

16:15 – 17:30 - STREAM 2 - Marly

“Presentation of the New Initiative to Evaluate and Manage Weather Variations”



METEO FRANCE

Toujours un temps d'avance

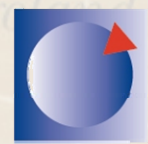


NYSE EuronextSM

**PARIS
EUROPLACE**

FINANCIAL FORUM

Pierre Etienne BISCH
Chairman & CEO



METEO FRANCE

Toujours un temps d'avance

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Vincent REMAY
Director, Deputy CEO Senior Advisor
Product Development



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NYSE Euronext in brief

NYSE Euronext is the world's largest and most liquid exchange group, offering the broadest array of financial products and services

- 6 countries
- Family of exchanges: NYSE, Euronext, Liffe, NYSE Arca Options
- A range of products & services:
 - Cash equities, Options & derivatives, ETF, Bonds
 - Market data, commercial technology solutions
- 4,000 listed companies ► € 103 billion (as of 31/12/2007)
- Part of the S&P 500 index and S&P 100 index

The attractiveness of PARIS Financial Center

- New areas of expertise
 - Carbon finance
 - Weather finance
- Nyse Euronext as a major player

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PARIS
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FINANCIAL FORUM



NYSE EuronextSM

60%

35%



METNEXT

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Paris Europlace 2008

Is it Time To Manage Weather Risks?

your hub to euroland

Jean-Louis BERTRAND
ESSCA, Banking and Finance Chair

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Weather Risks: Climate is Everywhere

- Global Warming: Greenhouse Gas Emissions
 - IPCC(1)/Climate Group/WRMA(2)
 - Kyoto: 2007-2012
 - CO2, CDM, CER, etc. (Carbon Finance)
- Natural Disasters: Hurricanes, Tornados, Flooding, Droughts
 - Sir Nicholas Stern's Report/WRMA
 - Insurance Claims
 - CAT Bonds
- **Meteorological risks (« Weather Risks »)**
 - What are they?
 - Financial implications?
 - Who is concerned
 - Management tools and techniques?

Weather Risks: What are They?

- “Weather risks” are **non-catastrophic** weather events (deviations from normal conditions) which have a financial impact on company sales, cash-flows, profit or shareholder value.
- Weather risks relate to **weather indices** (average temperature, cumulated snowfall, wind speed, etc.)

Weather Risks Globally Affect...

- between 20 and 30% of industrial production in Europe and 35% in the United States



- 1/3 of the US GDP



United States of America
Department of Commerce

- a cumulated turnover of \$1 000 billions in the US , \$1 250 in Europe and \$700 in Japan

The New York Times

- 60 to 70% of the GNP of industrialised countries



- 80% of US Companies



George W. Daley
Forme Minister of Commerce
under B. Clinton's administration

Weather Risks and Corporate Earnings

ENERGY SECTOR EARNINGS REPORTS



\$0.08/share



\$0.02/share

*"The company said the decline resulted largely from reduced power prices and lower volumes due to **mild winter weather**"*

- Wall Street Journal

ATMOS

(\$0.20)/share



*"The **weather impact alone** decreased Atmos' earnings per share by \$0.20"*

- CNBC Meteorologist

Source: CME, Wall Street Journal, CNBC, Company quarterly reports

Weather Risks and Corporate Earnings

RETAIL SECTOR EARNINGS REPORTS



(\$0.3)/share



Lowe's president Robert Niblock blamed "**adverse weather**" in many parts of the country for softening sales in the period, saying the **poor weather** "impacted consumers' ability to initiate typical late spring and early summer projects."



(\$0.6)/share

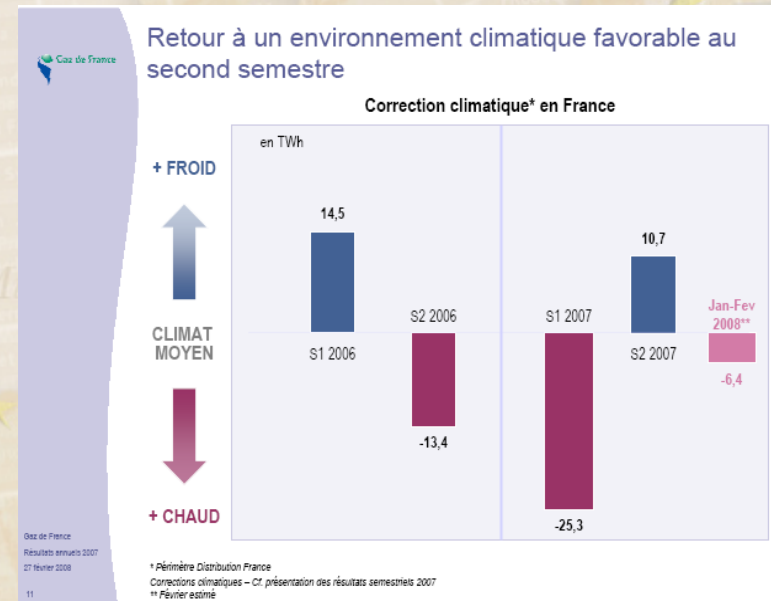
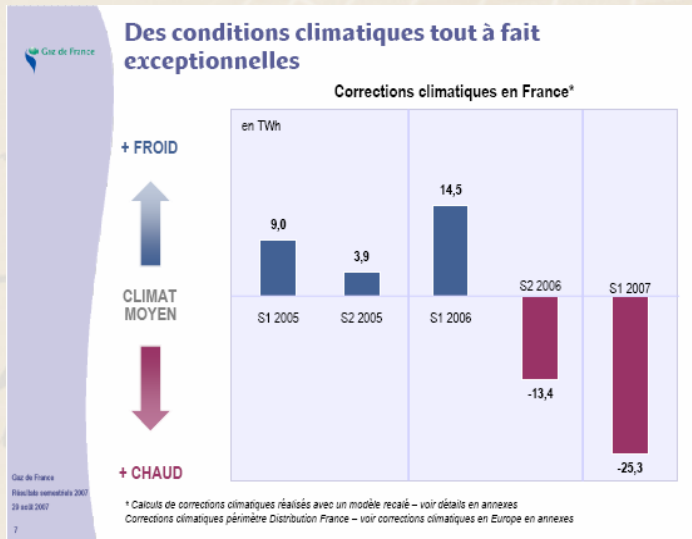


"Sears Canada said the **cooler weather** this summer hit its bottom line in the second quarter."

Source: CME, Wall Street Journal, CNBC, Company quarterly reports

Weather Risks and Corporate Earnings

CLOSER TO HOME...



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Weather Risks and Corporate Results



« Globally in Europe, our results benefitted from favourable **weather conditions** during the first half of the summer, followed by an **unusually rainy period** in September »

And even year after year



Annual Reports:

2002: « unusual **mild** autumn »

2004: « **wet** summer »

2005: « **cool** spring »

...

Weather Risks and Corporate Annual Reports

Entreprise	Citation	Source
Arcelor	« le marché de la construction a souffert des mauvaises conditions climatiques du début de l'année et de la morosité du marché en général »	Rapport Annuel 2003
Arkopharma	« Le chiffre d'affaires est en recul de 1,7 % au premier trimestre 2005. Ce recul s'explique en partie par la moindre demande due à des conditions climatiques difficiles de ce début d'année »	19 avril 2005, CA 1 ^{er} trimestre 2005
Colas		avril
Damartex	« La France a subi, entre autres, les mauvaises conditions climatiques de l'été 2004 »	12/06
Elior		de 29 juillet 2004
Evi	« Le groupe a constaté des conséquences négatives liées à des conditions climatiques défavorables »	02
Gaz de France		15 mai 2006
Groupe Casino		2003, CA 3 ^{ème}
Lafarge		
Michelin	« En effet, c'est la conséquence de conditions climatiques défavorables »	2002
Paris Rhin Rhône	« Le rapport rappelle que les conditions climatiques en Europe ont été particulièrement défavorables en 2004, avec un hiver tardif avec neige et glace jusqu'à fin mars et une sécheresse prolongée en été. Cela a conduit à réglementer ou interdire l'arrosage dès la fin juin »	
PPR	« La remarquable performance de toutes nos enseignes au mois de septembre a plus que compensé l'atonie relative constatée le bimestre précédent, notamment en raison des conditions climatiques. »	16 octobre 2003
Paris Rhin Rhône	« Outre la poursuite d'une conjoncture morose, la baisse du trafic au 4 ^{ème} trimestre 2005 s'explique principalement par les conditions climatiques difficiles en fin d'année »	19 janvier 2006 CA du 4 ^{ème} trimestre 2005
Saint-Gobain	« Quant aux volumes de vente, ils reculent dans les activités du Groupe liées au marché européen de la construction, en raison de conditions climatiques défavorables en Europe de l'Ouest et de l'Est »,	Rapport annuel 2005
Trigano	« En revanche, les conditions climatiques défavorables en avril et mai ont pesé sur les ventes de matériel de camping. Elles sont en recul de 6,3%. De même, le chiffre d'affaires relatif aux équipements de jardin chute de 17,5% sur la période. »	14 août 2006, CA 9 premiers mois au 31 mai 2006

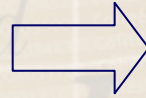
Weather Risks...Management

So WHAT?

