



What is ERM?

What is Risk in Enterprise Risk Management?

Le risque en ERM incorpore l'incertitude

- ISO 31000 (Risk Management standards):
Risk is the effect of uncertainty on objectives
- Do not mix up with Frank H. Knight's economic concepts of Risk and Uncertainty.
In Risk, Uncertainty, and Profit (1921):
 - Risk is present when future events occur with measurable probability
 - Uncertainty is present when the likelihood of future events is indefinite or incalculableLe risque en ERM incorpore l'incertitude
- In ERM:
 - Risk may have negative or positive effect on objectives.
 - Risk concept encompasses Knightian uncertaintyEn théorie en ERM un risque peut avoir un effet positif ou négatif sur un objectif stratégique.
Un risque peut également avoir des effets négatifs sur certains objectifs négatifs et positifs sur d'autres.

Enterprise Risk Management (ERM): a first definition

- CAS: ERM is the discipline by which an organization in any industry assesses, controls, exploits, finances and monitors risks from all sources for the purpose of increasing the organization's short- and long-term value to its stakeholders.

Cas Bank of Ghana :

- Objectifs stratégiques :
 - Price stability :**
 - contrôler l'inflation (contenir l'inflation entre 8% et 12%). C'est un sous-objectif de l'objectif de price stability.
 - Taux de change
 - balance des paiements.
↳ *Effet avantageux à court terme*
» adverse à moyen terme
 - Baisse du prix du pétrole => problème pour le Ghana
 - Fluctuations prix du cacao, production.
 - Déplacement de la frontière /territorialité (risque vis-à-vis du pétrole ghanéen). (Contentieux réglés au Tribunal international de la mer).
 - Financial stability :**
 - LCBFT, intégrité des marchés...
 - Sustain economic growth :**

Business plan assurance Horizon 3/5 ans.

Enterprise Risk Management (ERM): a first definition

Casualty Actuarial Society

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S'intéresser au risque de discrimination (discrimination/fairness in insurance)

Exemple universités américaines (Etudiants noirs/boursiers...)

Voir Arthur CHARPENTIER

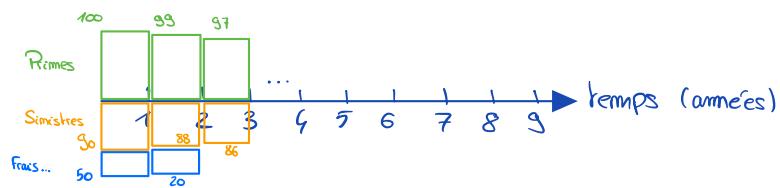
Lofreakonometrics

Cahier de l'ILB (Institut Louis Bachelier)
workshop U. of Copenhagen (Christian Furrer).

Coût de la gest^e des risques:

- * Traité de Réass
- * Exigences de Solva
- * Salaires (apporteur de mauvaises nouvelles...)

Mais gest^e des risques permet de créer de la valeur.



Risques :

- * Simistralité exceptionnelle (ex: -100 de sinistres en 2A). \rightarrow CAPSE
- \rightarrow Exclusion des plus gros contrats (Eviter MASS CAPSE)

Corrélat°/Contagion entre
perde except. et CAPSE.

Cas: ERGO sex party Hungary. (Risque de réputation)

L'exemple du produit ci-dessus n'est actuellement pas viable (car si on regarde pour 5 générat° \Rightarrow on arrête les pertes à 7ans et pour gagner de l'argent il faudra attendre quelques années de +).

\Rightarrow * ↑ primes
* réduire commission d'opport ou changer structure des commissions d'opport

Proba d'être insolvable/ruiner avant 2ans est de 51% à 0,5%
après réassurance, " à 1%. Coût annuel 1M€

Gain de valeur économique (sans taux d'intérêt)

$$(11+10+10+10+9+8+6\dots) \times (99\%-49\%) \geq 35$$

Coût: 5M€

↑
Récess sur 5ans

pour 1 générat° de contrats © Théo Jalabert

PAYBACK time 3ams - 10ans

5-6 ans.

à moyen terme maximiser résultat annuel à 3-5 ans.

à 3-5 ans le produit de gauche manciable car à 5ans on fait -18. À long terme OK.

Objectif de CA/parts de marché.
agir pour l'environnement / la société (Critères ESG).

Théo Jalabert

Enterprise Risk Management (ERM): another definition

- CAS: ERM is the discipline by which an organization in any industry assesses, controls, exploits, finances and monitors risks from all sources for the purpose of increasing the organization's short- and long-term value to its stakeholders.
- COSO: Enterprise Risk Management (ERM) 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**.
Conseil d'admin
- Risk appetite: the level of risk that an entity is ready to take in order to achieve its strategic objectives

Coso \leftrightarrow AAI mais pour les éditeurs .

