

Corporate Finance
FIN 206
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Chapter 1
Course Overview
Introduction to Corporate Finance



- 两家公司A和B，资产负债率分别是30%和90%，你更喜欢哪家公司？
- 两家公司C和D，C是科技公司的早期阶段，D是上市公司，哪家更容易从资本市场融到资？
- 两家公司E和F，有一个相同标的的投资机会，都需要新的融资去投资，也都可以融到资金，为什么E放弃了，而F却投资了？
- 两家上市公司G和F，都刚刚发布2021年年报，利润同比增长分别是80%和20%，然而，G的股价下跌，而F反而上涨，为什么？
- 假如房价上涨是每年确定的1%，我是买房还是租房？
- 假如未来的贷款利率是处于上升通道，分期付款是选择等额本息还是等额本金？
- 投资我是选择基金，还是个人投资呢？
- 宝能2016年举牌万科，如果收购了万科，能给宝能带来什么好处？
- 2020-2021年疫情冲击，实体经济受影响很大，但是，2020年资本市场却一路高歌，2021年表现却差强人意，特别是NASDAQ指数还再创新高，为什么？
- PE（市盈率）具体金融含义是什么？投资选择标的PE值高好还是低好？
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在AI大背景下，在国内金融专业还有前途么？

- 在AI快速发展的背景下，国内金融专业仍然有广阔的前景，但需要适应新的变化和挑战。以下是几个关键点：
- 1. AI不会完全取代金融专业人才，而是改变工作方式：
 - AI擅长处理数据和执行重复性任务，如数据分析、风险评估等，这将提升效率，减少人工操作。
 - 金融专业人才的核心竞争力在于专业知识、判断力和创造力，这些是AI难以替代的。
 - 未来的金融从业者需要与AI协作，专注于需要人类智慧的工作，如战略制定、客户关系管理等。
- 2. 金融行业对AI人才的需求增加：
 - AI在金融领域的应用越来越广泛，如智能投顾、反欺诈、风险管理等，推动了对既懂金融又懂AI的复合型人才的需求。
 - 金融专业学生应积极学习AI相关知识，如机器学习、数据分析等，以增强竞争力。

在AI大背景下，在国内金融专业还有前途么？

- ▣ 3. 金融专业学生如何应对AI时代:
 - 强化数理基础和编程能力: 掌握Python、R等编程语言，以及统计学和机器学习知识。
 - 关注金融科技发展: 了解区块链、数字货币等新兴技术及其在金融中的应用。
 - 培养批判性思维和创造力: 这些能力在AI时代尤为重要，能够帮助解决复杂问题。
 - 提升沟通和团队合作能力: 金融工作往往需要跨部门协作，良好的沟通和团队合作能力不可或缺。
- ▣ 4. 国内金融行业的前景:
 - 中国金融行业持续发展，金融科技应用广泛，为金融专业人才提供了大量机会。
 - 随着金融市场的开放和国际化，具备国际视野和跨文化沟通能力的人才将更受欢迎。
- ▣ 总结:
- ▣ AI时代下，国内金融专业依然有前途，但从业者需要不断学习新技能，适应行业变化。金融专业学生应积极提升自身能力，抓住AI带来的机遇，为未来职业发展做好准备。

AI大背景下，大学教授金融课程的老师会失业么？(DS)

- 在AI大背景下，大学教授金融课程的老师不太可能完全失业，但他们的角色和工作方式可能会发生显著变化。以下是一些关键因素和可能的趋势：
 - 1. AI作为辅助工具
 - 教学辅助：AI可以帮助教授自动化一些重复性任务，如批改作业、生成教学材料、甚至提供个性化的学习建议。这样，教授可以更专注于高价值的教学活动，如引导学生讨论、解决复杂问题和进行创新研究。
 - 数据分析：AI可以帮助教授分析大量的金融数据，提供实时的市场洞察和预测，从而丰富教学内容。
 - 2. 教学内容的更新
 - AI与金融结合：随着AI在金融领域的应用越来越广泛，教授需要更新课程内容，涵盖AI在金融中的应用，如算法交易、风险管理、智能投顾等。这意味着教授需要不断学习和适应新技术。
 - 跨学科融合：未来的金融课程可能会更加跨学科，结合计算机科学、数据科学和金融学，教授需要具备更广泛的知识背景。

AI大背景下，大学教授金融课程的老师会失业么？(DS)

3. 教学方式的转变

- 在线教育：AI驱动的在线教育平台可以提供个性化的学习体验，教授可能需要更多地参与在线课程的设计和互动，而不仅仅是传统的面对面授课。
- 混合式学习：结合线上和线下的混合式学习模式可能会成为主流，教授需要适应这种新的教学环境。

4. 研究角色的强化

- 创新研究：教授可以更多地投入到前沿研究，利用AI工具进行金融领域的创新研究，推动学科发展。
- 产学研结合：教授可以与企业合作，将AI技术应用于实际金融问题，培养具有实践能力

5. 人文与伦理教育

- 伦理与责任：随着AI在金融中的应用，伦理和责任问题变得尤为重要。教授需要引导学生思考AI在金融中的伦理问题，培养他们的社会责任感和批判性思维。

AI大背景下，大学教授金融课程的老师会失业么？(DS)

- 6. 不可替代的人际互动
 - 导师角色：教授不仅仅是知识的传授者，更是学生的导师和榜样。AI无法完全替代教授在引导学生成长、提供职业建议和激发创新思维方面的作用。
 - 结论
- AI不会导致大学教授金融课程的老师失业，但会改变他们的工作方式和角色。教授需要不断学习和适应新技术，更新教学内容和方法，更多地投入到创新研究和跨学科合作中。同时，他们在引导学生思考、培养批判性思维和伦理责任感方面的作用将变得更加重要。

AI大背景下，大学教授金融课程的老师面临的挑战是什么？

- 在AI大背景下，大学教授金融课程的老师面临多重挑战，这些挑战既来自技术变革，也来自教育模式和学生需求的转变。以下是一些主要挑战：
- 1. 技术更新与知识迭代
 - AI技术的快速演进：AI在金融领域的应用（如算法交易、智能投顾、风险管理）发展迅速，教授需要不断学习新技术并将其融入课程。
 - 跨学科知识需求：金融学与数据科学、计算机科学的交叉越来越紧密，教授需要具备跨学科知识，例如机器学习、编程（Python、R等）和大数据分析。
- 2. 教学内容的更新与重构
 - 课程内容过时：传统金融课程可能无法满足AI时代的需求，教授需要重新设计课程，加入AI驱动的金融工具、区块链、加密货币等新兴领域。
 - 实践与理论结合：学生更关注实用性，教授需要将AI工具（如量化交易平台、风险管理软件）融入教学，帮助学生掌握实际操作技能。
- 3. 教学方式的转变
 - 在线教育的冲击：AI驱动的在线教育平台（如Coursera、edX）提供了高质量、低成本的金融课程，教授需要思考如何使自己的课程更具竞争力。
 - 个性化教学需求：AI可以根据学生的学习行为提供个性化学习路径，教授需要适应这种趋势，调整教学方式以满足不同学生的需求。
 - 混合式教学：结合线上与线下的混合式教学模式可能成为主流，教授需要掌握在线教学工具和方法。

- ▣ 4. 学生期望的变化
- ▣ 技能导向：学生更关注就业市场所需的技能，如数据分析、编程和**AI**应用，教授需要调整课程重点，帮助学生提升就业竞争力。
- ▣ 即时反馈需求：学生习惯于通过**AI**工具获得即时反馈，教授需要利用技术手段（如自动评分系统、**AI**助教）提高教学效率。
- ▣ 5. 研究方向的调整
- ▣ 研究方法的变革：**AI**为金融研究提供了新的工具和方法（如大数据分析、自然语言处理），教授需要掌握这些技术以保持研究的领先性。
- ▣ 产学研结合：教授需要与企业合作，将**AI**技术应用于实际金融问题，同时将实践经验反馈到教学中。
- ▣ 6. 伦理与责任教育
- ▣ **AI**伦理问题：**AI**在金融中的应用可能带来伦理问题（如算法歧视、数据隐私），教授需要引导学生思考这些挑战，培养他们的社会责任感。
- ▣ 金融风险教育：**AI**可能加剧金融市场的不稳定性（如高频交易引发的波动），教授需要帮助学生理解这些风险。
- ▣ 7. 职业角色的重新定位
- ▣ 从知识传授者到学习引导者：**AI**可以替代部分知识传授功能，教授需要更多地扮演导师角色，引导学生思考、创新和解决复杂问题。
- ▣ 终身学习的榜样：教授需要不断学习新技术和新知识，成为学生终身学习的榜样。

8. 竞争压力

- 行业专家的竞争：金融行业的从业者（如量化分析师、数据科学家）可能通过在线平台分享实践经验，教授需要与这些行业专家竞争学生的注意力。
- 全球化竞争：学生可以通过网络学习全球顶尖大学的课程，教授需要提升课程的国际化水平和吸引力。

9. 资源与支持不足

- 技术设施不足：一些大学可能缺乏支持**AI**教学的硬件和软件资源，教授需要争取更多支持。
- 培训机会有限：教授可能缺乏学习**AI**技术的机会，需要大学提供更多培训和支持。

结论

- AI**大背景下，大学教授金融课程的老师面临的挑战是多方面的，包括技术更新、教学内容重构、教学方式转变、学生期望变化等。然而，这些挑战也带来了机遇。通过不断学习、调整教学方式、加强与行业合作，教授可以更好地适应**AI**时代的需求，培养出具备竞争力的金融人才。同时，教授在引导学生思考伦理问题、培养创新能力和批判性思维方面的作用将变得更加重要。

如何学习好《公司金融》这门课程？

- ▣ 1. 夯实基础，理解核心概念：
 - 熟练掌握财务报表分析：理解资产负债表、利润表和现金流量表的结构和相互关系，掌握财务比率分析等工具。
 - 理解货币的时间价值：掌握现值、终值、年金等概念，能够运用折现现金流 (DCF) 等方法进行估值。
 - 理解风险与收益的关系：掌握资本资产定价模型 (CAPM) 等模型，理解风险与收益的权衡关系。
- ▣ 2. 注重实践，理论联系实际：
 - 关注金融市场动态：阅读财经新闻，关注上市公司公告，了解最新的金融市场动态和公司金融案例。
 - 参与模拟交易：利用模拟交易平台进行虚拟股票交易、投资组合管理等实践操作，将理论知识应用于实际场景。
 - 分析真实案例：选择感兴趣的上市公司，分析其财务报表、投资决策、融资策略等，运用所学知识解决实际问题。

如何学习好《公司金融》这门课程？

- ▣ 3. 善用资源，拓展学习渠道：
 - 充分利用教材和课堂资源：认真阅读教材，积极参与课堂讨论，及时向老师请教问题。
 - 利用在线学习平台：Coursera、edX等平台提供丰富的《公司金融》课程资源，可以补充学习。
 - 阅读相关书籍和文献：阅读《公司理财》、《投资学》等经典书籍，以及学术期刊上的相关文献，拓展知识面。
- ▣ 4. 培养批判性思维和解决问题的能力：
 - 不要死记硬背公式和模型：理解公式和模型背后的逻辑和假设，能够根据实际情况进行调整和应用。
 - 学会提出问题并寻找答案：在学习过程中，要善于提出问题，并通过查阅资料、分析案例等方式寻找答案。
 - 积极参与小组讨论和案例分析：与同学交流学习心得，共同分析案例，可以提高学习效率和效果。
- ▣ 一些额外的建议：
 - 制定学习计划并坚持执行：《公司金融》课程内容较多，需要制定合理的学习计划，并坚持执行。
 - 多做练习题：通过做题巩固所学知识，并发现自己的薄弱环节。
 - 寻求帮助：遇到困难时，不要害怕寻求老师、同学或助教的帮助。

AI如何赋能《公司金融》课程的学习?

- 1. 个性化学习:
 - 智能推荐学习内容: **AI**可以根据学生的学习进度、知识掌握情况等, 推荐适合的学习资料、视频和练习题, 帮助学生更有针对性地学习。
 - 自适应学习平台: 一些平台利用**AI**算法, 动态调整学习难度和内容, 确保学生在合适的挑战水平上学习, 提高学习效率。
- 2. 高效的知识获取和理解:
 - 智能问答系统: 学生可以通过自然语言向**AI**提问, 获得即时的概念解释、公式推导和案例分析, 解决学习中的疑惑。
 - 虚拟助手: **AI**虚拟助手可以提供**24/7**的学习支持, 帮助学生查找资料、解答问题, 甚至进行简单的对话练习。
- 3. 实践和应用:
 - 模拟交易平台: **AI**可以构建虚拟的金融市场环境, 学生可以进行模拟股票交易、投资组合管理等实践操作, 将理论知识应用于实际场景。
 - 案例分析工具: **AI**可以分析海量的公司财务数据, 帮助学生进行案例分析, 识别财务风险、评估投资价值等。

AI如何赋能《公司金融》课程的学习?