- **What** if weather-related risks could be quantified and even hedged?
- **What** if “Act of God” was no longer a sufficient excuse?...
- **What** if ignoring weather was just in fact “poor management”?

Weather Risks...Management

Traditional
Financial Risk
Management
Cycle



1. What is the influence of the Weather on the Business?
2. How should you integrate Weather variables in the Business Plan? (**Governance** / Managerial response)
3. What if the risks are too high?(**Financial hedging** of Weather risks)

Weather Risks...Management

1. Identification and Quantification of weather risks

2. Corporate Governance?
3. Weather market and Hedging Instruments?

- Traditional **Financial risks** are easy to identify and quantify:

- If the US Dollar goes up 1% against the Euro, invoices in US dollar go up 1%...
- If floating rates go up 50 bp, the floating interest expenses moves up 50 bp...

- A **preliminary study** is required...

- To determine which weather variables are influential
- to evaluate and isolate the financial consequences of good or adverse weather conditions

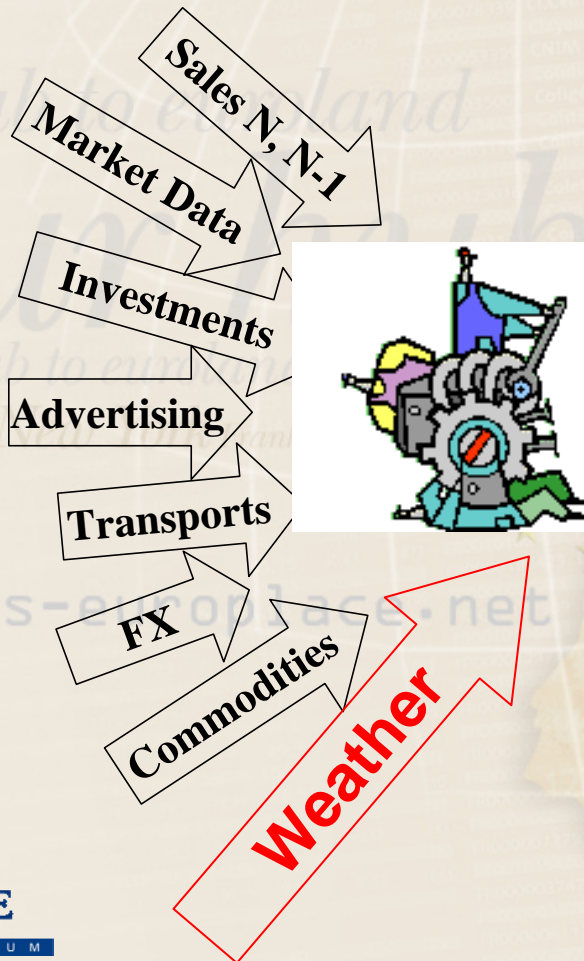
- Such **preliminary study** can be run:

- on a given product or product line (eg: Diet Coke or Soft drinks)
- on a given sector or company (eg: beverages or Coca-Cola Company)

Weather Risks...Management

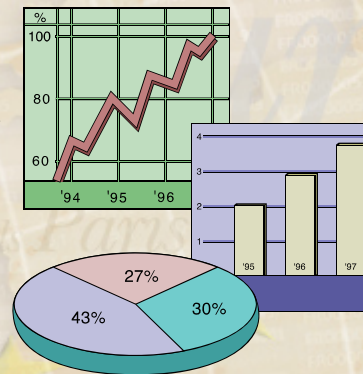
1. Identification and Quantification of weather risks
2. Corporate Governance?
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EXPLANATORY VARIABLES



Planning the Business

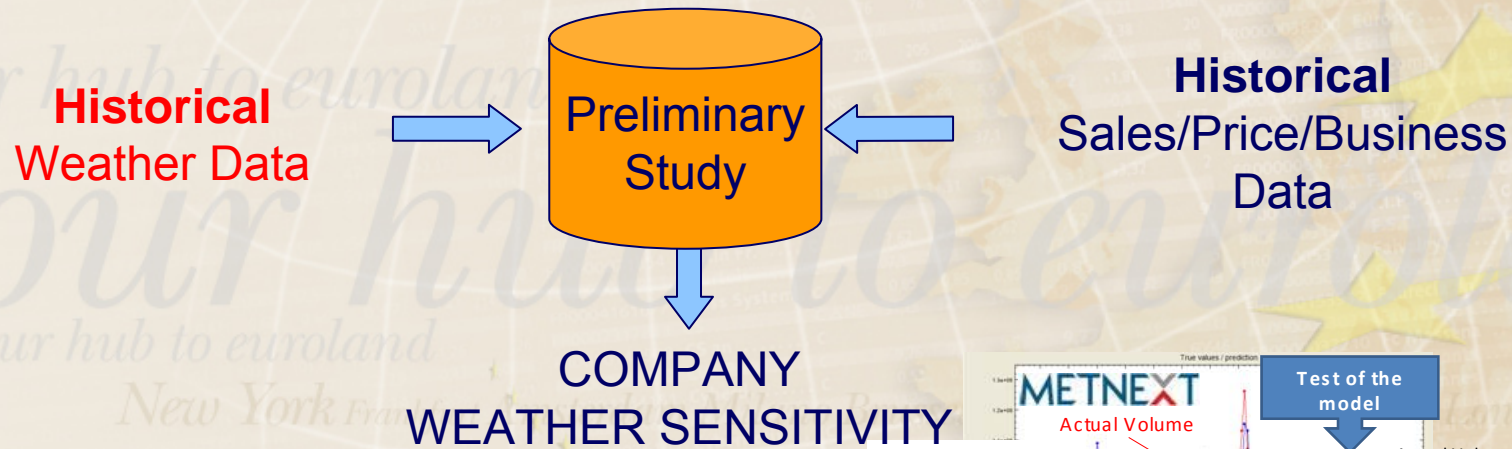
Budget
Forecast



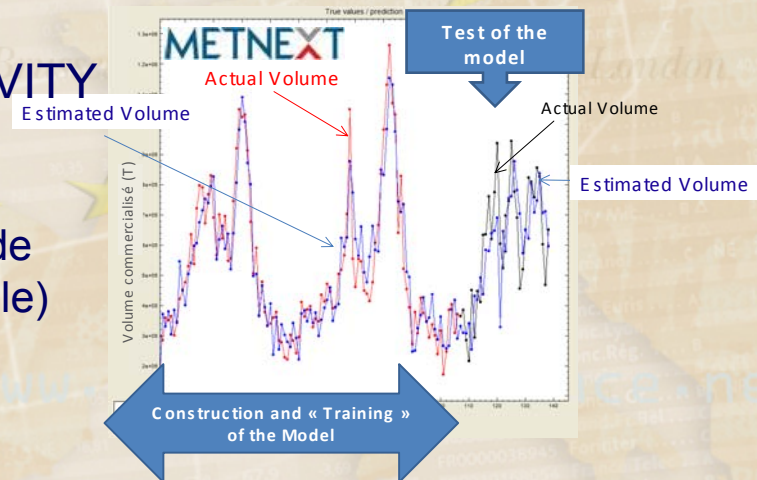
Weather Risks...Management

1. Identification and Quantification of weather risks
2. Corporate Governance?
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Step 1: Look-back analysis



1. Construction of the model (« learning » file)
2. Testing of the model in « forecasting » mode and comparison with actual data (« test » file)
3. Connection to company's ERM



Weather Risks...Management

1. Identification and Quantification of weather risks
2. Corporate Governance?
3. Weather market and Hedging Instruments?



Temperature rises...beers go down! ...if temperature moves from 30°C to 20°C, beer consumption falls by almost 50%!