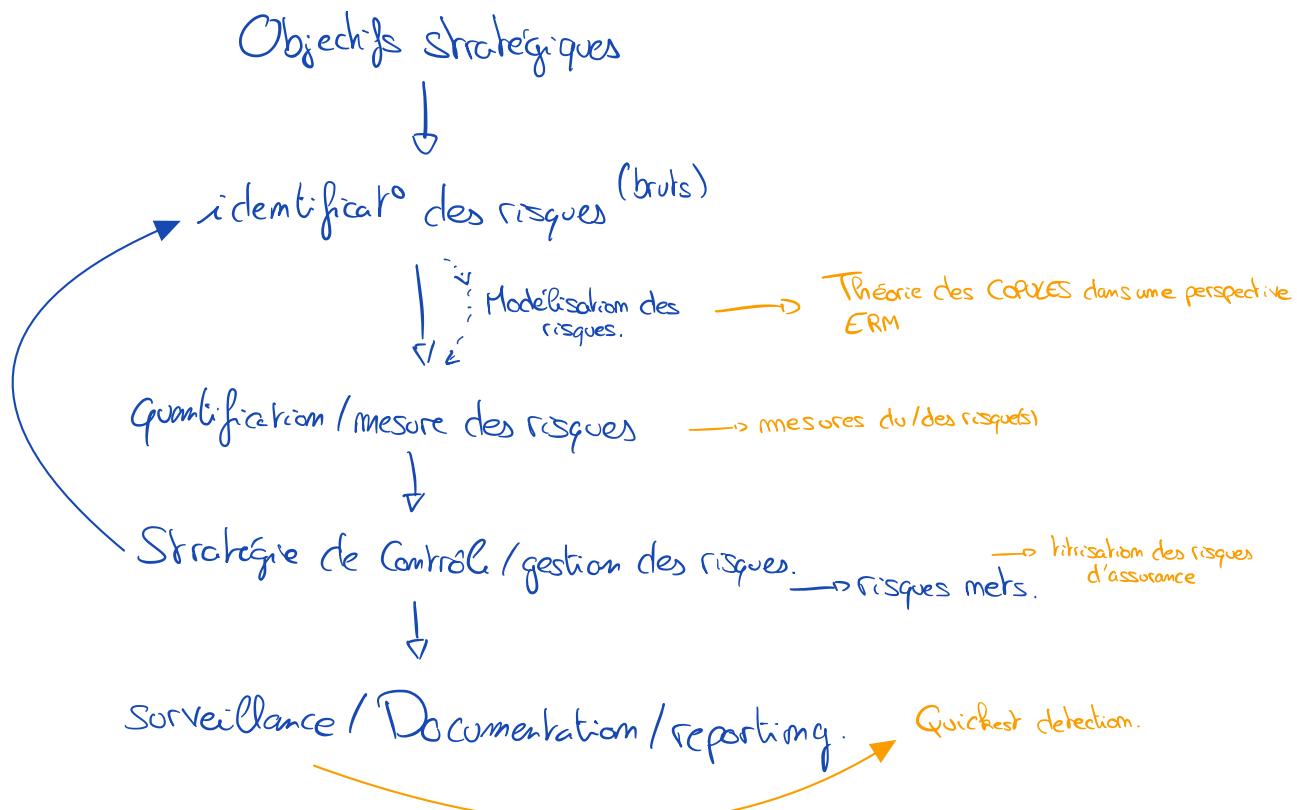
Enterprise Risk Management (ERM): the vision of a reinsurer

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- SCOR: Enterprise Risk Management is the process of systematically and comprehensively identifying critical risks, quantifying their impact and implementing integrated strategies to maximize the Enterprise Value.

On voit apparaître 3 étapes:

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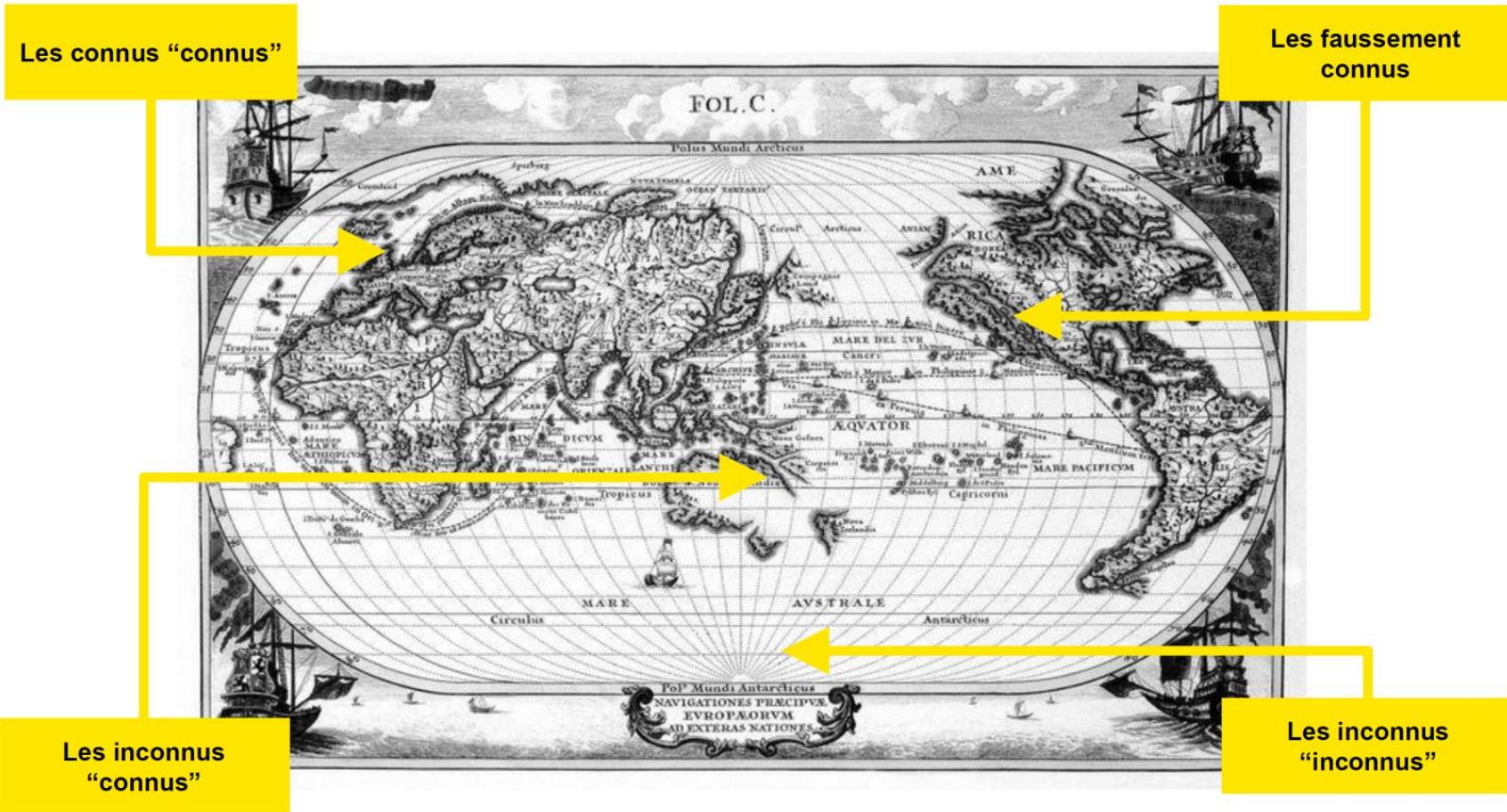
Enterprise Risk Management (ERM): a (too) long definition

- Wikipedia: Enterprise risk management (ERM or E.R.M.) in business includes the methods and processes used by organizations to manage risks and seize opportunities related to the achievement of their objectives. ERM provides a framework for risk management, which typically involves **identifying** particular events or circumstances relevant to the organization's objectives (risks and opportunities), **assessing** them in terms of **likelihood and magnitude of impact**, determining a **response strategy**, and **monitoring progress**. By identifying and proactively addressing risks and opportunities, business enterprises **protect and create value** for their **stakeholders, including owners, employees, customers, regulators, and society overall**.

Enterprise Risk Management (ERM): a revised definition

- COSO: Enterprise Risk Management (ERM) 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**.
- COSO 2016: ERM corresponds to the culture, capabilities and practices integrated with **strategy**-setting and its **execution**, that organizations rely on to manage risk in **creating, preserving and realizing value**.
- Importance of Risk Culture!

Les « Unknown unknowns » 1/2 : Carte de Scherer (1710)



Les « Unknown unknowns » 2/2 : Covid-19

Principaux risques des entreprises dans le monde en 2017

		Classement 2016
1	Interruptions d'activités (y compris les perturbations de la chaîne logistique)	37% 1 (38%)
2	Évolutions de marchés (volatilité, concurrence accrue, nouveaux entrants, fusions/acquisitions, stagnation et fluctuation de marchés)	31% 2 (34%)
3	Cyber risques (cyber crimes, violation de données...)	30% 3 (28%)
4	Catastrophes naturelles (tempête, inondation, tremblement de terre...)	24% 4 (24%)
5	Évolutions législatives et réglementaires (changement de gouvernement, sanctions économiques, protectionnisme...)	24% 5 (24%)
6	Évolutions macro-économiques (programmes d'austérité, inflation/déflation...)	22% 6 (22%)
7	Incendie, explosion	16% 8 (16%)
8	Risques politiques (guerre, terrorisme...)	14% 9 (11%)
9	Atteinte à la réputation ou à l'image de marque	13% 7 (18%)
10	Nouvelles technologies (impact de l'inter connectivité croissante, nanotechnologie, intelligence artificielle, impression 3D, drones...)	12% 11 (10%)

Source: Allianz Risk Barometer 2017