Economics:

1. Normal profit: zero economic profit
2. **长期均衡点 MR=MC, breakeven point: MR=ATC**
3. Constant returns of scale

4. $MR = P \times \left(1 - \left|\frac{1}{E_P}\right|\right)$
5. The marginal cost schedule of a company in a perfectly competitive market determines its supply function
6. **Monopoly Competition:** collusion is less likely in a market when companies have similar market shares.
7. **Oligopoly:** dominant company's market share will tend to decrease over time.
8. **Monopoly:** government set price at long-term average cost.
9. Herfindahl-Hirschmann Index = 各个市场参与者市场份额的平方和，不足是未能反映进入壁垒

10. full employment vs natural unemployment rate
11. increased household wealth ➔ increase in consumption expenditure
12. AD/AS 曲线的横轴是 Real GDP
13. $Sustainable\ growth\ rate\ =\ \Delta\%\ Labor\ +\ \Delta\%\ Labor\ productivity$ 可以当作 ROE 的 benchmark
14. **Solow/Neoclassical Model**: $Y = A \cdot K^{\alpha} \cdot L^{\beta}$, A 是 Total factor productivity
15. **Potential output growth** = $\Delta Y\ /\ Y = \Delta A/A + \alpha \cdot \Delta K\ /\ K + \beta\ \Delta L\ /\ L$. 其中，α和β代表了增量 GDP 中，Labor 和 capital 所取得的收益比例

16. productivity (per hour worked) 会在 trough 处达到最高，因为就业不足，只能压榨现有员工
17. Real business cycle models (RBCM) – new classical schools. Shock causes the cycle, e.g., Rising energy prices.
18. **Cost-push inflation**: tighter labor market put pressure on wages, compelling home retailers to raise prices.

19. Precaution money demand is directly related to GDP.
20. Money Neutrality: 长期下，money supply 与 price 相关，与 GDP 和 unemployment 无关
21. Neutral interest rate ➔ stable inflation + stable economic growth rate
22. **Ricardian Equivalence:** 扩张的财政政策会被未来的加税抵消，在短期内不能刺激 C/I，反而增加 Saving
23. **Crowding-out effect:** 扩张性财政政策，增加了储蓄，推高利率，降低 I

24. **Ricardian Trade Model:** 比较优势，定价在交易对手国的 autarkic price 时利益最大化，科技是助推
25. Heckscher-Ohlin Model：资源密集 vs.劳动密集
26. **Free-trade Area**: NAFTA
27. **Customs Union**: 一致对外 "against others"
28. **Common Market**: 要素市场打通
29. Economic Union: 经济政策 ➔ EU
30. Monetary Union: 统一货币 ➔ Euro Zone
31. Capital account: 采矿权属于资本项目支出
32. Current account: **dividend 汇回属于经常项目**
32. **Current account deficit**: low private saving/hight consumption + high private investment + G deficit，其中只有 Investment 可以产生未来收入，从而不会影响 credit risk

33. $Real\ exchange\ rate\ (USD/EUR)\ =\ Nominal\ exchange\ rate\ (USD/EUR) \times \frac{Base\ currency\ prices\ (EUR)}{Pricing\ currency\ Prices\ (USD)}$
34. $Forward\ rate\ /\ Spot\ rate\ =\ (1 + pricing\ CCY\ interest\ rate)\text{^}n/(1 + base\ CCY\ interest\ rate)\text{^}n$
35. **Direct exchange rate:** 0.912 GBP/USD, local is GBP, **Indirect exchange rate:** 1.234 USD/GBP, local is GBP 本地货币在前，直接标价；本币在后，间接标价。
36. 1.2 Pricing/Base ➔ 1.4 Price/Base，base appreciate = 1.4/1.2-1=16.7%; 1.2 Pricing/Base ➔ 1.4 Price/Base, pricing depreciate = 1.2/1.4-1 = -14.3%
36. Trade deficit will likely be offset by capital account surplus