...90% of change in electricity consumption is explained by changes in temperature alone



...textile sales are greatly influenced by temperature in spring and fall



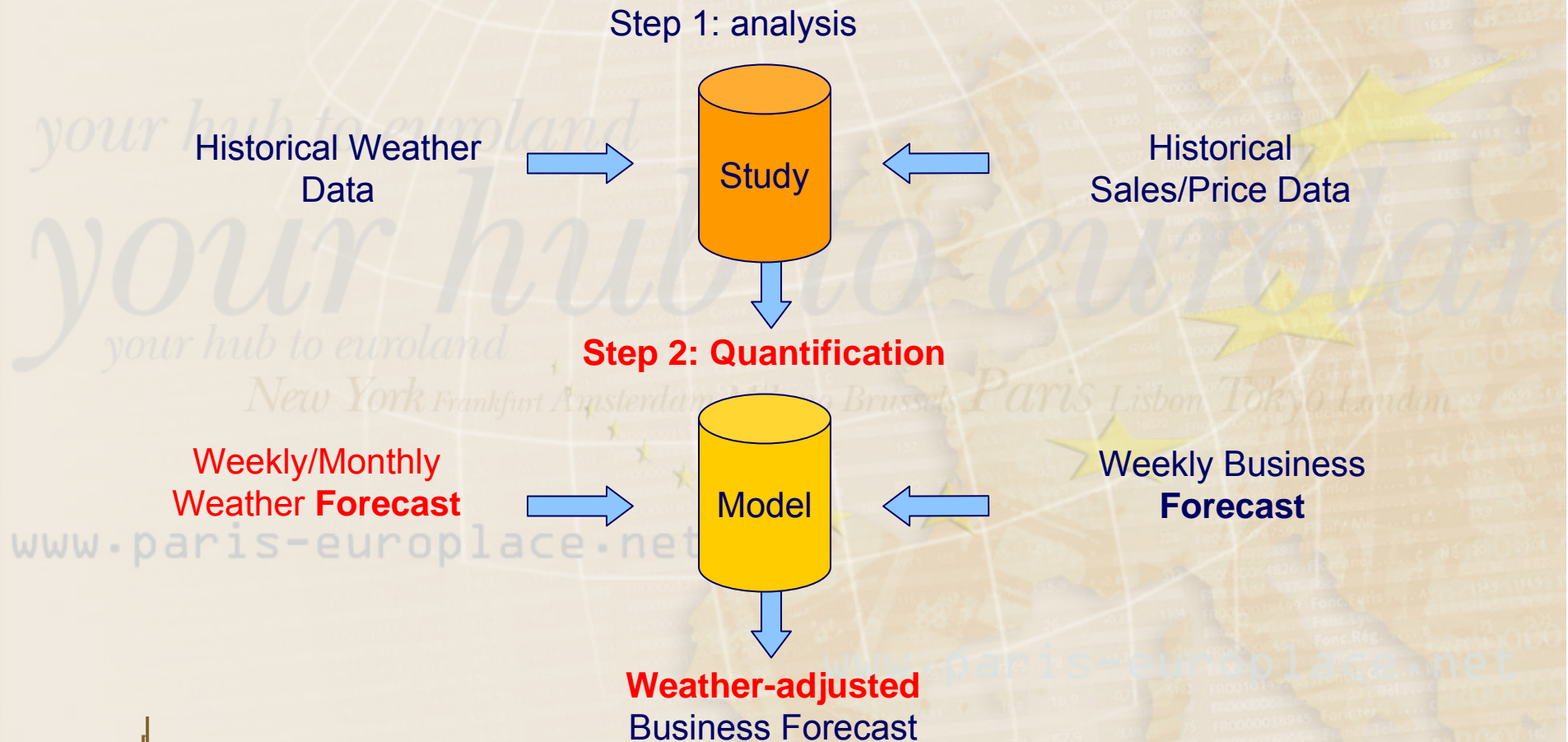
...Food retail: ice-cream, coffee...



...Tourism: not enough snow and no more skiing...

Weather Risks...Management

1. Identification and Quantification of weather risks
2. Corporate Governance?
3. Weather market and Hedging Instruments?



Weather Risks...Management

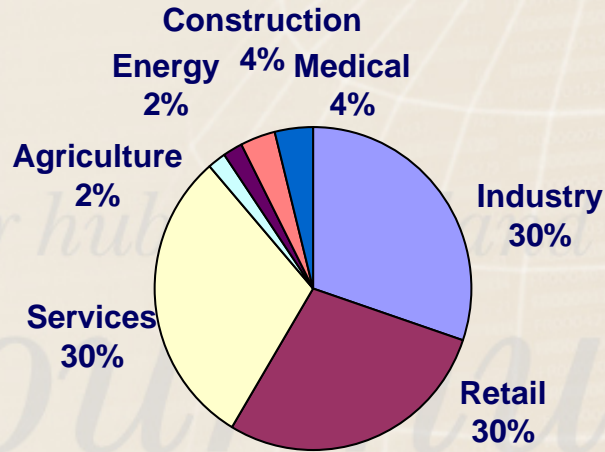
1. Identification and Quantification of weather risks
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Weather-adjusted Business Forecasts...

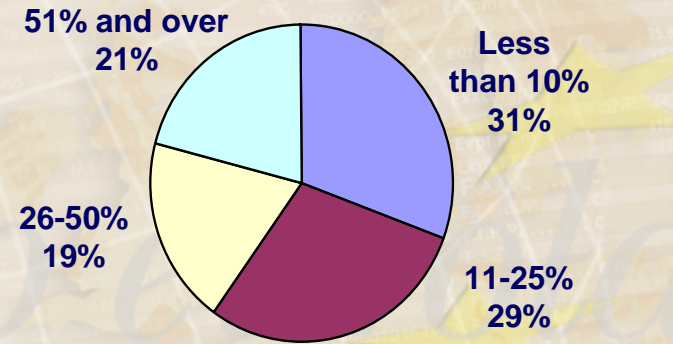
- enable better business **analysis and planning** tool for Supply chain, Marketing, HR and Finance management.
- isolate the effect of weather on sales, cash-flows or earnings
- improve sales and production planning (eg: beverage, fresh products)
- adapt work force requirements (eg: tourism)
- anticipate volume and price movements (eg: food retail)
- optimise the launch of advertising campaigns (eg: retail, tourism, etc.)

What Are Corporates Doing?

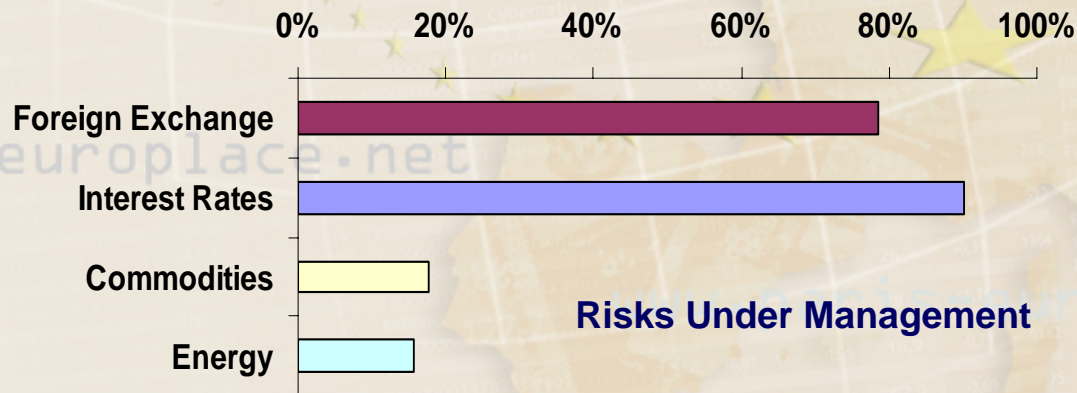
A panel of 53 companies, members of AFTE, ATEB and ATEL