- 4. 评估和反馈:
 - 自动批改作业和考试: **AI**可以自动批改选择题、填空题等客观题, 甚至可以对简答题和案例分析题进行初步评估, 减轻教师负担, 提供即时反馈。
 - 学习进度跟踪和分析: **AI**可以跟踪学生的学习行为和数据, 生成学习报告, 帮助学生了解自己的学习进度和薄弱环节。
- 一些具体的**AI**工具和应用示例:
 - Coursera、edX等在线学习平台: 提供个性化的学习路径和推荐系统。
 - Khan Academy、Duolingo等自适应学习平台: 利用**AI**算法动态调整学习内容。
 - IBM Watson Tutor、Century Tech等智能辅导系统: 提供个性化的学习支持和反馈。
 - StockTrak、Wall Street Survivor等模拟交易平台: 提供虚拟的金融市场环境。
 - Tableau、Power BI等数据分析工具: 帮助学生进行财务数据分析和可视化。
- 需要注意的是:
 - **AI**技术仍在发展中, 不能完全替代教师的作用。
 - **AI**工具的使用需要学生具备一定的信息素养和批判性思维, 避免过度依赖。
 - 总而言之, **AI**技术为《公司金融》课程的学习带来了新的机遇, 学生应积极拥抱新技术, 利用**AI**工具提升学习效率和效果, 为未来的职业发展做好准备。

AI背景下，做一名大学教授《公司金融》的教师，应该如何应对(DS)

- 1. 更新教学内容，融入**AI**相关主题
 - 引入**AI**在金融中的应用：将**AI**在金融领域的实际应用（如智能投顾、算法交易、风险管理、信用评分等）纳入课程内容，帮助学生了解行业前沿。
 - 增加数据科学与量化分析：在课程中加入数据分析、机器学习、Python/R编程等内容，培养学生的技术能力。
 - 探讨**AI**的伦理与风险：引导学生思考**AI**在金融应用中的伦理问题（如算法偏见、数据隐私）和潜在风险。
- 2. 改进教学方式，利用**AI**工具
 - 采用智能教学工具：利用**AI**驱动的教学平台（如Coursera、edX）或虚拟助教，为学生提供个性化学习路径和即时反馈。
 - 引入模拟与实验教学：使用**AI**构建虚拟金融市场环境，让学生通过模拟交易、投资组合管理等实践操作，加深对理论的理解。
 - 翻转课堂与混合式教学：利用在线资源让学生课前自学基础知识，课堂上专注于案例分析和讨论，提高教学效率。

AI背景下，做一名大学教授《公司金融》的教师，应该如何应对(DS)

- ▣ 3. 培养学生的核心能力
 - 技术能力：鼓励学生学习编程、数据分析和机器学习技能，以适应**AI**驱动的金融行业需求。
 - 批判性思维：引导学生评估**AI**模型的局限性和风险，培养独立思考和解决问题的能力。
 - 跨学科视野：将金融经济学与计算机科学、数据科学等学科结合，帮助学生建立跨学科知识体系。
- ▣ 4. 加强实践与行业联系
 - 邀请行业专家讲座：邀请金融科技领域的从业者分享**AI**在金融中的应用案例，帮助学生了解行业动态。
 - 合作开展研究项目：与金融机构或科技公司合作，开展**AI**在金融领域的研究项目，提升课程的实用性。
 - 组织实习与竞赛：鼓励学生参与金融科技公司的实习或相关竞赛（如量化交易比赛），积累实践经验。
- ▣ 5. 持续学习与自我提升
 - 学习**AI**相关知识：教师应主动学习机器学习、数据分析等技术，并将其融入教学和研究。
 - 参与学术交流：参加金融科技领域的学术会议和研讨会，了解最新研究成果和行业趋势。
 - 与同行合作：与其他学科的教师（如计算机科学、数据科学）合作，开发跨学科课程或研究项目。

AI背景下，做一名大学教授《公司金融》的教师，应该如何应对(DS)



- ▣ 6. 调整评估方式
 - 注重实践能力考核：通过案例分析、模拟交易、项目报告等方式，评估学生将**AI**技术应用于金融问题的能力。
 - 引入**AI**辅助评估：利用**AI**工具自动批改作业和考试，提供即时反馈，同时减轻教师的工作负担。
 - 动态跟踪学习进度：利用**AI**分析学生的学习行为和数据，生成学习报告，帮助学生和教师了解学习效果。
- ▣ 7. 关注学生的职业发展
 - 提供职业规划指导：帮助学生了解**AI**背景下金融行业的职业发展方向（如量化分析师、数据科学家、金融科技产品经理等）。
 - 推荐学习资源：为学生推荐在线课程、书籍和行业认证（如**CFA**、**FRM**），帮助他们提升竞争力。
 - 建立校友网络：与金融科技领域的校友保持联系，为学生提供实习和就业机会。
- ▣ 8. 推动课程与研究的结合
 - 将研究成果融入教学：将自己在**AI**与金融领域的研究成果转化为教学内容，提升课程的学术性和实用性。
 - 鼓励学生参与研究：指导学生开展与**AI**相关的金融研究项目，培养他们的研究能力和创新思维。

请出10道《公司金融》的选择题，四选一(DS)

▣ 1. 以下哪项是公司金融的主要目标？

- A. 最大化公司收入
- B. 最大化股东财富
- C. 最大化公司市场份额
- D. 最大化员工福利

▣ 答案：B

解析：公司金融的核心目标是最大化股东财富，通常通过提高公司股价和分红来实现。

▣ 2. 净现值 (NPV) 法的决策规则是什么？

- A. 接受所有NPV为正的项目
- B. 接受所有NPV为负的项目
- C. 接受NPV最大的项目
- D. 接受NPV最小的项目

▣ 答案：A

解析：NPV为正表示项目能够创造价值，因此应接受所有NPV为正的项目。

请出10道《公司金融》的选择题，四选一(DS)

□ 3. 以下哪项是资本成本的主要组成部分？

- A. 债务成本和股权成本
- B. 运营成本和固定成本
- C. 税收和折旧
- D. 销售收入和利润

□ 答案：A

解析：资本成本主要包括债务成本（如利息）和股权成本（如股东要求的回报率）。

□ 4. 在公司金融中，以下哪项是“代理问题”的主要表现？

- A. 股东与管理层之间的利益冲突
- B. 公司与客户之间的利益冲突
- C. 公司与供应商之间的利益冲突
- D. 公司与政府之间的利益冲突

□ 答案：A

解析：代理问题主要指股东与管理层之间的利益冲突，管理层可能追求自身利益而非股东利益。

请出10道《公司金融》的选择题，四选一(DS)

5. 以下哪项是“资本结构”的最佳定义？

- A. 公司资产的组成
- B. 公司负债与股东权益的比例
- C. 公司短期负债与长期负债的比例
- D. 公司现金与存货的比例

答案：B

解析：资本结构是指公司负债与股东权益的比例，反映了公司融资的方式。

6. 以下哪项是“股利政策”的主要类型？

- A. 固定股利政策、稳定增长股利政策、剩余股利政策
- B. 高股利政策、低股利政策、无股利政策
- C. 现金股利政策、股票股利政策、混合股利政策
- D. 短期股利政策、长期股利政策、中期股利政策

答案：A

解析：股利政策的主要类型包括固定股利政策、稳定增长股利政策和剩余股利政策。

请出10道《公司金融》的选择题，四选一(DS)

7. 以下哪项是“加权平均资本成本 (WACC) ”的计算公式?

- A. $WACC = (E/V) \times Re + (D/V) \times Rd \times (1 - Tc)$
- B. $WACC = (E/V) \times Rd + (D/V) \times Re \times (1 - Tc)$
- C. $WACC = (E/V) \times Re + (D/V) \times Rd$
- D. $WACC = (E/V) \times Rd + (D/V) \times Re$

答案: A

解析: WACC的计算公式为: $WACC = (E/V) \times Re + (D/V) \times Rd \times (1 - Tc)$, 其中E为股权价值, D为债务价值, V为公司总价值, Re为股权成本, Rd为债务成本, Tc为公司税率。

8. 以下哪项是“资本预算”的主要步骤?

- A. 项目识别、现金流预测、风险评估、决策实施
- B. 项目融资、项目执行、项目监控、项目评估
- C. 项目计划、项目设计、项目开发、项目完成
- D. 项目投资、项目运营、项目退出、项目总结

答案: A

解析: 资本预算的主要步骤包括项目识别、现金流预测、风险评估和决策实施。

请出10道《公司金融》的选择题，四选一(DS)

9. 以下哪项是“财务杠杆”的主要作用？

- A. 放大股东收益和风险
- B. 降低公司运营成本
- C. 提高公司市场份额
- D. 减少公司税收负担

答案：A

解析：财务杠杆通过借债融资放大股东的收益和风险，当公司盈利时，股东收益增加；当公司亏损时，股东损失也增加。

10. 以下哪项是“内部收益率（IRR）”的定义？

- A. 使项目净现值为零的折现率
- B. 项目的平均年化收益率
- C. 项目的总收益与总成本的比率
- D. 项目的现金流现值与初始投资的比率

答案：A

解析：内部收益率（IRR）是使项目净现值（NPV）为零的折现率，用于评估项目的盈利能力。

Why Study Corporate Finance?

- ?
- ?
- ?
- Corporate life:
 - How does a firm finance its operations?
 - How can a firm use financial techniques to improve decision making(strategy, portfolio planning, manufacturing, etc.)
- Personal life:
 - How should you invest your money?
 - Maximizing your wealth

What Do You Want to Gain From This Course?

- A framework to understand the role of finance
- An understanding of key concepts in finance
- An introduction to financial instruments
- Financial assets pricing
- Exposure to financial techniques
- Basic financial market
- Capital structure
- To be a superstar at dinner
- Catch up with the boy you like
-

How to Learn Corporate Finance Well?

- ▣ Reading the textbook carefully before class
- ▣ Listening carefully in class
- ▣ Doing homework after class
- ▣ Discussing with your classmate
- ▣ Reading more financial news
- ▣ Building financial intuition
- ▣ Establishing the analytical framework and logic of finance
- ▣ Curriculum is generally related and mutually confirmed
- ▣

Your Teacher...

- Name: 杨旭宁 English name: Jerry Yang
- Email: yangxn@sustech.edu.cn
- Office: 520#, Business School Building
- Office hour: Wednesday 14:00-16:00, or by appointment
- Wechat No.: jerry922558 活泼泼地



Your TA...

- 姓名：孙本孝
- Email: sunbenxiao2022@163.com
- QQ: 953041159 Tel: 19822716883
- WeChat: 953041159

Wechat Group

- WeChat Group's Name: 公司金融-2025春季
- How are you!
- How old are you!-for future

About the Course

- The course has two sessions:
- Classroom: 102#, Business School Building
- Timing:
 - 19:00-20:50 (Tuesday, Weekly)
 - 19:00-20:50 (Thursday, Biweekly, Even Week)

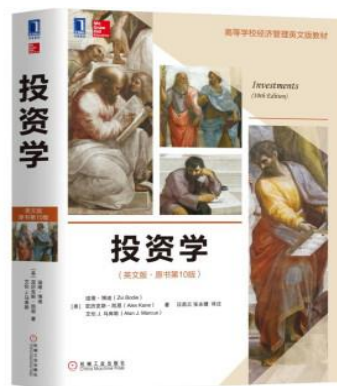
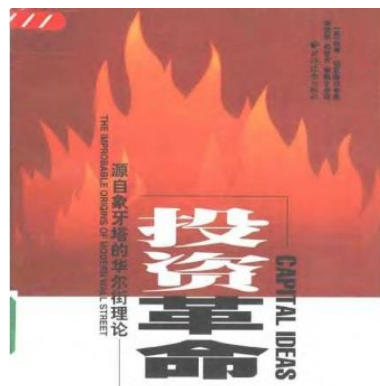
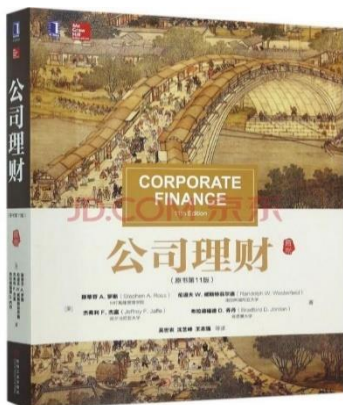
Textbook

Required book:

- 公司理财(原书第11版), [美] 斯蒂芬 A. 罗斯 (Stephen A. Ross), 伦道夫 W. 威斯特菲尔德, 杰弗利 F. 杰富 等著; 吴世农, 沈艺峰, 王志强 等 译出版社:机械工业出版社

Suggested book:

- Capital Ideas: Peter Bernstein
- Investments-10th Edition, Zvi Bodie, Alex Kane, Alan J.Marcus. 出版社:机械工业出版社
- Financial Economics(Second Edition), Zvi Bodie, Robert C.Merton, David L.Cleeton. 出版社: 中国人民大学出版社



Corporate Finance

About the Authors

- STEPHEN A. ROSS Sloan School of Management, Massachusetts Institute of Technology Stephen A. Ross is the Franco Modigliani Professor of Financial Economics at the Sloan School of Management, Massachusetts Institute of Technology. One of the most widely published authors in finance and economics, Professor Ross is recognized for his work in developing the arbitrage pricing theory, as well as for having made substantial contributions to the discipline through his research in signaling, agency theory, option pricing, and the theory of the firm structure of interest rates, among other topics. A past president of the American Finance Association, he currently serves as an associate editor of several academic and practitioner journals and is a trustee of CalTech.



