# 金融风险管理介绍

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2019年9月

#### 本部分的主要内容:

• 第一章: 风险的分类

• 第二章: 风险管理的基本概念

• 第三章: 风险管理的量化基础

• 第四章: 总体风险模型

#### 参考书目:

- [1]菲利普.乔瑞(2007)."风险价值VaR-金融风险管理新标准"的第一章,中信出版社.
- [2] J. McNeil, R. Frey and P. Embrechts (2005). Chapter 2 and Chapter 6, "Quantitative Risk Management".
- [3] John C. Hull (2010). Risk management and financial institutions (2nd Edition). (风险管理与金融机构).
- [4] Paul Sweeting (2011). Chapter 7: Definition of risk. Financial Enterprise Risk Management.

# Outline

- 1 风险的分类
  - 市场风险以及经济风险
  - Interest rate risk (利率风险)
  - Foreign exchange risk (汇率风险)
  - Credit risk (信用风险)
  - Liquidity risk (流动性)
  - Systemic risk (系统风险)
  - Demographic risk (人口风险)
  - Non-life insurance risk (非寿险风险)
  - Operational risks (操作风险)



市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (信用风险) Liquidity risk (统为性) Systemic risk (疾统风险) Demographic risk (人口风险) Non-life insurance risk (非寿险风险) Operational risks (梯环风险)

# 风险的分类

- 市场风险
- 利率风险
- 汇率风险
- 信用风险
- 流动性风险
- 系统性风险
- 人口风险
- 财险风险
- 操作风险

市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (信用风险) Liquidity risk (流动性险) Systemic risk (系统风险) Demographic risk (人口风险) Non-life insurance risk (非寿险风险) Operational risks (维氏风险)

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市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (借用风险) Liquidity risk (能动性) Systemic risk (系统风险) Demographic risk (人口风险) Non-life insurance risk (非弄险风险) Operational risks (様年风险)

# Market and Economic risk (市场风险以及经济风险)

- 市场风险是指资本市场的内在风险.
- 资产方持有的金融工具(股票,债券等),以及这些价值的变化对于 负债的影响(long-term interest rates and their effect on life insurance and pensions liabilities)
- 与市场风险相近的经济风险, 如价格和工资的浮动.

市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (前用风险) Liquidity risk (前动性) Systemic risk (系统风险) Demographic risk (人口风险) Non-life insurance risk (非寿险风险) Operational risks (维作风险)

# Market and Economic risk (市场风险以及经济风险)(cont'd)

- 银行主要面临市场风险.与银行持有的可交易证券有关.
- 财险公司的市场风险: 索赔通涨.
- 对寿险公司和养老金: 利率水平.

市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (淮率风险) Credit risk (衛用风险) Liquidity risk (瑜劝性) Systemic risk (孫然风险) Demographic risk (人口风险) Non-life insurance risk (非寿险风险) Operational risks (樣作风险)

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市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (值用风险) Liquidity risk (流动性) Systemic risk (系统风险) Demographic risk (月口风险) Non-life insurance risk (非寿险风险) Operational risks (维托风险)

# Interest rate risk (利率风险)

- 利率风险是市场风险中值得特别重视的一类风险。 是指利率的非 预期的各种期限的利率的变化带来的风险.
- 可以是利率的整体水平的变化,或者是收益率曲线的形状.
- 利率期限结构是利率风险的一个重要的方面. 利率期限结构建模。

市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (角用风险) Liquidity risk (角胡风险) Systemic risk (系统风险) Demographic risk (人口风险) Non-life insurance risk (非寿险风险) Operational risks (维作风险)

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Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (信用风险) Liquidity risk (流动性) Systemic risk (系统风险) Demographic risk (人口风险) Non-life insurance risk (非寿险风险)

Operational risks (操作风险)

风险的分类

# Foreign exchange risk (汇率风险)

- 汇率风险是另一类市场风险.
- 汇率风险有时通过股票市场风险的一部分刻画出来(国内和国外 证券市场的比较).