Business Sector



Risk Management Treasury Workload

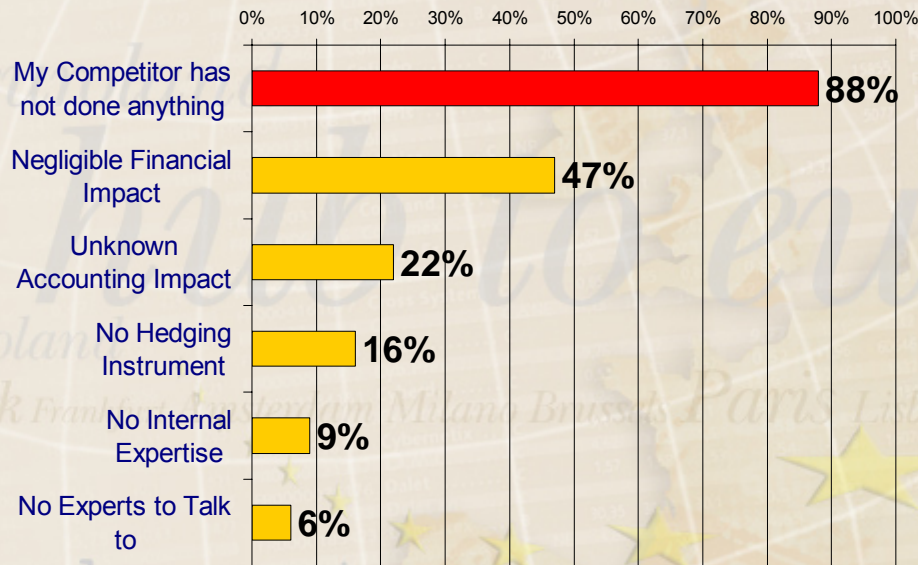


Risks Under Management

What Are Corporates Doing?

Question

Question	YES	NO
Climate changes have an impact on your business activities	67%	33%
Did you study how the weather financially impacts your business activities?	21%	79%
Do you plan to study how the weather financially impacts your company?	15%	85%



3 out of 5 companies which studied their weather exposure concluded that **weather had a greater financial impact than FX and interest rates combined**

Weather Risks...Should You Ignore or Hedge?

1. Identification and Quantification of weather risks
2. **Corporate Governance**
3. Weather market and Hedging Instruments?

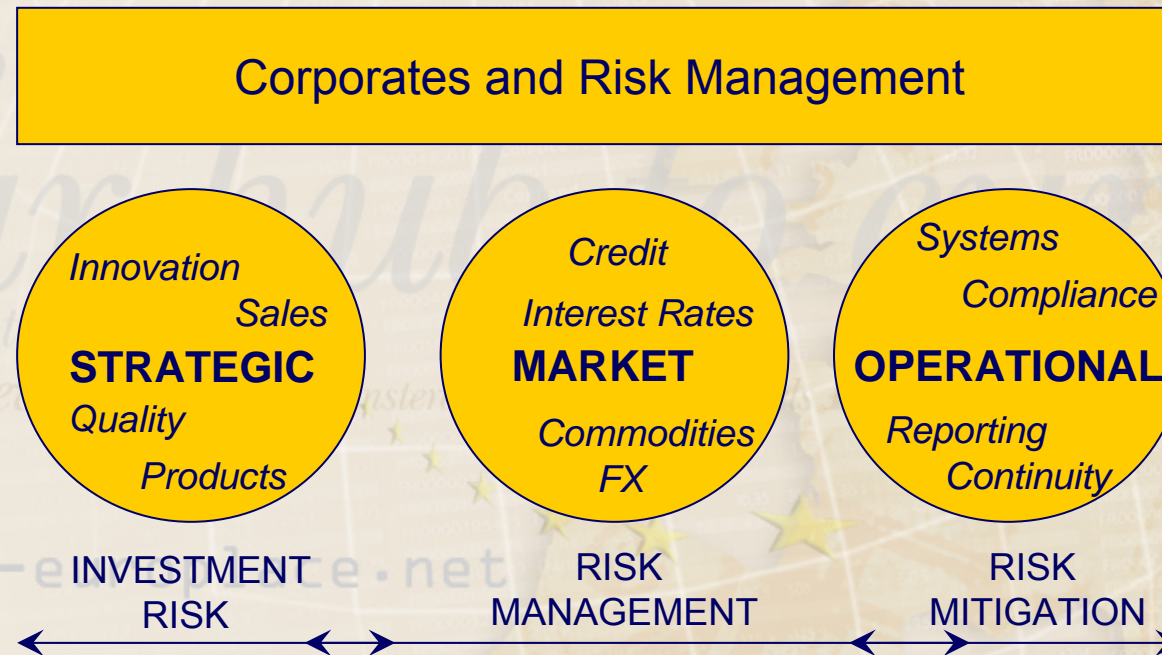
Corporate Risk Management is about mitigating or transferring **non-strategic risks** out of the business for which shareholders **do not expect any remuneration**... Is weather strategic?

What do Investors, Analysts, Rating Agencies, Banks, Auditors know about a given firm's weather exposure?

- Is Coca-Cola a « soft drink » risk...or a « weather » risk?
- Is GDF « energy » or « weather »?
- Is Pierre & Vacances « leisure » or « weather »?
- ...

Weather Risks...Should You Ignore or Hedge?

1. Identification and Quantification of weather risks
2. **Corporate Governance**
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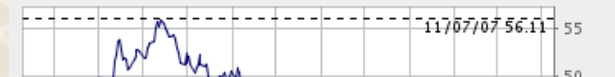
Weather Risks?

Weather Risk Management: Ignore or not?

DANONE - Historic chart (EUR)



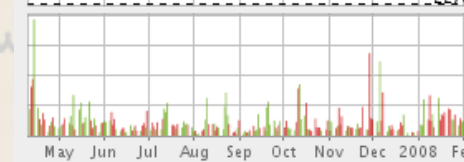
CLUB MEDITERRANEE - Historic chart (EUR)



What do Investors, Analysts, Rating Agencies, Banks, Auditors know about your company's weather exposure?



BONDUELLE - Historic chart (EUR)



Price rising Price falling

CAC Food Producers

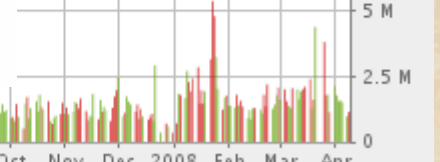
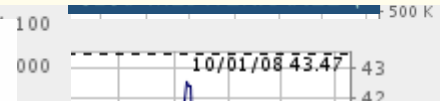
CAC Leisure Goods



CAC Utilities

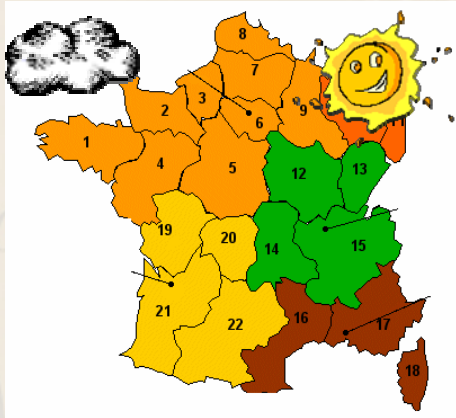
CAC Beverages

CAC Oil and Gas

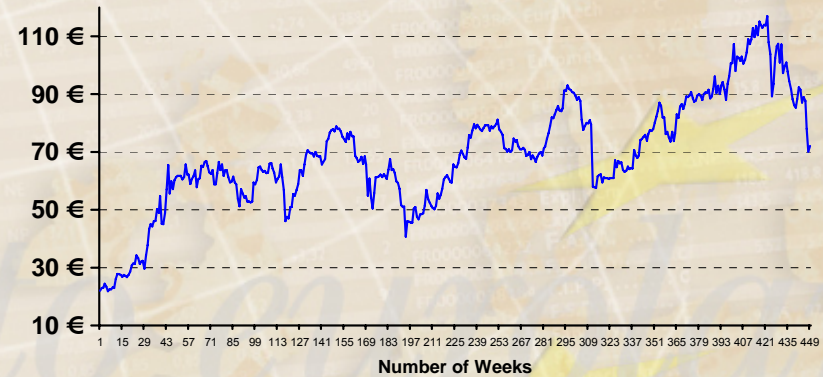


Price rising Price falling

Weather Risk Management: Ignore or not?