About the Authors

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About the Authors

- JEFFREY F. JAFFE Wharton School of Business, University of Pennsylvania Jeffrey F. Jaffe has been a frequent contributor to the finance and economics literatures in such journals as the Quarterly Economic Journal, The Journal of Finance, The Journal of Financial and Quantitative Analysis, The Journal of Financial Economics, and The Financial Analysts Journal. His best-known work concerns insider trading, where he showed both that corporate insiders earn abnormal profits from their trades and that regulation has little effect on these profits



About the Authors

- BRADFORD D. JORDAN Gatton College of Business and Economics, University of Kentucky Bradford D. Jordan is professor of finance and holder of the Richard W. and Janis H. Furst Endowed Chair in Finance at the University of Kentucky. He has a long-standing interest in both applied and theoretical issues in corporate finance and has extensive experience teaching all levels of corporate finance and financial management policy. Professor Jordan has published numerous articles on issues such as cost of capital, capital structure, and the behavior of security prices. He is a past president of the Southern Finance Association, and he is coauthor of *Fundamentals of Investments: Valuation and Management*, 7th edition, a leading investments text, also published by McGraw-Hill/Irwin.



Tools

- Tools: AI, AI, AI.....Wind, Excel, Stata
- Wind: Source of data
- Excel: Basic data processing
- Stata: Graph, Regression

- Blackboard: Notes, Case, etc.

Team Work

- Team work is highly valued
 - Important in your future life, part of business training
 - Inspire learning from your teammates
- What do teams work on?
 - In-class discussions: sit together in class
 - After-class: case homework
- Find your team(3 people) by Feb. 28
 - Hand in a sheet with all the names and signatures



Are You Comfortable Working with Others?

- How can you be a good team member?
 - Make friends in the class
 - Don't be lazy. Think and work
 - Show your work and speak out what you think in group discussion
 - Share your learning experience with others
 - Help others and cooperate with them
 - Do not do all the work for them



How to Work on Group Work?

- Before the case is available
 - Read the textbook and work on end-of-chapter problems
- Right after the case is available
 - Try to work on it individually
- A week before due date
 - Meet with your team members to discuss your solution and work on the report
- On or right before the due date
 - Finalize the report and submit it



Class participation

- Come to the class on time
 - No attendance will be taken
 - We may have quizzes in class
- Participation in class discussion
 - Free to answer/ask questions, give comments
 - Be ready to answer questions if you are called



Assessment

Type of Assessment	% of final score	Times	Notes
Attendance	10%	24	Individual
Assignments	10%	4	Individual
Case Study	10/20%???	2/4	Group
Mid-Term Test	30%	1	Individual
Final Exam	40%	1	Individual

Participation in WeChat discussion

- ▣ Initiate a topic
- ▣ Actively participate in the discussion
- ▣ Express one's thoughts and opinions



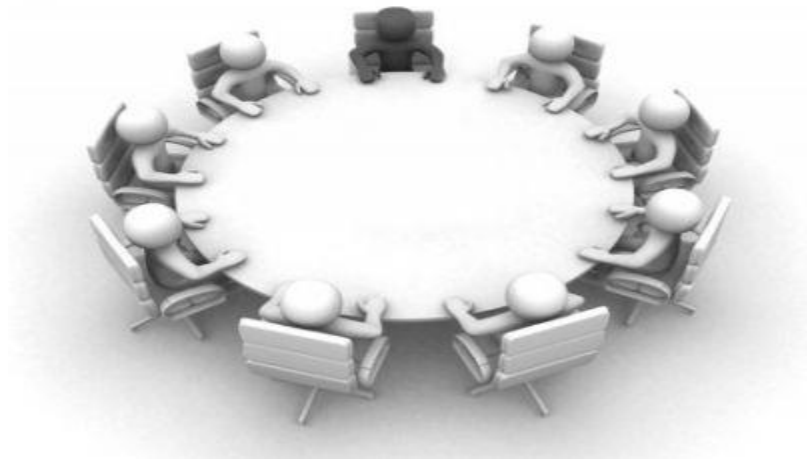
Exams

- Forms of both exams
 - Individual
 - No books or notes
 - No any electronics
- Time of exams
 - Mid-term: TBD
 - Final: TBD
- Do not miss an exam
 - No make-up exam
 - Mark your calendar



Study Guide

- Read the chapter before each class
- Actively participate in class discussion
- Positively attend web discussion
- Work on the problems at the end of each chapter
 - Take it as individual homework which you don't need to submit
 - Exams will test on calculation questions similar to the end-of-chapter problems



Useful APP



Dressing & Appearance

- Clean
- Comfortable
- Beautiful
- Professional



Class Room Policies



Eating



Talking



Playing



Calling



The Financing of Amazon.com (1994 - 1999)

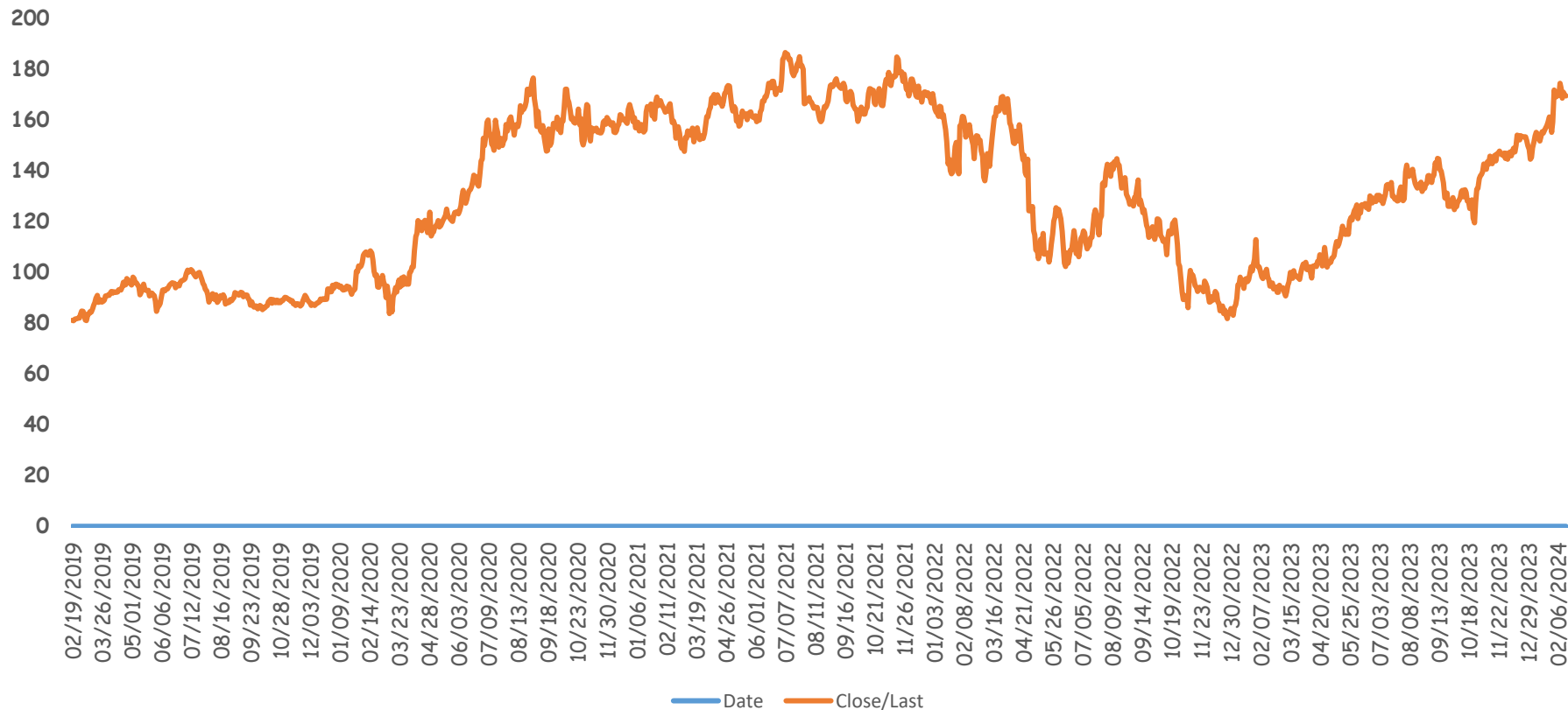
Time Line	Price/ Share	Sources of Funds
1994 - July to Nov	\$.001	<i>Founder:</i> Jeff Bezos starts Amazon. Com with \$10,000, borrows \$44,000.
1995 - Febr to July	\$.1717	<i>Family:</i> Founder's father and mother invest \$245,500.
1995 - Aug to Dec	\$.1287-.3333	<i>Business Angels:</i> 2 angels invest \$54,408.
1995/6 - Dec to May	\$.3333	<i>Business Angels:</i> 20 angels invest \$937,000
1996 - May	\$.3333	<i>Family:</i> Founder's siblings invest \$20,000.
1996 - June	\$2.3417	<i>Venture Capitalists:</i> 2 venture capital funds invest \$8 million.
1997 - May	\$18	<i>IPO:</i> 3 million shares issued raising \$49.1 million
1997/8 - Dec to May	\$52.11	<i>Bond issue:</i> \$326 million bond issue.

The Price of Amazon.com

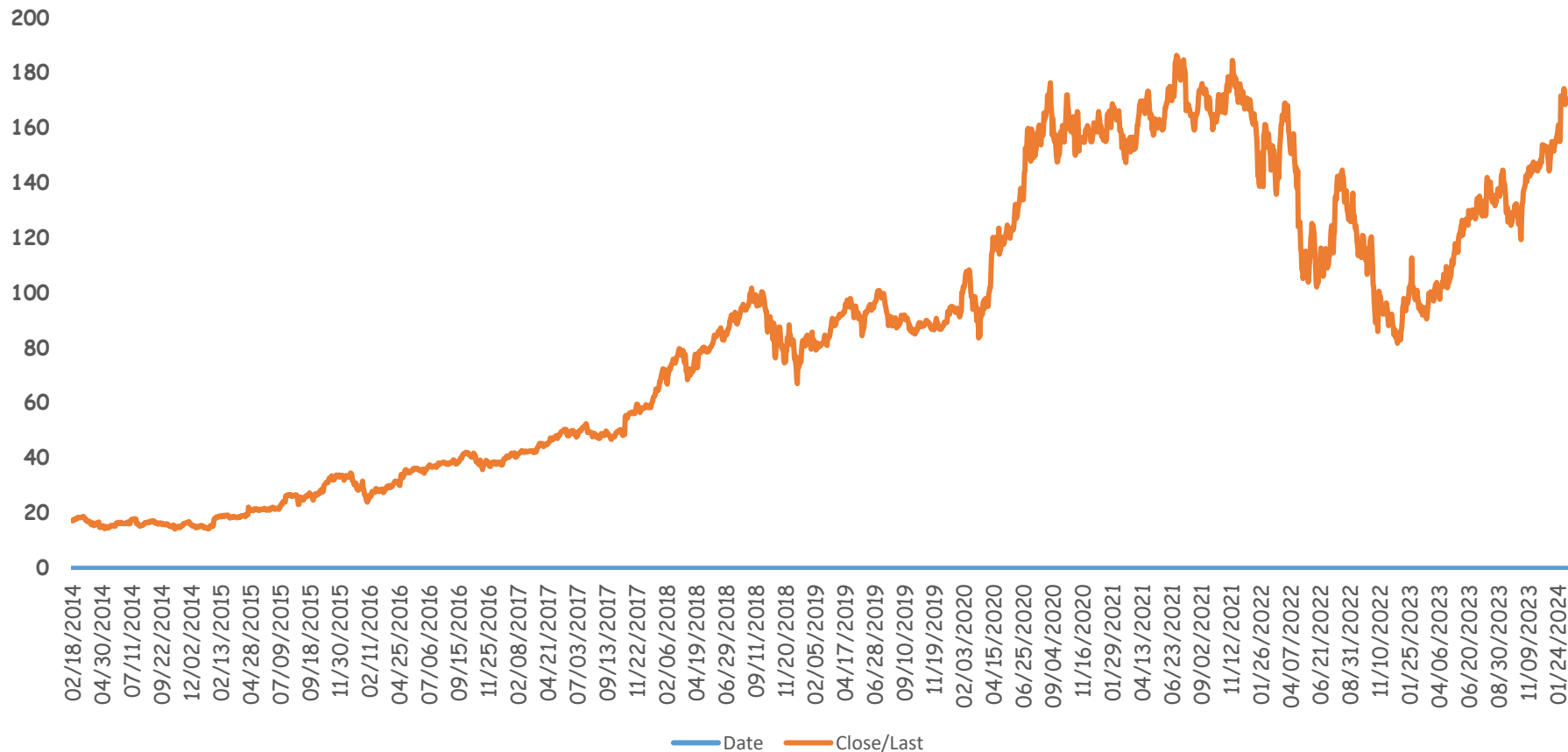


<https://stock.finance.sina.com.cn/usstock/quotes/AMZN.html>

The Price of Amazon.com 5 Years



The Price of Amazon.com-10 years



The History of Corporate

- 现代股份公司起源于17世纪的欧洲。当时的企业为无限公司，股东必须清偿公司所有的负债。为了促进高风险企业的发展，如殖民地的开发，各个国家特许一些企业家建立股份有限公司。世界上第一个股份公司为荷兰东印度公司，该公司在1602年在发股募款。
- 当时荷兰人在阿姆斯特河桥上买卖荷属东印度公司股票，这是全世界第一支公开交易的股票。而阿姆斯特河大桥则是世界最早的股票交易所，在那里挤满了等着与股票经纪人交易的投资人。