市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (信用风险) Liquidity risk (流动性) Systemic risk (系统风险) Demographic risk (人口风险) Non-life insurance risk (非寿险风险) Operational risks (權作风险)

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市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (備用风险) Liquidity risk (流动风险) Systemic risk (系统风险) Demographic risk (人口风险) Non-life insurance risk (非寿险风险) Operational risks (梯尺风险)

# Credit risk (信用风险)

- 信用风险是指违约风险, 以及其他类型的与信用风险有关的, 如 信用价差风险。
- 对于银行系统来说,信用风险经常是最重要的风险,在大量的个人 贷款以及小的商业中存在。
- 银行的另外一种信用风险的主要来源是衍生品交易的对手方风险.

市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (清用风险) Liquidity risk (流动性) Systemic risk (系统风险) Demographic risk (人口风险) Non-life insurance risk (非寿险风险) Operational risks (维邦险风险)

# Credit risk (信用风险) (cont'd)

- 银行对于他们提供的许多结构化信用产品进行建模,如CDOs. 资产证券化,个人征信模型等。
- 对于寿险和财险公司, 主要的信用风险是再保人的违约风险.
- 养老金中最大的信用风险是sponsor insolvency.
- 信用风险与非寿险很类似,在事故发生率(违约概率)和强度(回收率).

市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (借用风险) Liquidity risk (統海性) Systemic risk (系統风险) Demographic risk (人口风险) Non-life insurance risk (非弄险风险) Operational risks (様年风险)

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# Liquidity risk(流动性)

- 流动性是所有金融机构面临的风险. 高的交易成本.
- 另外一种流动性风险是指机构筹措额外需求资金的能力。
- 资产可以通过三个方面来提供流动性: 出售换取现金, 作为抵押品, 通过担保等.

市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (淮月风险) Liquidity risk (涼动性) Systemic risk (系统风险) Demographic risk (人口风险) Non-life insurance risk (非寿险风险) Operational risks (梯作风险)

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# Systemic risk (系统风险)

- 系统风险是指金融系统的失效导致的风险.
- 如果所有的机构采取类似的策略,系统失效的风险是相当巨大的。

市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (信用风险) Liquidity risk (统动性) Systemic risk (系统风险) Demographic risk (人口风险) Non-life insurance risk (非寿险风险) Operational risks (维氏险)

# Systemic risk (系统风险) (cont'd)

- 根据系统风险是通过不同对手的关系来影响的程度,也称之为传染风险.
- 系统风险有四种主要的类别: Financial infrastructure (金融的基础 设施), liquidity, common market positions, exposure to a common counter-party.

市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (肯用风险) Liquidity risk (统功性) Systemic risk (系统风险) Demographic risk (人口风险) Non-life insurance risk (非寿险风险) Operational risks (维凡险)

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# Demographic risk (人口风险)

- 人口风险覆盖了很广泛的风险.包括结婚的比例以及年龄的差异,孩子的数量,保险合同的退保率,养老项目的新进入的比例以及退休的结构,以及最重要的风险:死亡风险和长寿风险。
- 四种死亡率: 水平, 波动性, catastrophe, 趋势.

市场风险以及经济风险 Interest rate risk (利率风险) Foreign exchange risk (汇率风险) Credit risk (信用风险) Liquidity risk (统功性) Systemic risk (系统风险) Demographic risk (人口风险) Non-life insurance risk (非寿险风险) Operational risks (维托风险)

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# Non-life insurance risk (非寿险风险)

- 费率风险以及准备金风险.
- 两种方面需要考虑: 索赔发生的概率, 以及强度.

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# Operational risks(操作风险)

- 操作风险是一类风险, 是在公司进行业务过程中发生的。
- Business continuity risk, Regulatory risk, Technology risk, Crime risk, People risk, Bias, Legal risk, Process risk, Model risk, data risk, Reputational risk, Project risk, Strategic risk, and Residual risks.