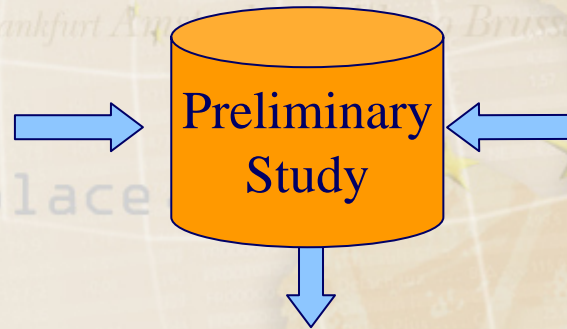
PIERRE VACANCES



Step 1: analysis

WEATHER
parameters:

- Temperature
- Rain
- Sun

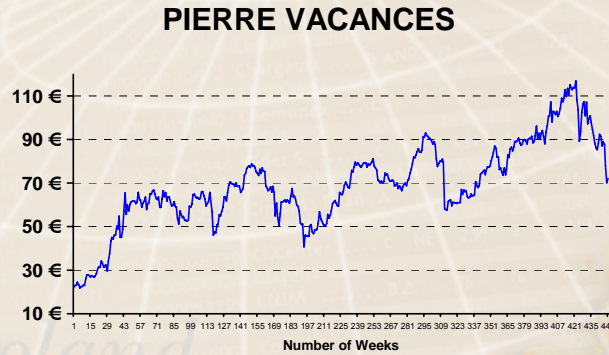


FINANCE
parameters:

- SBF120, WTI,
- EUR/USD, BTAN,
- OAT, Expected
- Inflation...

SHARE PRICE
WEATHER SENSITIVITY

Weather Risk Management: Ignore or not?



Top 3 Most Significant Explanatory Parameters

Parameters

- Finance
- **Weather** in the Previous Week

Parameters

- Finance
- **Weather** in 4 Previous Weeks

Parameters

- Finance
- **Weather** in 8 Previous Weeks

Parameters

- Finance
- **Weather** in 12 Previous Weeks

#1

INTEREST RATES

INTEREST RATES

SUN

SUN

#2

CURRENCIES

CURRENCIES

INTEREST RATES

TEMPERATURES

#3

SBF 120

SBF 120

CURRENCIES

INTEREST RATES

Weather Risk Management: Ignore or not?

Company Name
MR BRICOLAGE
BRICORAMA
FLEURY MICHON
SODEXO
CASINO
RALLYE
BONDUELLE
VILMORIN
EURODISNEY
PIERRE ET VACANCES
CLUB MED
COMPAGNIE DES ALPES
TRIGANO
BONGRAIN
GROUPE DANONE
PERNOD RICARD
ETAM
CAMAIEU
EDF
etc...

Weekly
FINANCE
and
WEATHER
Data



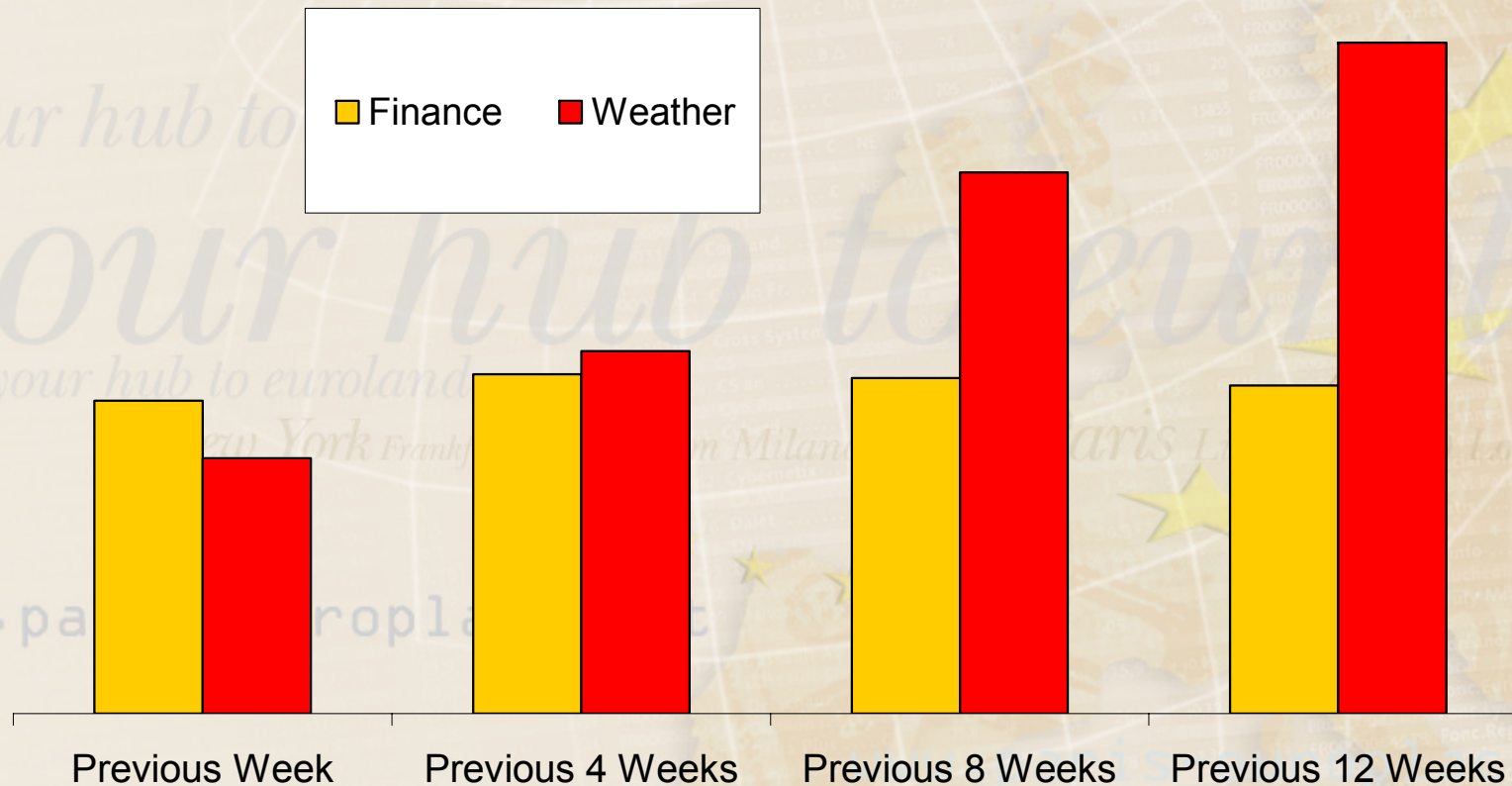
OUTPUT

Weather parameters
Individual weight
Share Price Model
Portfolio behaviour
etc...

Average Period
of the study:
Q1 1999
Q1 2008

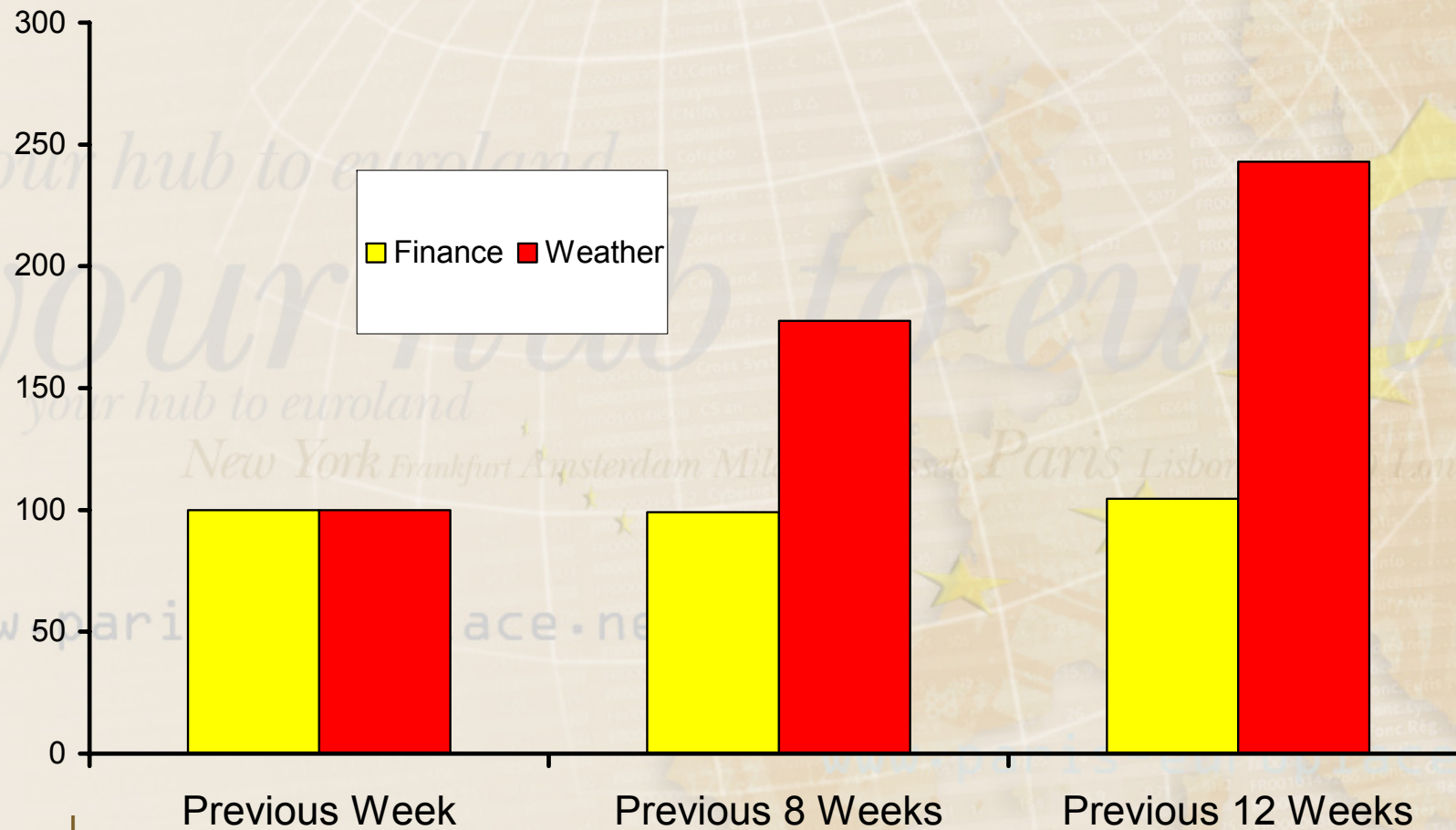
Weather Risk Management: Ignore or not?