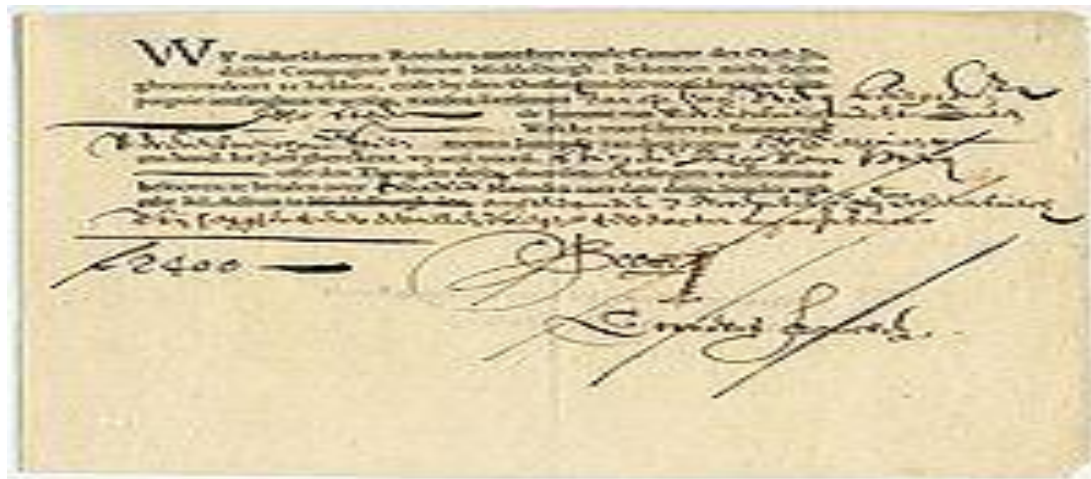
The History of Corporate

- 1600年12月31日，皇室授权伦敦商人公司从事与东印度的贸易
- 该公司有218个发起人（股东）
- 由业主大会（**Court of Proprietors**）和董事会（**Court of Directors**）治理
- 业主大会由那些有投票的股东组成；有融资决定权和董事选举权
- 董事会负责公司的运营，公司运营政策的制定需要得到业主大会的批准
- 董事会选举首席执行官
- 短期投资者希望在每次航行之后能收回投资



The History of Corporate

- 东印度公司发行战争债券，为殖民地战争提供融资。这是历史上第一个债券
- 债券的偿还出现了困难，成为了**stock**（储备，存货）
- 对这些白条的交易，形成了股票市场（**stock market**）
- 股票的价值，来源于未来的现金流：东印度公司从殖民地掠夺的财富



The Stock's Bubble

- 1689年到1714年之间，英国政府因为打仗欠了巨额债务。南海公司（**South Sea Company**）提出向英国政府支付**750万英镑**来换取管理英国国债的特权。在向英国国会的主要议员们和英国皇室支付了**120万英镑**的贿赂后，英国国会把管理非南海公司持有的**3100万英镑**的国债的特权判给了南海公司。
- 南海公司制造大量新闻，人们相信在南美发现了巨大的金银矿藏，纷纷购买南海公司的股票。南海公司在**1720年4月**向公众提供股票预约认购，人们只需支付股价的十分之一就可获得股票。南海公司承诺所有持有国债的人都可以把尚未兑换的国债转换为南海公司的股票。
- 大量议员、贵族、政府官员同样抢购股票。南海公司股价从**100镑**飙到**950镑**。
- 没有取得国债经营许可证的其他公司开始仿效发行股票。为了制止这一现象，**1720年6月**英国国会，对新公司的设立及新股票的发行，实行严格管制，即泡沫法（**Bubble Act**）。
- 泡沫公司的股票纷纷下跌，严重影响了人们的信心。
- 同年**10月**，南海公司股价跌到**170镑**，**12月**，跌至**125镑**

The Stock's Bubble



I can calculate the motions of heavenly bodies, but not the madness of people
----Isaac Newton

The History of Chinese Corporate

- 起源于早期南方的行帮会团的合营，为明末清初福建农村中的一种带有帮会性质的组合形式。后来这种名称，又为闽粤两省的“洪门”在海外华侨社会中首先使用。
- **1777**年在婆罗洲建立了“兰芳公司”，又名“兰芳大统制”，亦称“兰芳共和国”。中央设有“公班行”，下设行政、立法、教育等部门。下属又有省、府、县等各级机构，首任元首罗芳伯称“大统制”，类似共和国之“总统”。这个带有国家性质的兰芳公司在**1885**年被荷兰东印度公司消灭。
- **1872**年，清廷批准李鸿章的奏折，正式同意成立招商局，以股份制形式创办造船厂，并拟列《联设新轮船公司章程》，原始股每股为一百两白银
- **2006**年**12**月**1**日，招商轮船以代码“**601872**”重新在上海交易所挂牌上市，发行价每股**3.71**元
- **1984**年**11**月**18**日，飞乐音响向社会发行**1**万股，每股票面**50**元，成为新中国第一只公开发行的股票
- **1985**年**1**月**14**日，延中实业公开发行**10**万股股票，每股票面**50**元

The History of Chinese Corporate

- 1882年，上海股票平准公司成立，类似股票交易所
- 1986年9月26日，新中国第一个证券交易柜台在上海开张。开市第一天交易共成交股票1540股，成交金额85280元
- 1990年11月26日上海证券交易所成立，同年12月19日开始正式营业。1990年12月1日，深圳证券交易所成立



深圳证券交易所
SHENZHEN
STOCK EXCHANGE



Chinese Capital Market-Stock

日期	上市公司总数	上市A股总数	上市B股总数	总市值(亿元)	A股当年累计成交金额(亿元)	股权融资额 (亿元)
2022	5079	5067	86	790116.19	2246377.21	16881.88
2021	4697	4685	90	918810.93	2579717.41	18177.41
2020	4154	4140	93	797238.16	2067631.86	16676.54
2019	3777	3857	95	592934.57	1270100.52	15323.00
2018	3584	3567	99	434924.02	901103.17	12107.35
2017	3485	3467	100	567086.08	1123647.87	17223.86
2016	3052	3034	100	507685.88	1272358.72	21095.81
2015	2827	2808	101	531304.20	2546837.74	16107.23
2014	2613	2592	104	372546.96	741378.07	9043.10
2013	2489	2468	106	239077.19	466632.03	4613.86
2012	2494	2472	107	230357.62	313715.14	4457.36
2011	2342	2320	108	214758.09	420339.19	7046.76
2010	2063	2041	108	265422.59	543465.92	10140.82
2009	1700	1678	108	243939.12	533889.40	4564.88
2008	1604	1581	109	121366.44	265890.42	2905.60
2007	1530	1507	109	327140.02	454771.30	7709.59
2006	1421	1398	109	89403.52	89217.09	2265.94
2005	1377	1355	109	32430.15	31099.38	55.35
2004	1373	1349	110	37209.23	41576.20	667.85
2003	1285	1259	111	42457.71	31269.97	698.81
2002	1223	1199	111	38329.13	27142.04	576.05
2001	1160	1136	112	46326.73	33273.90	1018.56
2000	1088	1060	114	50752.32	60293.04	1305.52
1999	949	923	108	28153.55	31051.50	754.30
1998	852	826	106	20916.88	23417.58	663.75
1997	745	720	101	19000.83	30294.72	772.24
1996	530	514	85	10902.88	21050.89	250.58
1995	323	311	70	3938.39	3957.50	72.79
1994	291	287	58	4051.50	7982.11	181.93
1993	183	177	41	3655.14	3498.08	186.18
1992	53	53	18	1060.05	649.91	19.06
1991	13	13	0	120.32	33.46	1.03
1990	8	8	0	23.82	0.01	2.35

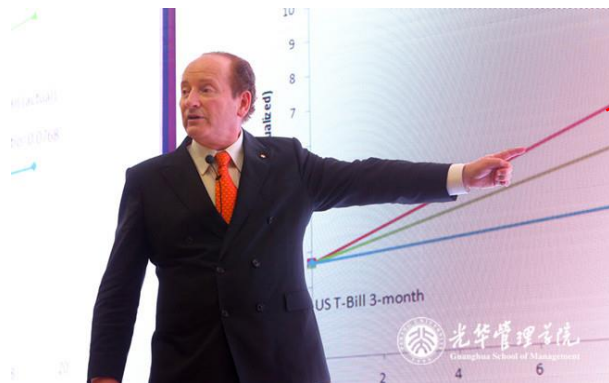
Chinese Capital Market-Bond

日期	银行间净价成交额(亿元)	交易所成交额(亿元)	总交易量 (亿元)	债权融资额 (亿元)
2022	2685126	237857	13067309	615419
2021	2119657	172233	12413067	617582
2020	2298082	112943	12821928	568999
2019	2106336	27033	14186915	451911
2018	1481286	16585	1514456	438467
2017	977260	15375	1008009	408334
2016	1239862	12517	1264897	363601
2015	839910	16200	872311	231725
2014	389123	14135	417392	121861
2013	404256	10091	424439	90511
2012	737933	5888	749709	80981
2011	627859	4699	637257	78343
2010	632821	3653	640127	93506
2009	465484	3414	472313	86908
2008	366659	3684	374027	73158
2007	154356	1819	157994	81610
2006	100462	1881	104224	59370
2005	58865	3360	65585	43872
2004	24626	3647	31921	27984
2003	29866	6756	43377	20849
2002	4098	8836	21770	11362
2001	417	4861	5278	7453
2000	541	4252	4793	6398
1999	61	5002	5063	5984
1998	16	5789	5804	8538
1997	4	3229	3233	5465
1996	0	4746	4746	4401
1995	0	207	207	2291
1994	0	9	9	1321
1993	0	22	22	528
1992	0	0	0	411
1991	0	0	0	352
1990	0	0	0	347

- A limited liability company (LLC) is a limited partnership without a general partner.
- A corporation is that it is a legally defined, artificial being (a judicial person or legal entity), separate from its owners.



What is Finance?



Finance is the study of how to allocate scarce resources over time.

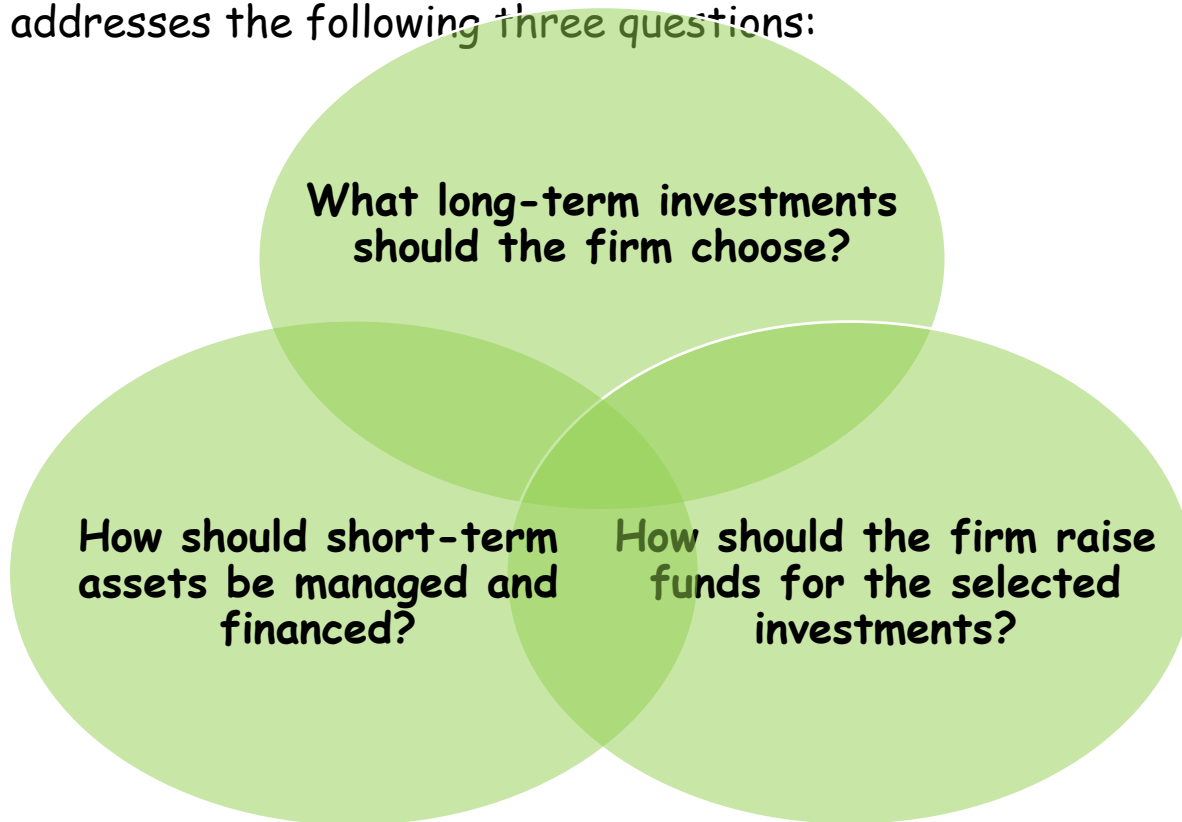
- The costs and benefits of financial decisions are spread out over time
- Usually not known with certainty in advance by either the decision-maker or anybody else

What is Corporate Finance?



What is Corporate Finance?

