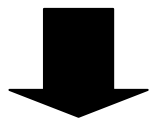
SP	Stocks	Bonds	Return / CVaR (95%)
0%	52%	48%	2.5
5%	47%	48%	3.0
10%	43%	47%	4.0
20%	37%	43%	13.4

Table: Changes in the values of the risk-return ratio for the optimal allocation of a balanced portfolio

- ▶ **Model:** stochastic diffusion of equities using mean reverting process – 2500 scenarios
- ▶ **SP:** call on max
- ▶ **CVaR (95%)** summarises the return distribution in the 5% worst cases
- ▶ Optimised allocation based on Markowitz's portfolio optimisation framework

Structured products provide new areas of investment

Competing with equity investment



Call on max profile

- 8-year investment, linked to an equity index
- 0% capital guarantee
- Captures the highest level of the index if index is above its initial value

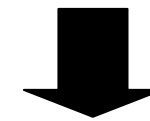
Providing the best allocation



Best of 3 profiles

- 8-year investment, linked to 3 investment profiles: Defensive, Balanced and Dynamic
- 100% capital guarantee
- Provides return of best-performing profile

Competing with annuities



Yield enhancement

- 8-year investment
- Conditional capital guarantee
- Provides guaranteed coupons of 7.5% during the first 3 years. Potential capital guarantee + 7.5% coupon the 4 following years if basket's performance doesn't fall substantially

Structured products on Hedge Funds: A diversified business mix

Capital guaranteed products linked to hedge fund portfolios

- ▶ **Capital appreciation products:** provide exposure to hedge funds in a lower risk environment
- ▶ **Regular income products:** leveraging on the stability of diversified hedge fund portfolio performances to create regular income

Leveraged products on Fund of Hedge Funds

- ▶ **EQD platform provides the leverage:**
 - Investor provides 100 and receives 200 from the bank.
 - 300 is invested in the FoHF
- ▶ **Investor benefits from a leverage of 3x:**
 - At any time, its performance, positive or negative, is multiplied by 3.

Access to various types of underlying hedge fund assets

- ▶ **Funds of funds**
- ▶ **Dedicated portfolios of hedge funds** and/or Lyxor's **managed accounts**
- ▶ **Investible hedge fund indices** (MSCI Hedge Invest Index and sub-strategy indices)

■ This market shows impressive innovation. In 2006: The Sharpe derivative

Structured Products on Sharpe ratio:

Excellent source of stable returns

Alternative investment:

The asset class characterised by the best Sharpe ratios

▶ Latest Innovation : the Sharpe+

- 8 years 100% guaranteed
- Annual coupon: 4x The Sharpe Ratio of a basket of 4 HF





Conclusion

- ▶ **Equity derivatives** universe is very **diversified**
- ▶ The **balance** between proprietary trading, flow business and structured products will be key
- ▶ Growth will be **strong** but very likely to be **lower** than during the 5 previous years
- ▶ Barriers to entry will **limit the growth** of any new entrants

- ▶ Structured products have become an **asset class** in their own right
- ▶ The expertise in **exotic risks** will be crucial
- ▶ **Structured products** will experience **growth**:
 - New markets: US and emerging countries
 - Clients: IFA's, Hedge Funds and Assets Managers
 - Products: innovation will continue