Number of Significant Explanatory Factors

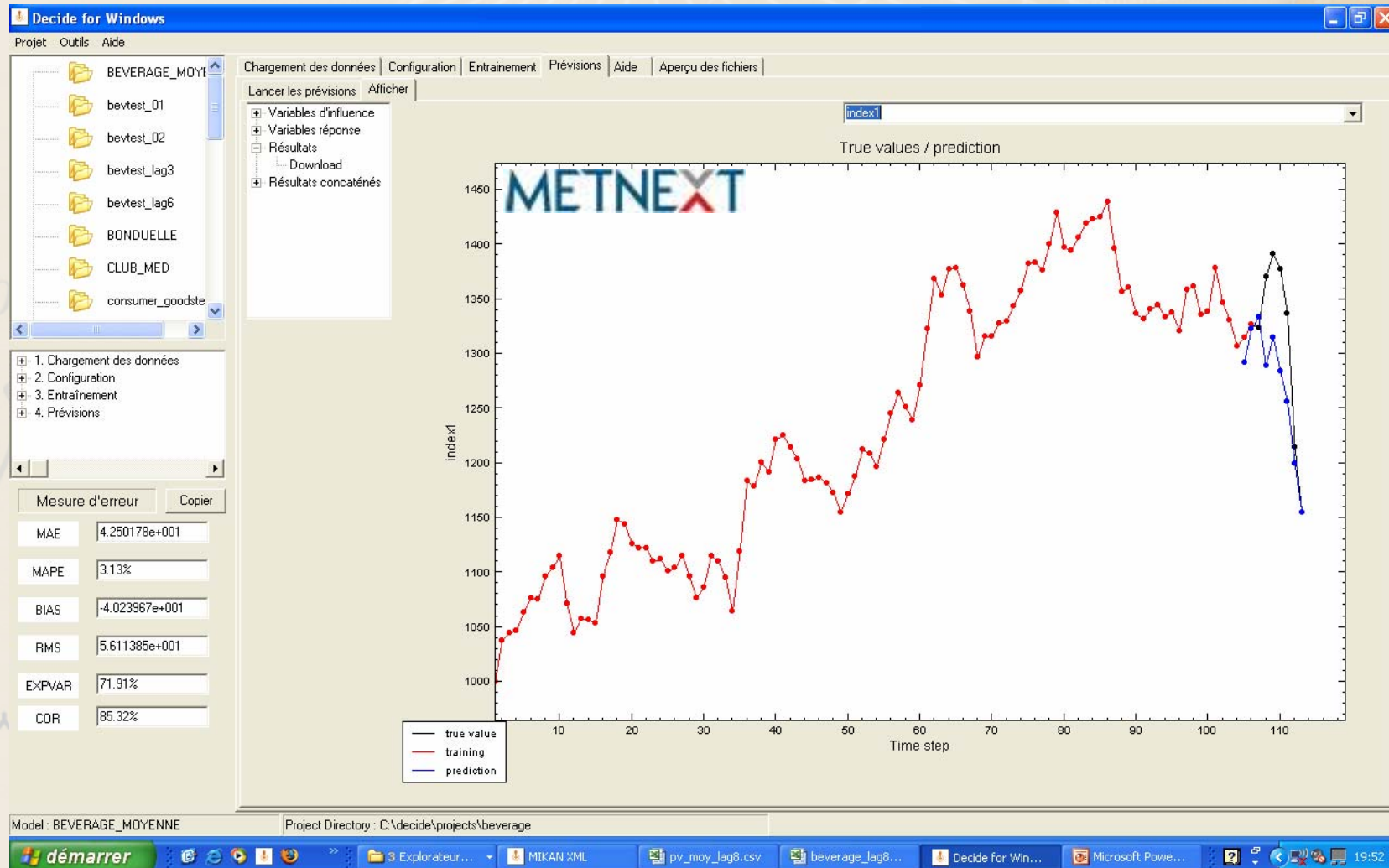


Weather Risk Management: Ignore or not?

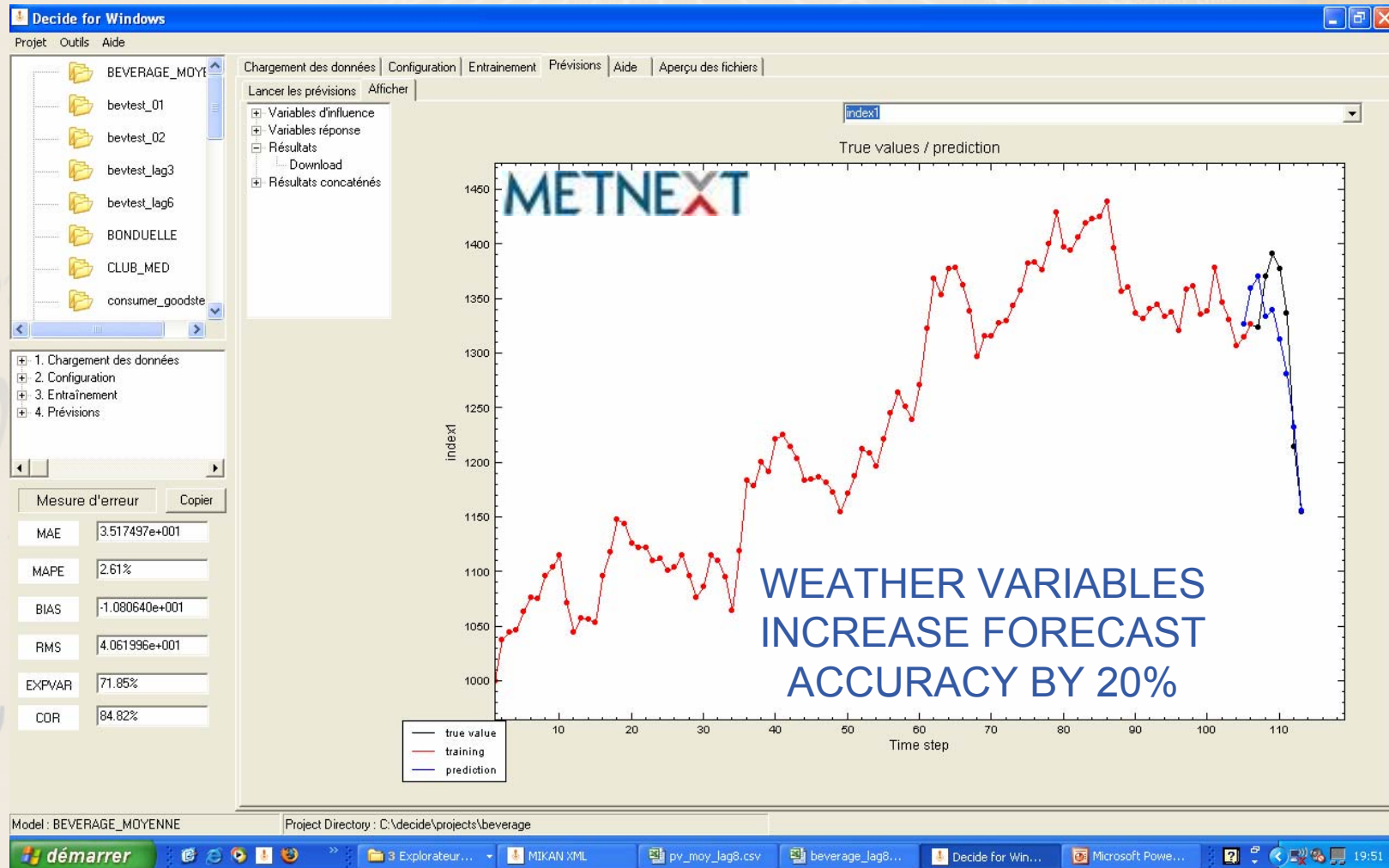
Average Weight in the Model (Base 100 = Previous Week)



Weather Risk Management: Ignore or not?