- Our course addresses the following **three questions**:



The Balance Sheet

- An accountant's snapshot of the firm's accounting value at a specific point in time
- The Balance Sheet Identity is:
 - $\text{Assets} \equiv \text{Liabilities} + \text{Stockholder's Equity}$
- Please remember the two following definitions:
 - Investment decision = purchase of real assets
 - Financing decision = sale of financial assets

Balance Sheet Model of the Firm

Total Value of Assets:

Current Assets

Fixed Assets

1 Tangible

2 Intangible

Total Firm Value to Investors:

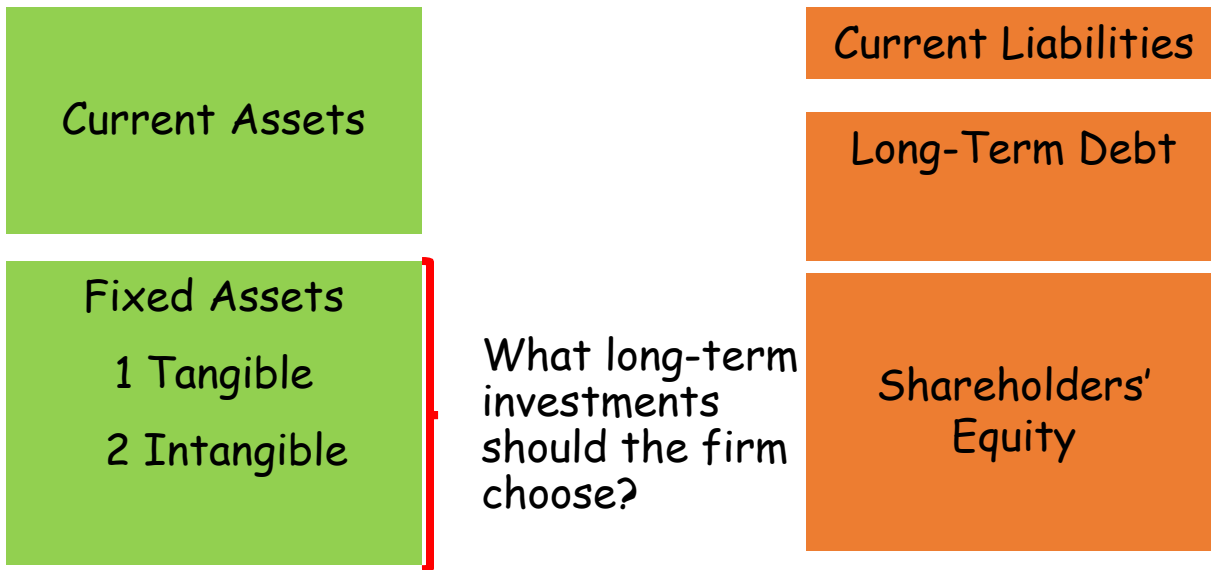
Current Liabilities

Long-Term Debt

Shareholders'
Equity

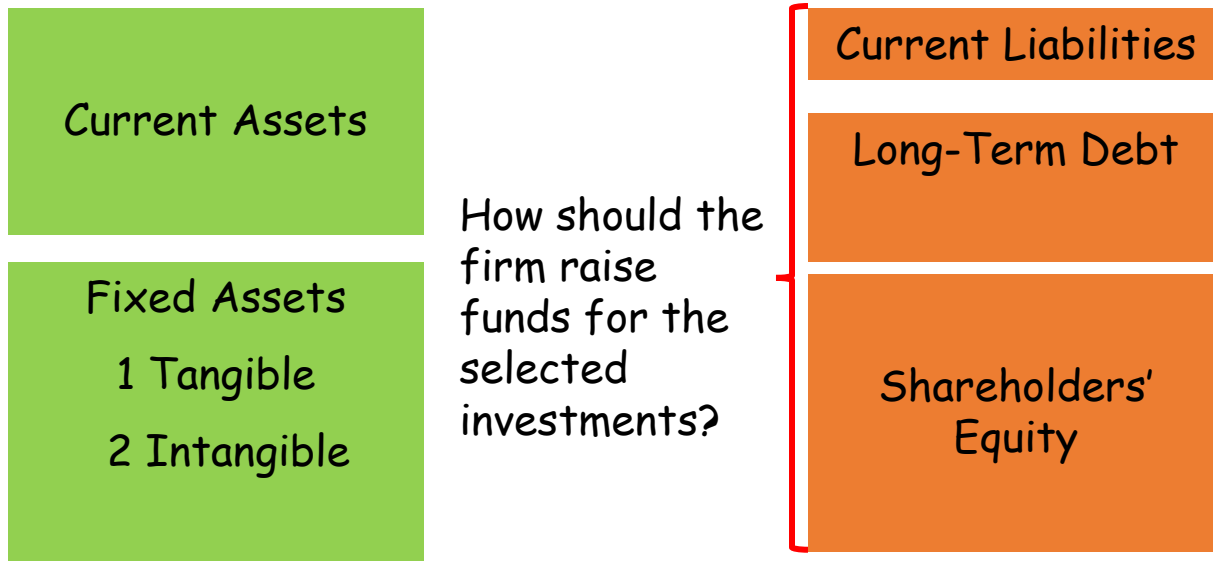
Balance Sheet Model of the Firm

The Capital Budgeting Decision



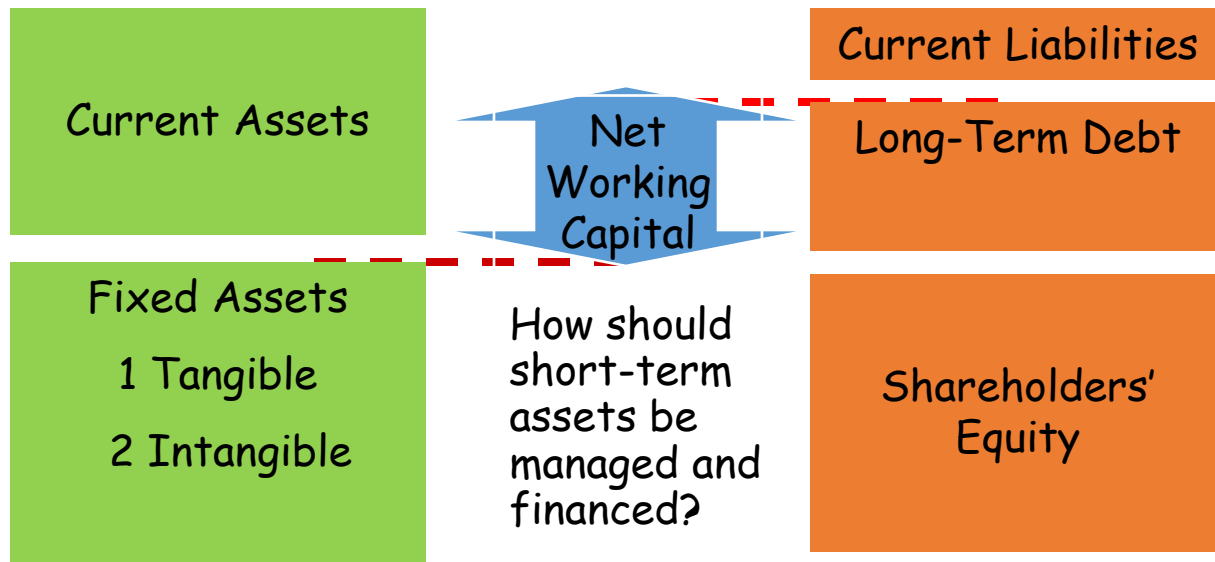
Balance Sheet Model of the Firm

The Capital Structure Decision



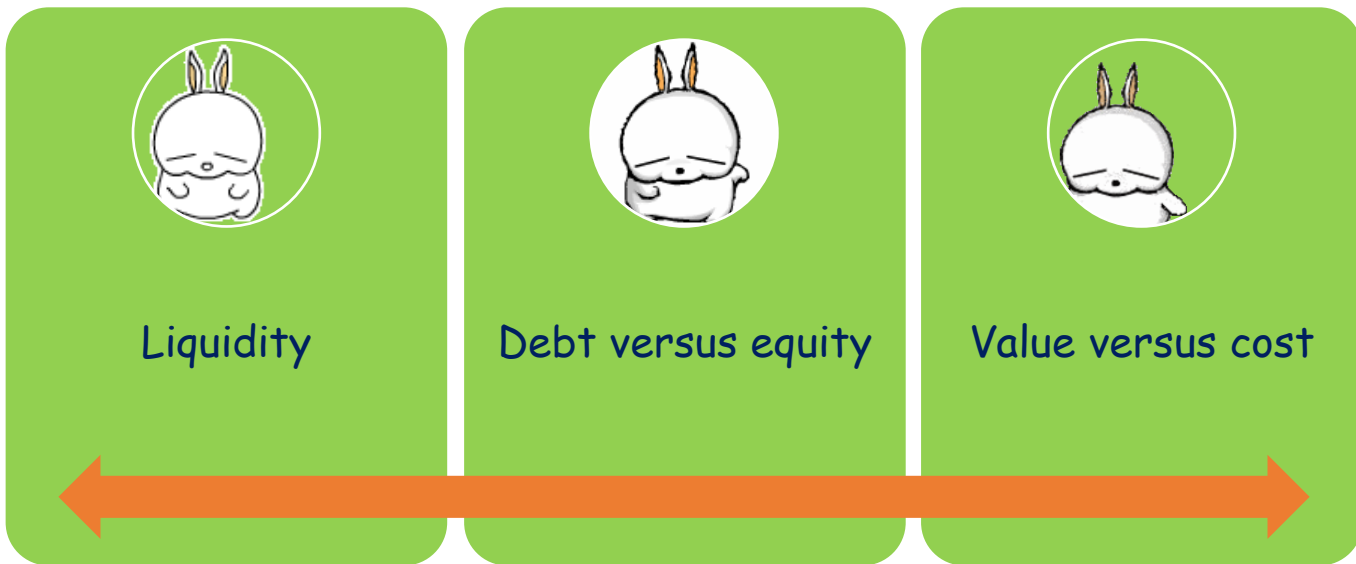
Balance Sheet Model of the Firm

Short-Term Asset Management



Balance Sheet Analysis

- When analyzing a balance sheet, the Finance Manager should be aware of three concerns:

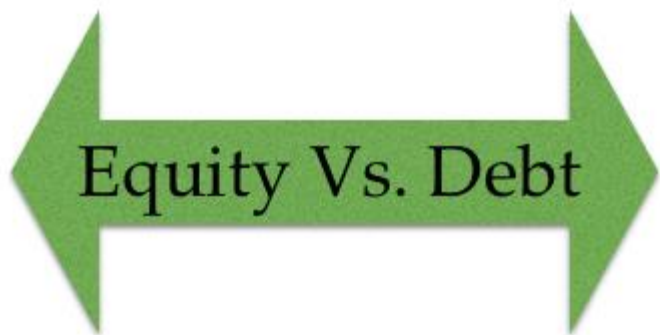


- Refers to the ease and quickness with which assets can be converted to cash—without a significant loss in value
- Current assets are the most liquid.
- Some fixed assets are intangible.
- The more liquid a firm's assets, the less likely the firm is to experience problems meeting short-term obligations.
- Liquid assets frequently have lower rates of return than fixed assets.



Debt versus Equity

- Creditors generally receive the first claim on the firm's cash flow.
- Shareholder's equity is the residual difference between assets and liabilities.



Value versus Cost

- Under Generally Accepted Accounting Principles (GAAP), audited financial statements of firms in the U.S. carry assets at cost.
- Market value is the price at which the assets, liabilities, and equity could actually be bought or sold, which is a completely different concept from historical cost.

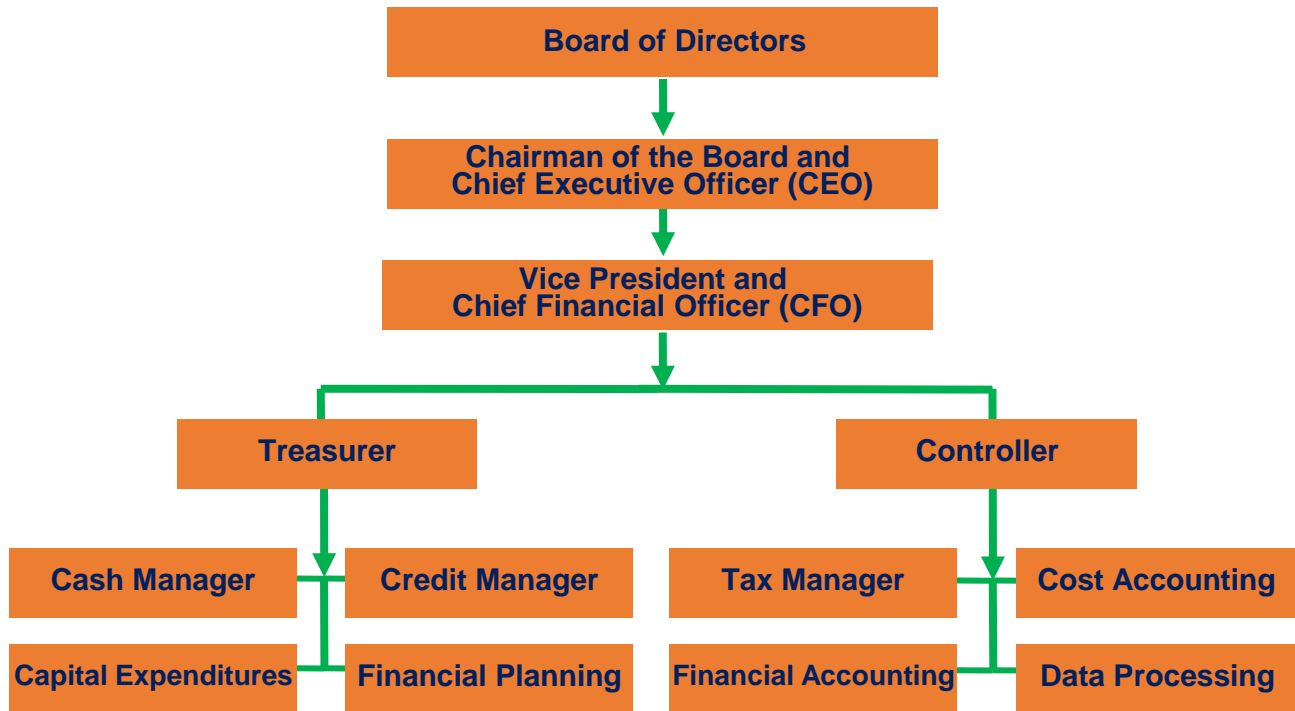


The Financial Manager

- The Financial Manager's primary goal is to increase the value of the firm by:
 - Selecting value creating projects
 - Making smart financing decisions



Hypothetical Organization Chart



The Corporate Firm

- The corporate form of business is the standard method for solving the problems encountered in raising large amounts of cash.
- However, businesses can take other forms.