Equity:

1. Depository Receipt (DR): 类似 ETF，通过银行持有外国股票, LEVEL III ADRs: high listing fee; Unsponsored DR 投票权留给银行
2. Maintenance Margin call: 先确定 Debt 部分的金额，D/MM = MMC price×shares
3. Take the market: 匹配交易对手价格
4. make a new market: 由于当前买/卖一价，make the market: 匹配当前买/卖一价
6. behind the market: 落后于目前买/卖一价， far from the market, 报最差价格排队。
7. order 执行顺序：价格>显性>提交时间

8. **Price weighting index:** 股价加权平均，高价股权重高，Stock-split 需要调整
9. **MV weighting index:** ***Momentum tilt*** 大盘股权重高，float-adjusted – public available & free-float-adjusted – public and domestic
10. **Equal weighting index:** HPR 的算术平均，small cap bias, 总是需要 rebalance
11. **Fundamental weighting index:** value tilt
12. Commodity index: values are based on future contract prices
13. Hedge fund index: determined by the constituents of the index
14. **fixed-income index:** larger investment universe, harder to price, less liquid.

15. January effect anomaly: tax-loss selling & window dressing of holdings
16. value effect and Value stock: higher than average dividend + low PE + low PB
17. growth stock: low dividend + high PE + high PB
18. P/E, P/B 同业对比，越低越被低估

18. sector rotation strategy: 看准时机投某个行业
19. cyclical/non-cyclical classifying 的问题：1) 自然成长率; 2) global operation
20. Life-cycle: 横轴时间，纵轴 demand
21. Life-cycle-Growth: price war
22. Life-cycle-Embryo: high price
23. High barriers to entry + weak pricing power = High barriers to exit
24. Three stage DDM: 适合 just entering the growth phase
25. **Gordon vs. P/E:** $\frac{P}{E} = \frac{D/E}{r-g} = \frac{payout\ ratio}{r-g}$
26. P/E based on comparable: 1. Law of one price, 2. Historical information
27. P/E based on fundamental: future expectations

1. valuation allowance on DTA - USGAAP
2. AOR 用 365 天,

Derivatives:

1. forward commitments provide linear payoffs
2. contract for differences (CFD) = 现金交割
3. future price limits: help clearinghouse manage its credit exposure
4. Initial margin 通常不超过 10%， MM 低于 IM
5. forward & Swaps 有 default risk, future 受 clearinghouse 保护而没有
6. currency swaps are commonly used to manage interest rate risk
7. derivatives speculation could benefit the financial markets and thus society
8. financial contagion 蔓延 – speculators on leverage
9. Forward Rate Agreement (FRA): **2×3 FRA: 60 天后以固定利率借入 1 个月**
10. synthetic FRA: long 90 days eurodollar + short 60 days eurodollar
11. cash settle of FRA = 融资期限内利息损益折现到中间点

8. net cost of carrying asset = convenience benefit = benefit – cost
9. F0(t)=S0*e^[(rf-i+c)*t]
10. F(a/b) = S(a/b)*e^[(ra-rb)*T]
11. value of a swap is typically obtained through replication
12. **expected future price 上升 V fix > V float**
13. European put option 的 value 与时间可能正相关也可能负相关 (deep in the money)
14. call option 价值与 dividend 负相关，put option 与 dividend 正相关
15. call option 与 rf 正相关，put 与 rf 负相关

$$c = S_0 e^{-qT} N(d_1^*) - K e^{-rT} N(d_2^*)$$

16. $$d_1^* = \frac{\ln(S_0/K) + (r - q + \sigma^2/2)T}{\sigma\sqrt{T}} \qquad d_2^* = d_1^* - \sigma\sqrt{T}$$
17. max(St-K/(1+rf), 0) <= c <= St
18. K>= p >= max(K/(1+rf) – St, 0)