Weather Risk Management: Ignore or not?



Weather Risk Management: Ignore or not?

Should you continue to ignore Weather Risks?

a Business Manager, an auditor, an investor, a Bank, a rating agency, a fund manager ...

...a Treasurer, CFO and CEO all need to raise the « weather » question...

and be able to ANSWER it!

Weather Risk Management: Ignore or not?

Your company is weather-sensitive,
what can you do?

- At last, take the weather into account.
- Make appropriate business decisions
- Re-engineer processes
- Insure or Hedge your weather risks?

Weather Risks: Hedging Instruments

To some degree...YOU CAN

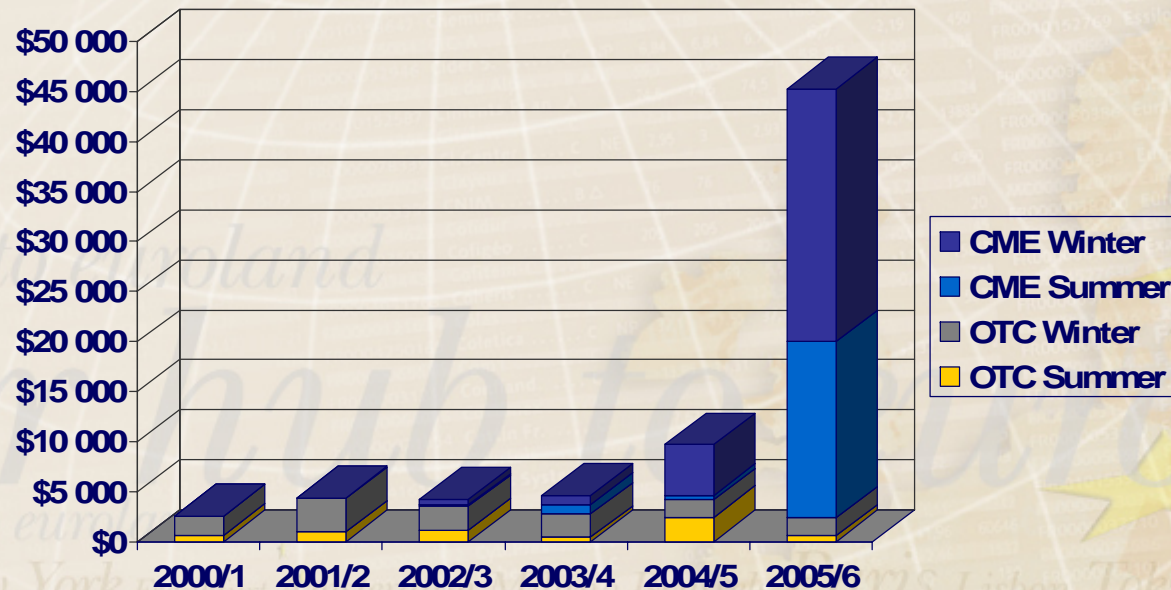
- Organized market for mostly **temperature** contracts (see example)
- OTC Market: index based
- Swaps, Calls, Puts, Collars...
- Forwards (futures) and Options:

To some degree...YOU CANNOT

- Lack of expertise
- Relevant hedging products?
- Liquidity and pricing issues?
- Relevant weather indices?
- Hedge-accounting issues?
- Where's the underlying risk?

Weather Risks: Hedging Instruments

Still...



- “These results demonstrate that the market is reaching its full potential. In the coming years, **this market will enable businesses to hedge more and more of the trillions of dollars of weather exposure** in the world's economies “ Georid Lane, Incoming President of WRMA
- “The explosive growth we are experiencing is a result of **companies realizing the importance of the weather market** “ Brian O’Hearne, President of WRMA

Weather Risks: Conclusion

Weather risks are real and significant and many corporates have **more reasons to hedge them than they have to hedge FX or interest rates.**

Weather risks are not restricted to extreme events and their **volatilities are comparable to other financial markets**

When will my shareholders realize weather risks can be **managed?**

When will my bankers, and rating agencies ask me about weather risks?

Wall Street will continue to put pressure on companies « meeting the numbers ». Any significant deviation from normalized weather guidance could rapidly change investors' perceptions.

Weather Risks: Conclusion



create the

Weather Risk Management Working Group

in partnership with



hosted by Paris Europlace

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Weather Risks: Conclusion

Paris Europlace Working Group



- for corporates, audit firms, funds, analysts, banks, rating agencies...
- in partnership with Treasury Associations and corporates
- to initiate and promote initiatives around weather-sensitivity and corporate weather risk management
- to develop a full weather-risk management methodology
- to design corporate weather risk policies
- to set the standards and represent corporate interests
- to develop relevant weather indices and hedging instruments

Weather Risks: Conclusion

Thank you for your attention

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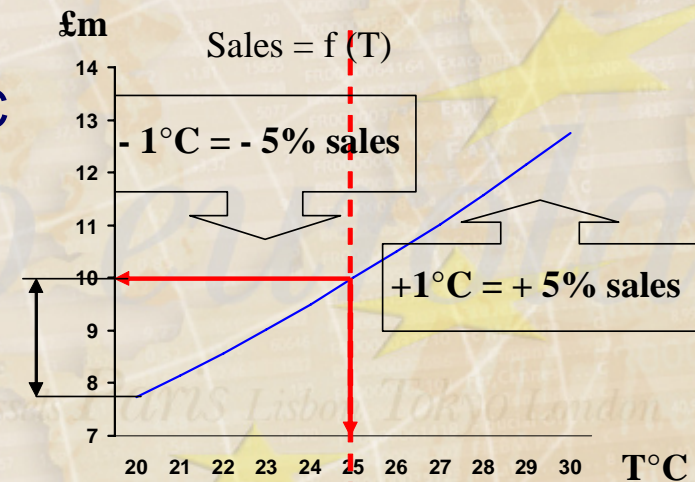
Annex:
Weather Risk Management
Hedging Example using CAT Futures

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Hedging the Weather: an Example

1. A soft drink company wants to hedge its weather risk in France in June
2. Sales are expected to be £10m at the budgeted “normal” temperature of 25°C
3. The weather-sensitivity analysis shows that between 20°C and 30°C each 1°C is equal to 5% of sales
4. The June CAT contract is currently trading at the price of $P = 750$



- Q. How can the Treasurer Hedge the Company weather risk?

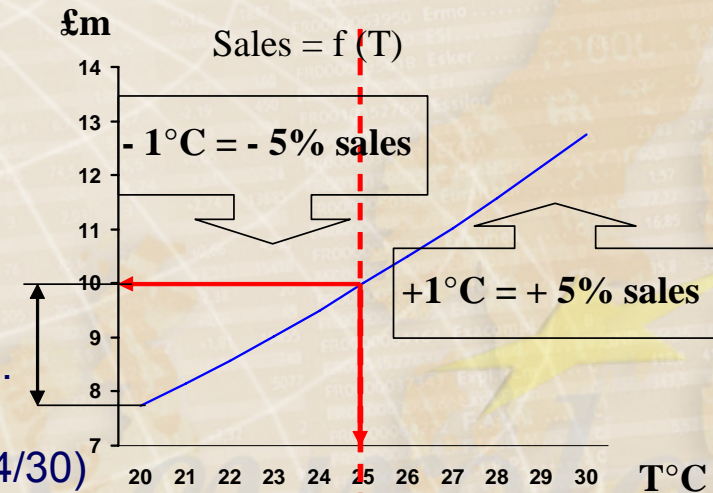
Hedging the Weather: an Example

- What is the RISK MODEL?

$$\delta \text{Sales} = 5\% \times 10\text{m} \times \delta \text{Temperature}$$

- What HEDGING PRODUCT?