Forms of Business Organization

- The Sole Proprietorship
- The Partnership
 - General Partnership
 - Limited Partnership
- The Corporation

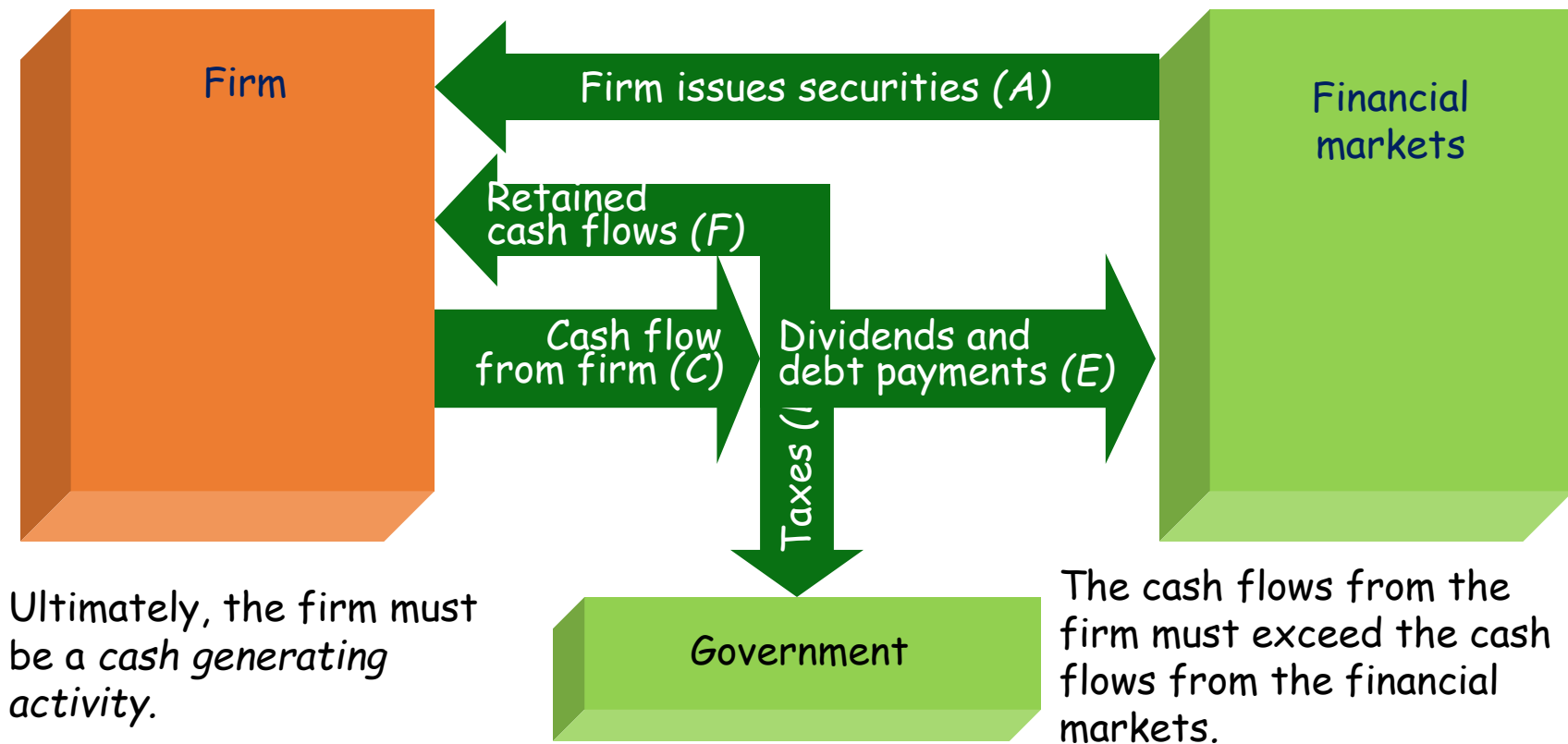


中国中化股份有限公司
SINOCHEM CORPORATION

A Comparison

	Corporation	Partnership
Liquidity	Shares can be easily exchanged	Subject to substantial restrictions
Voting Rights	Usually each share gets one vote	General Partner is in charge; limited partners may have some voting rights
Taxation	Double	Partners pay taxes on distributions
Reinvestment and dividend payout	Broad latitude	All net cash flow is distributed to partners
Liability	Limited liability	General partners may have unlimited liability; limited partners enjoy limited liability
Continuity	Perpetual life	Limited life

The Importance of Cash Flow



Goal of Financial Management

- What should be the goal of a corporation?
 - Maximize profits?
 - Minimize costs?
 - Maximize market share?
 - Maximize the current value of the company's stock?
- Does this mean we should do anything and everything to maximize owner wealth?



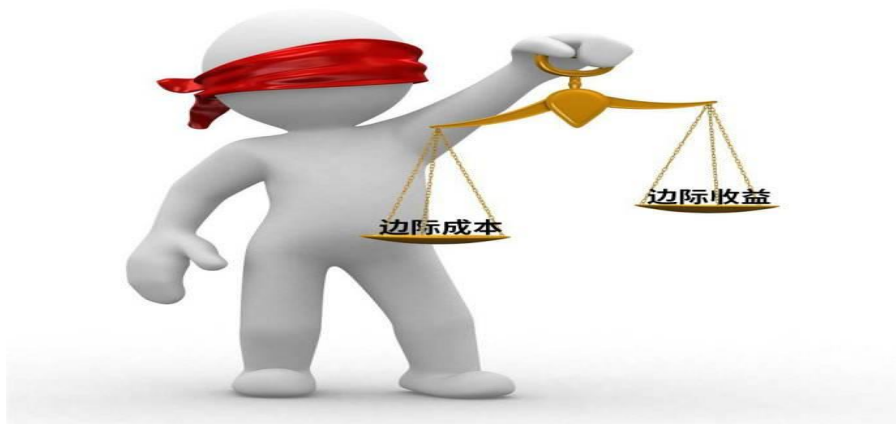
Goal of Financial Management

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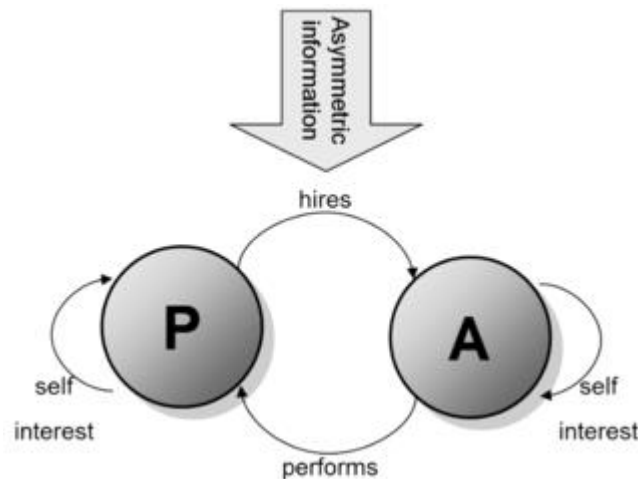
Goal of Financial Management

- What should be the goal of a corporation?
 - Maximize profits?
 - Minimize costs?
 - Maximize market share?
 - Maximize the current value of the company's stock?**



The Agency Problem

- Agency relationship
 - Principal hires an agent to represent his/her interest
 - Stockholders (principals) hire managers (agents) to run the company
- Agency problem
 - Conflict of interest between principal and agent
- Agency cost
 - Direct
 - Indirect



Managerial Goals

- Managerial goals may be different from shareholder goals
 - Expensive perquisites
 - Survival
 - Independence
- Increased growth and size are not necessarily equivalent to increased shareholder wealth

Illustrations: Ajit Ninan



Managing Managers

- ▣ Managerial compensation
 - Incentives can be used to align management and stockholder interests
 - The incentives need to be structured carefully to make sure that they achieve their intended goal
- ▣ Corporate control
 - The threat of a takeover may result in better management
- ▣ Other stakeholders(ESG)



Regulation

- The Securities Act of 1933 and the Securities Exchange Act of 1934
 - Issuance of Securities (1933)
 - Creation of SEC and reporting requirements (1934)
- Sarbanes-Oxley ("Sarbox")
 - Increased reporting requirements and responsibility of corporate directors



The Income Statement

- Measures financial performance over a specific period of time
- The accounting definition of income is:
$$\text{Revenue} - \text{Expenses} \equiv \text{Income}$$



U.S.C.C. Income Statement

The operations section of the income statement reports the firm's revenues and expenses from principal operations.

	Unit:\$
Total operating revenues	2,262
Cost of goods sold	1,655
Selling, general, and administrative expenses	327
Depreciation	90
Operating income	190
Other income	29
Earnings before interest and taxes	219
Interest expense	49
Pretax income	170
Taxes	84
Current	71
Deferred	13
Net income	86
Retained earnings	43
Dividends	43

U.S.C.C. Income Statement

The non-operating section of the income statement includes all financing costs, such as interest expense.

	Unit:\$
Total operating revenues	2,262
Cost of goods sold	1,655
Selling, general, and administrative expenses	327
Depreciation	90
Operating income	190
Other income	29
Earnings before interest and taxes	219
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Pretax income	170
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U.S.C.C. Income Statement

Usually a separate section reports the amount of taxes levied on income.

	Unit:\$
Total operating revenues	2,262
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U.S.C.C. Income Statement

Net income is the
"bottom line."

	Unit:\$
Total operating revenues	2,262
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Income Statement Analysis

- There are three things to keep in mind when analyzing an income statement:
 - International Financial Reporting Standards(IFRS)
 - Non-Cash Items
 - Time and Costs

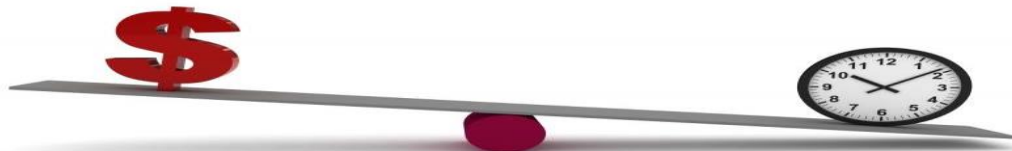


- Depreciation is the most apparent. No firm ever writes a check for "depreciation."
- Another non-cash item is deferred taxes, which does not represent a cash flow.
- Thus, net income is not cash.



Time and Costs

- In the short-run, certain equipment, resources, and commitments of the firm are fixed, but the firm can vary such inputs as labor and raw materials.
- In the long-run, all inputs of production (and hence costs) are variable.
- Financial accountants do not distinguish between variable costs and fixed costs. Instead, accounting costs usually fit into a classification that distinguishes product costs from period costs.



Taxes

- The one thing we can rely on with taxes is that they are always changing
- Marginal vs. average tax rates
 - Marginal - the percentage paid on the next dollar earned
 - Average - the tax bill / taxable income
- Other taxes



Marginal versus Average Rates

- Suppose your firm earns \$4 million in taxable income.
 - What is the firm's tax liability?
 - What is the average tax liability tax rate?
 - What is the marginal tax rate?
- If you are considering a project that will increase the firm's taxable income by \$1 million, what tax rate should you use in your analysis?



Taxable Income Tax Rate

Taxable Income (\$)	Tax Rate(%)
0-50,000	15
50,001- 75,000	25
75,001- 100,000	34
100,001- 335,000	39
335,001-10,000,000	34
10,000,001-15,000,000	35
15,000,001-18,333,333	38
18,333,334	35

Tax liability

- Tax liability: $.15(50,000) + .25(75,000 - 50,000) + .34(100,000 - 75,000) + .39(335,000 - 100,000) + .34(4,000,000 - 335,000) = \$1,360,000$

- Average rate: $1,360,000 / 4,000,000 = .34$ or 34%

Marginal rate comes from the table, and it is 34%

- We should use the marginal rate with an expected additional \$340,000 in taxes.