A CAT Future. The CAT Index is the accumulation of daily average temperatures over a calendar month. If Paris CAT April 08 is trading at 324, it means the average temperature for April is currently 10.8°C ($324/30$) (Tick size = 1 = £20; Contract size = £20 x Index (ex: £20 x 324 = £6480))



- SELL or BUY the contracts?

SELL CAT Futures

- How Many?

$$dS = (5\% \times 10\text{m} \times dT) + (N \times 20\text{£} \times 30 \times dP) = 0$$

$$N = - \frac{5\% \times 10\text{m}}{20 \times 30} = - 833 \text{ contracts}$$

Hedging the Weather: an Example

Let's check the effectiveness of the hedge:

- $T_{avg} = 30^{\circ}\text{C}$: $\delta\text{Sales} = 5\% \times 10\text{m} \times 5 = +2.5\text{m}$

$$\delta P = (750 - 900) \times 833 \times 20 = -2.5\text{m}$$

- $T_{avg} = 20^{\circ}\text{C}$: $\delta\text{Sales} = 5\% \times 10\text{m} \times (-5) = -2.5\text{m}$

$$\delta P = (750 - 600) \times 833 \times 20 = +2.5\text{m}$$



**Association
Française
des Trésoriers
d'Entreprise**

CLIMATE FINANCE

***La gestion des risques auxquels les entreprises sont
confrontées aujourd'hui***

Présentation Paris-Europlace

Du 2 Juillet 2008

Alain Girardeau-Montaut

Président Commission Risques de l'AFTE

**PARIS
EUROPLACE**

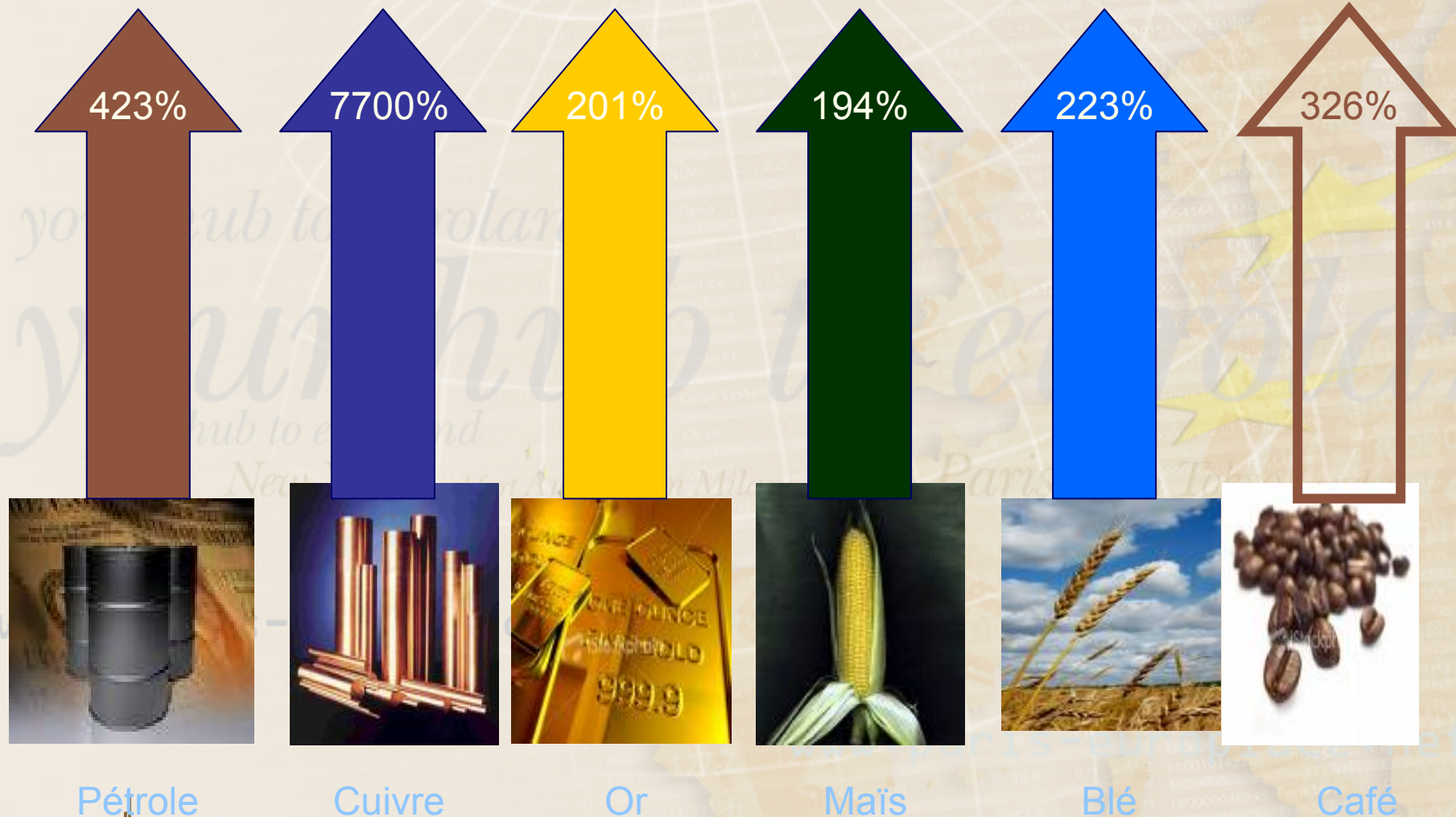
FINANCIAL FORUM

Risques classiques et "Nouveaux"

- Classiques:
 - Risque de change commercial/dividendes
 - Risque de Taux sur dette et Placement
- "Nouveaux":(ou remis au goût du jour)
 - Risque de change patrimonial (mondialisation)
 - Risque de crédit (propre, tiers, banques,...) (subprimes)
 - Risque de prix matières premières (croissance des émergents)
 - Risque de prix énergies (fuel, essence, gaz, électricité, charbon,...)
 - Risque météorologique (température, précipitations, neige)
 - Risque climatique à Long Terme (réchauffement, tempêtes)
 - Risque prix sur émissions de CO2
- Ces nouveaux risques sont plutôt peu gérés financièrement
 - Constat: peu d'utilisation des couvertures financières

Matières premières : une tendance continue à la hausse

Evolutions entre Janvier 1999 et Avril 2008



Prix du CO2 en 2006

27 €/t au 24/06/08 Ech.déc 2008



La gestion d'un risque

- Transférer au client (ex: surcharge carburant)
- Réduire les coûts des fournisseurs
- Délocaliser les fournisseurs (ex: sous-traitance en zone dollar)
- Améliorer la productivité, les produits
- Externaliser sur un assureur
- Externaliser sur les marchés financiers

Cinq raisons de cette faible utilisation des produits financiers de couverture

- En France, problème culturel:
 - Peu de simulations sur le futur, ou sur les scénarii possibles ("Ca ne peut pas arriver !"), réduction taille des services de prévision
 - mauvaise image des marchés financiers et à terme ("les spéculateurs...")
- Psychologie individuelle: peu valorisant pour un chef d'entreprise d'avouer qu'il a gagné de l'argent sur des couvertures financières qui ne sont pas son cœur de métier (inversement, moins grave de perdre parce que "c'est la faute aux marchés ou aux spéculateurs")
- Problème de formation universitaire et permanente insuffisante des décideurs à la finance de marchés
- Marketing des produits de couverture mal fait par les banques ?
- Normes IFRS sur dérivés introduisent une réticence supplémentaire

Recenser et évaluer les risques

- Recenser les risques : commerciaux, financiers, patrimoniaux, pour chaque risque
- Mettre en place un outil de reporting des impacts en Cash Flow, en Résultat, en Dividendes, par scénario, ou Value At Risk, pour les années futures
- Mise en place et Ajustage des couvertures éventuelles
- Consolidation , études de corrélations entre risques
- Mise en place d'une structure de gestion:
 - Comité des risques
 - Prévisions et simulations (culture de l'anticipation)
 - Couverture ,
 - Reporting des décisions et suivi des positions.

Venez au Centre de Formation et à la Commission Risques



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