Taxable Income Tax Rate

Taxable Income (\$)	Tax Rate(%)	Total Tax(\$)	Average Tax Rate(%)
45,000	15	6,750	15
70,000	25	12,500	17.86
95,000	34	20,550	21.63
250,000	39	80,750	32.30
1,000,000	34	340,000	34.00
17,500,000	35	6,100,000	34.86
50,000,000	38	17,500,000	35.00
100,000,000	35	35,000,000	35.00

Net Working Capital

- Net Working Capital \equiv Current Assets - Current Liabilities
- NWC usually grows with the firm



Financial Cash Flow

- In finance, the most important item that can be extracted from financial statements is the actual cash flow of the firm.
- Since there is no magic in finance, it must be the case that the cash flow received from the firm's assets must equal the cash flows to the firm's creditors and stockholders.
- $CF(A) \equiv CF(B) + CF(S)$



The Statement of Cash Flows

- There is an official accounting statement called the statement of cash flows.
- The three components of the statement of cash flows are:
 - Cash flow from operating activities(CFO)
 - Cash flow from investing activities(CFI)
 - Cash flow from financing activities(CFF)



Cash Flow Management

- Earnings can be manipulated using subjective decisions required under IFRS
- Total cash flow is more objective, but the underlying components may also be "managed"
 - Moving cash flow from the investing section to the operating section may make the firm's business appear more stable

Cash Flow Management Made Simple



ärinobe

Financial Statements Analysis

- Common-Size Balance Sheets
 - Compute all accounts as a percent of total assets
- Common-Size Income Statements
 - Compute all line items as a percent of sales
- Standardized statements make it easier to compare financial information, particularly as the company grows.
- They are also useful for comparing companies of different sizes, particularly within the same industry.

RATIO ANALYSIS



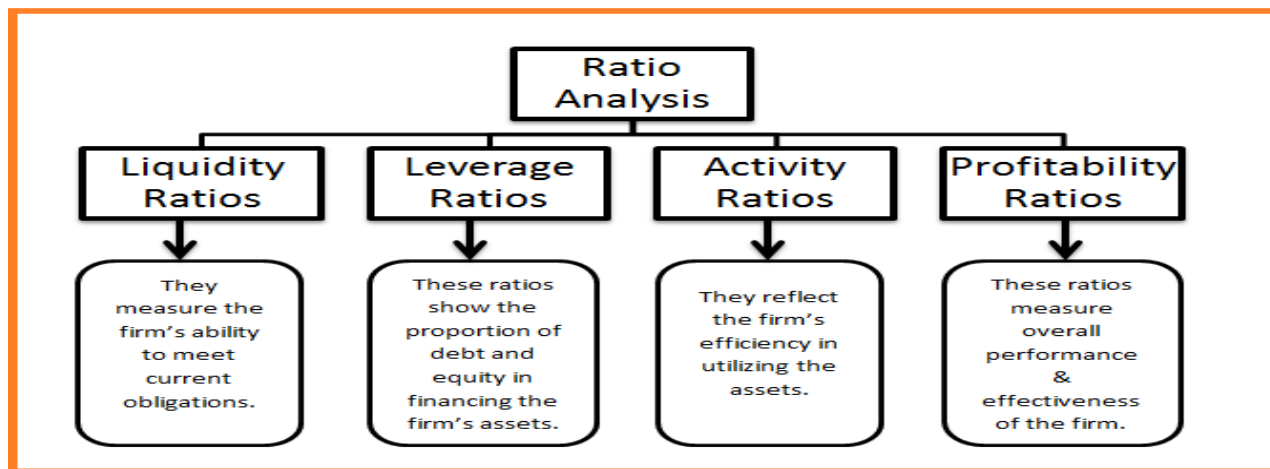
Ratio Analysis

- Ratios also allow for better comparison through time or between companies.
- As we look at each ratio, ask yourself:
 - How is the ratio computed?
 - What is the ratio trying to measure and why?
 - What is the unit of measurement?
 - What does the value indicate?
 - How can we improve the company's ratio?

inventory turns
current ratio
key financial ratios
current assets
days sales outstanding
cost of goods sold
benchmarks
debt to equity DSO

Categories of Financial Ratios

- Short-term solvency or liquidity ratios
- Long-term solvency or financial leverage ratios
- Asset management or turnover ratios
- Profitability ratios
- Market value ratios



Financial Ratios-Example

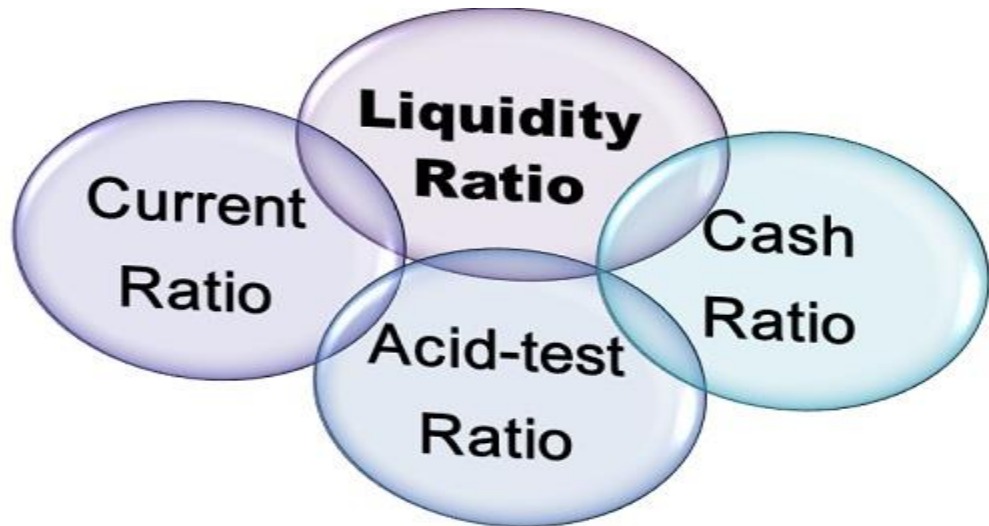
PRUFROCK CORPORATION		
Balance Sheets as of December 31, 2020 and 2021		
(\$ in millions)		
Assets	2020	2021
Current assets		
Cash	84	98
Accounts receivable	165	188
Inventory	393	472
Total	642	708
Fixed assets		
Net plant and equipment	2,731	2,880
Total assets	3,373	3,588
Liabilities and Owners' Equity		
Current liabilities		
Accounts payable	312	344
Notes payable	231	196
Total	543	540
Long-term debt	531	457
Owners' equity		
Common stock and paid-in surplus	500	550
Retained earnings	1,799	2,041
Total	2,299	2,591
Total liabilities and owners' equity	3,373	3,588

Financial Ratios-Example

PRUFROCK CORPORATION		
2021 Income Statement		
(\$ in millions)		
Sales		2,311
Cost of goods sold		1,344
Depreciation		276
Earnings before interest and taxes		691
Interest paid		141
Taxable income		550
Taxes (34%)		187
Net income		363
Dividends	121	
Addition to retained earnings	242	

Computing Liquidity Ratios

- Current Ratio = CA / CL
 - $708 / 540 = 1.31$ times
- Quick Ratio = $(CA - \text{Inventory}) / CL$
 - $(708 - 422) / 540 = .53$ times
- Cash Ratio = Cash / CL
 - $98 / 540 = .18$ times



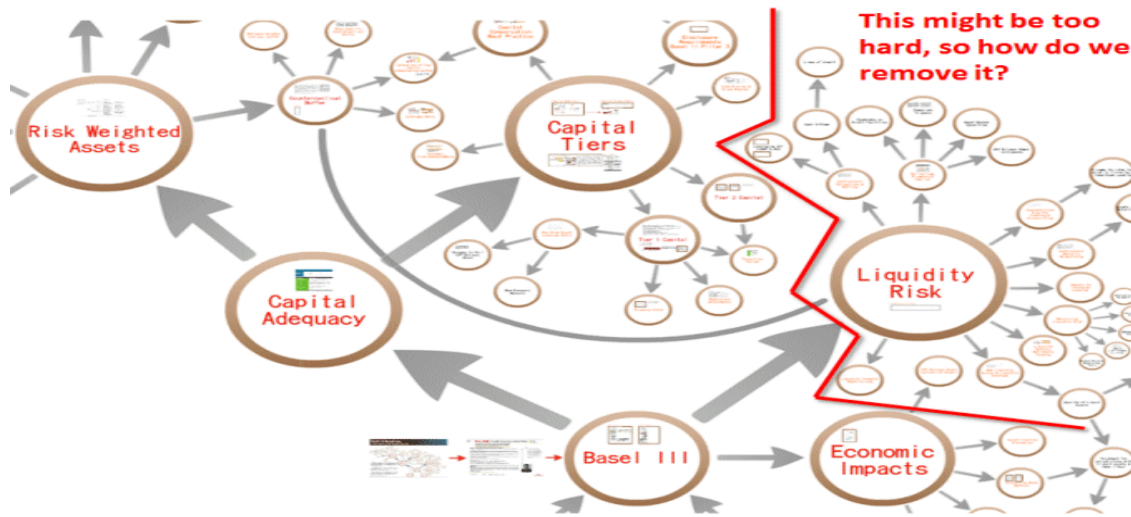
Computing Leverage Ratios

- Total Debt Ratio = $(TA - TE) / TA$
 - $(3588 - 2591) / 3588 = 28\%$
- Debt/Equity = TD / TE
 - $(3588 - 2591) / 2591 = 38.5\%$
- Equity Multiplier = $TA / TE = 1 + D/E$
 - $1 + .385 = 1.385$



Computing Coverage Ratios

- ▣ Times Interest Earned = $\text{EBIT} / \text{Interest}$
 - $691 / 141 = 4.9$ times
- ▣ Cash Coverage = $(\text{EBIT} + \text{Depreciation} + \text{Amortization}) / \text{Interest}$
 - $(691 + 276) / 141 = 6.9$ times



Computing Inventory Ratios

- Inventory Turnover = Cost of Goods Sold / Inventory
 - 1344 / 422 = 3.2 times
- Days' Sales in Inventory = 365 / Inventory Turnover
 - 365 / 3.2 = 114 days



Computing Receivables Ratios

- Receivables Turnover = Sales / Accounts Receivable
 - $2311 / 188 = 12.3$ times
- Days' Sales in Receivables = $365 / \text{Receivables Turnover}$
 - $365 / 12.3 = 30$ days



Computing Total Asset Turnover

- Total Asset Turnover = Sales / Total Assets
 - $2311 / 3588 = .64$ times
 - It is not unusual for $TAT < 1$, especially if a firm has a large amount of fixed assets.



Computing Profitability Measures

- Profit Margin = Net Income / Sales
 - $363 / 2311 = 15.7\%$
- Return on Assets (ROA) = Net Income / Total Assets
 - $363 / 3588 = 10.1\%$
- Return on Equity (ROE) = Net Income / Total Equity
 - $363 / 2591 = 14.0\%$
- EBITDA Margin = EBITDA / Sales
 - $967 / 2311 = 41.8\%$



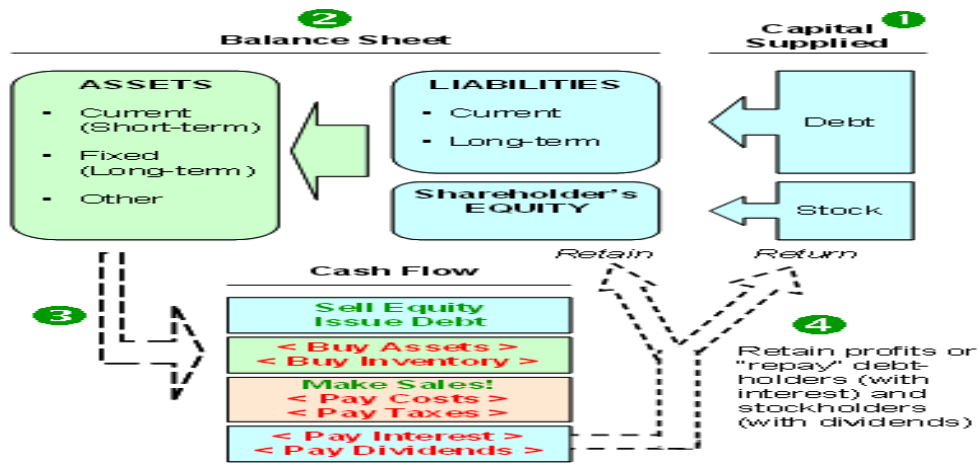
Computing Market Value Measures

- Market Capitalization = \$88 per share \times 33 million shares = 2904 million
- PE Ratio = Price per share / Earnings per share
 - $88 / 11 = 8$ times
- Market-to-book ratio = market value per share / book value per share
 - $88 / (2591 / 33) = 1.12$ times
- Enterprise Value (EV) = Market capitalization + Market value of interest bearing debt - cash
 - $2904 + (196 + 457) - 98 = 3465$
- EV Multiple = EV / EBITDA
 - $3465 / 967 = 3.6$ times



Using Financial Statements

- Ratios are not very helpful by themselves: they need to be compared to something
- Time-Trend Analysis
 - Used to see how the firm's performance is changing through time
- Peer Group Analysis
 - Compare to similar companies or within industries



The Du Pont Identity

- $ROE = NI / TE$
- Multiply by 1 and then rearrange:
 - $ROE = (NI / TE) (TA / TA)$
 - $ROE = (NI / TA) (TA / TE) = ROA * EM$
- Multiply by 1 again and then rearrange:
 - $ROE = (NI / TA) (TA / TE) (Sales / Sales)$
 - $ROE = (NI / Sales) (Sales / TA) (TA / TE)$
 - $ROE = PM * TAT * EM$

Net Profit Margin	Total Asset Turnover	Equity Multiplier	
$\left(\frac{Profit}{Sales} \right)$	$\cdot \left(\frac{Sales}{Assets} \right)$	$\cdot \left(\frac{Assets}{Equity} \right)$	$= ROE$

The Du Pont Identity

- $ROE = \text{net profit} / \text{equity}$
- 分解
- $A/B = A/C * C/D * D/E * E/F * \dots * Z/B$
- $A/B = A/B * 1 * 1$

Using the Du Pont Identity

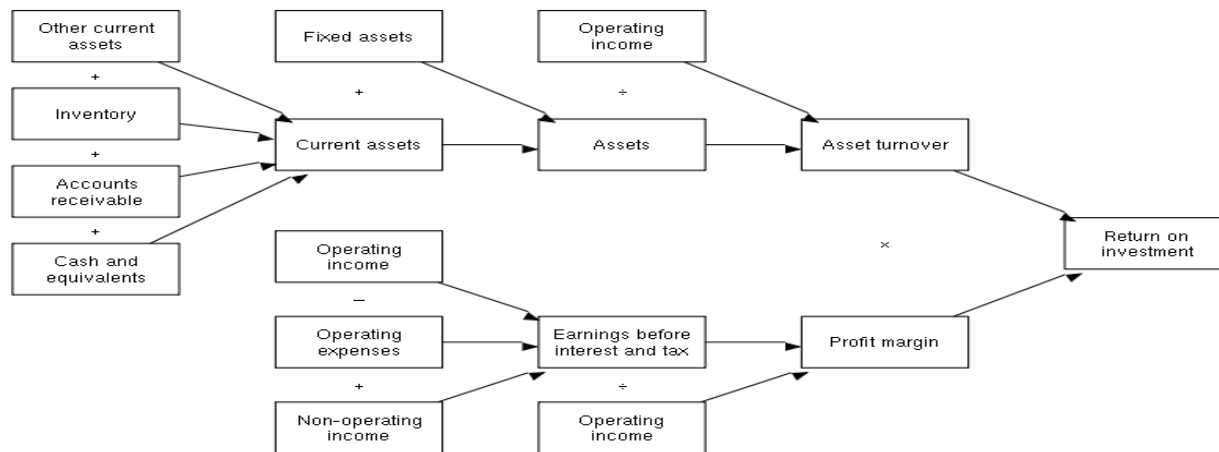
- $ROE = PM * TAT * EM$
 - Profit margin is a measure of the firm's operating efficiency - how well it controls costs.
 - Total asset turnover is a measure of the firm's asset use efficiency - how well it manages its assets.
 - Equity multiplier is a measure of the firm's financial leverage.



Calculating the Du Pont Identity

- ROA = 10.1% and EM = 1.39
 - $ROE = 10.1\% \times 1.385 = 14.0\%$
- PM = 15.7% and TAT = 0.64
 - $ROE = 15.7\% \times 0.64 \times 1.385 = 14.0\%$

DuPont Model

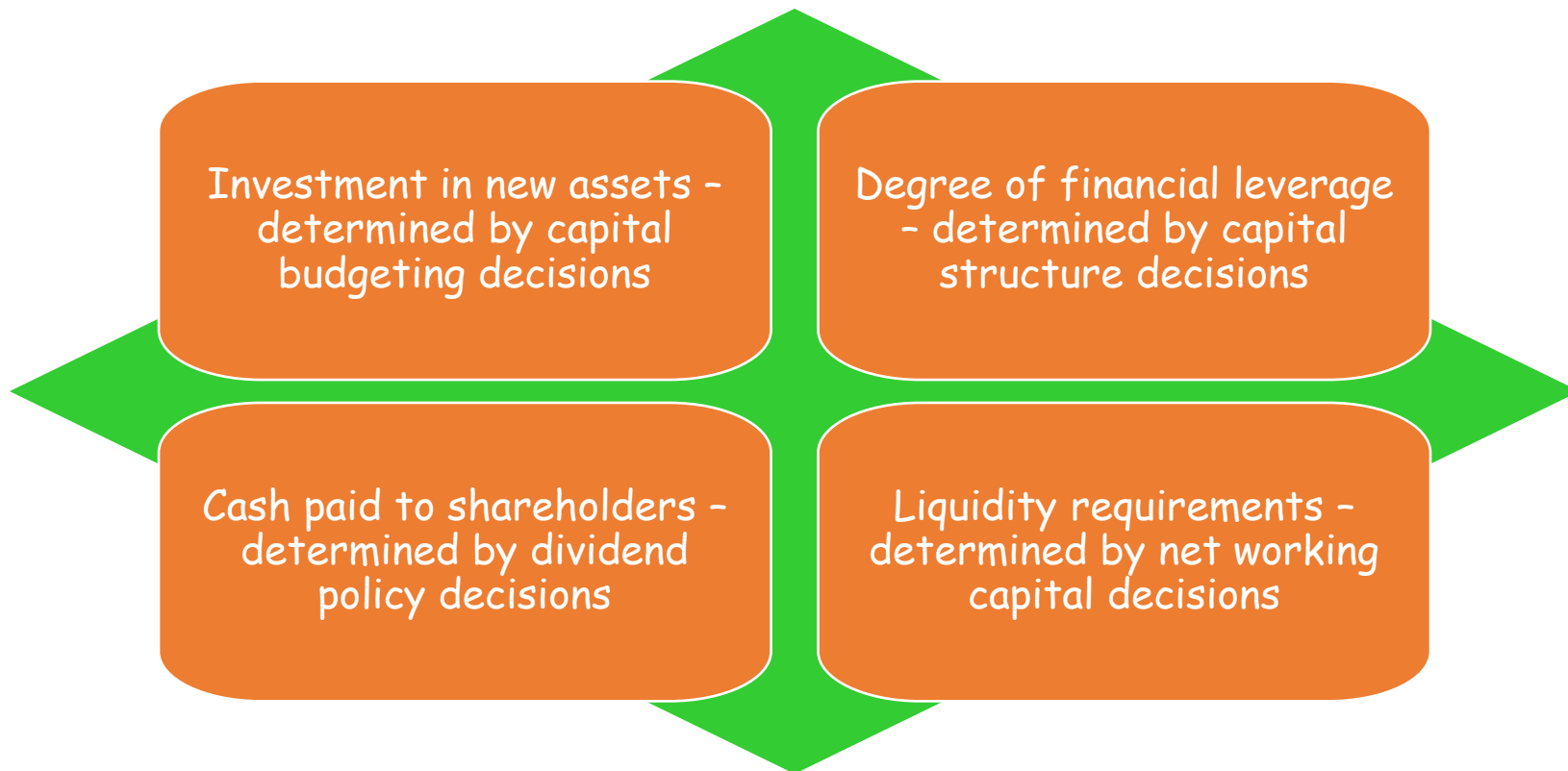


Potential Problems

- There is no underlying theory, so there is no way to know which ratios are most relevant.
- Benchmarking is difficult for diversified firms.
- Globalization and international competition makes comparison more difficult because of differences in accounting regulations.
- Firms use varying accounting procedures.
- Firms have different fiscal years.
- Extraordinary, or one-time, events



Financial Models



Financial Planning Ingredients

- Sales Forecast - many cash flows depend directly on the level of sales (often estimate sales growth rate)
- Pro Forma Statements - setting up the plan as projected (pro forma) financial statements allows for consistency and ease of interpretation
- Asset Requirements - the additional assets that will be required to meet sales projections
- Financial Requirements - the amount of financing needed to pay for the required assets
- Plug Variable - determined by management decisions about what type of financing will be used (makes the balance sheet balance)
- Economic Assumptions - explicit assumptions about the coming economic environment

Percent of Sales Approach

- Some items vary directly with sales, others do not.
- Income Statement
 - Costs may vary directly with sales - if this is the case, then the profit margin is constant
 - Depreciation and interest expense may not vary directly with sales - if this is the case, then the profit margin is not constant
 - Dividends are a management decision and generally do not vary directly with sales - this affects additions to retained earnings



Percent of Sales Approach

- Balance Sheet
 - Initially assume all assets, including fixed, vary directly with sales.
 - Accounts payable also normally vary directly with sales.
 - Notes payable, long-term debt, and equity generally do not vary with sales because they depend on management decisions about capital structure.
 - The change in the retained earnings portion of equity will come from the dividend decision.
- External Financing Needed (EFN)
 - The difference between the forecasted increase in assets and the forecasted increase in liabilities and equity.



Percent of Sales and EFN

- External Financing Needed (EFN) can also be calculated as:

$$\left(\frac{\text{Assets}}{\text{Sales}} \right) \times \Delta \text{Sales} - \left(\frac{\text{Spon Liab}}{\text{Sales}} \right) \times \Delta \text{Sales} - (PM \times \text{Projected Sales}) \times (1-d)$$



External Financing and Growth

- At low growth levels, internal financing (retained earnings) may exceed the required investment in assets.
- As the growth rate increases, the internal financing will not be enough, and the firm will have to go to the capital markets for financing.
- Examining the relationship between growth and external financing required is a useful tool in financial planning.



The Internal Growth Rate

HOFFMAN COMPANY Income Statement and Balance Sheet Income Statement(\$)

Sales	500
Costs	400
Taxable income	100
Taxes (34%)	34
Net income	66
Dividends	22
Addition to retained earnings	44

Balance Sheet

Assets			Liabilities and Owners' Equity		
	\$	Percentage of Sales		\$	Percentage of Sales
Current assets	200	40%	Total debt	250	n/a
Net fixed assets	300	60%	Owners' equity	250	n/a
Total assets	500	100%	Total liabilities and owners' equity	500	n/a

The Internal Growth Rate

- The internal growth rate tells us how much the firm can grow assets using retained earnings as the only source of financing.
- Using the information from the Hoffman Co.
 - $ROA = 66 / 500 = .132$
 - $b = 44 / 66 = .667$

$$\begin{aligned}\text{Internal Growth Rate} &= \frac{ROA \times b}{1 - ROA \times b} \\ &= \frac{.132 \times .667}{1 - .132 \times .667} = .0965 \\ &= 9.65\%\end{aligned}$$

The Sustainable Growth Rate

- The sustainable growth rate tells us how much the firm can grow by using internally generated funds and issuing debt to maintain a constant debt ratio.
- Using the Hoffman Co.
 - $ROE = 66 / 250 = .264$
 - $b = .667$

$$\begin{aligned}\text{Sustainable Growth Rate} &= \frac{ROE \times b}{1 - ROE \times b} \\ &= \frac{.264 \times .667}{1 - .264 \times .667} = .214 \\ &= 21.4\%\end{aligned}$$

Determinants of Growth

- Profit margin - operating efficiency
- Total asset turnover - asset use efficiency
- Financial leverage - choice of optimal debt ratio
- Dividend policy - choice of how much to pay to shareholders versus reinvesting in the firm



Some Caveats

- Financial planning models do not indicate which financial policies are the best.
- Models are simplifications of reality, and the world can change in unexpected ways.
- Without some sort of plan, the firm may find itself adrift in a sea of change without a rudder for guidance.



Useful Financial Ratios

□ SHORT-TERM SOLVENCY RATIOS

- Current ratio = Current assets \div Current liabilities
- Quick ratio = (Current assets - Inventory) \div Current liabilities
- Cash ratio = Cash \div Current liabilities

□ FINANCIAL LEVERAGE RATIOS

- Total debt ratio = Total debt \div Total assets = (Total assets - Total equity) \div Total assets
- Debt-equity ratio = Total debt \div Total equity
- Equity multiplier = Total assets \div Total equity = 1 + debt-equity ratio
- Times interest earned = Earnings before interest and taxes \div Interest
- Cash coverage = (Earnings before interest and taxes + depreciation + amortization) \div Interest

Useful Financial Ratios

□ TURNOVER RATIOS

- $\text{Inventory turnover} = \text{Cost of goods sold} \div \text{Inventory}$
- $\text{Days sales in inventory} = 365 \div \text{Inventory turnover}$
- $\text{Receivables turnover} = \text{Sales} \div \text{Receivables}$
- $\text{Days' sales in receivables} = 365 \div \text{Receivables turnover}$
- $\text{Total asset turnover} = \text{Sales} \div \text{Total assets}$
- $\text{Days in inventory} = \text{Days in period} \div \text{Inventory turnover}$

Useful Financial Ratios

▣ PROFITABILITY MEASURES

- Profit margin = Net income \div Sales
- Return on assets = Net income \div Total assets
- Return on equity = Net income \div Total equity
- EBITDA margin = EBITDA \div Sales

▣ MARKET VALUE RATIOS

- Price-to-earnings ratio = Market price per share \div Earnings per share
- Market-to-book ratio = Market price per share \div Book value per share
- Market capitalization = Market price per share \times Shares Outstanding
- Enterprise Value (EV) = Market capitalization + Market value of interest bearing debt - cash
- EV Multiple = EV \div EBITDA

Assignment 1

- Chapter 2: 12-14
- Chapter 3: 4-5 15-19
- Deadline: 2025.03.31



Thanks!!!
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