Schweser Review Workshop Mind Maps

Private Wealth

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Level III CFA®

KAPLAN SCHWESER

SCHWESER REVIEW WORKSHOP MIND MAPS: PRIVATE WEALTH
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Capital Market Expectations

- Apply economic tools and concepts to the formation of capital market expectations
- This is a collection of applied economic concepts
  - Not the economic theory of Levels I and II

Client objectives and constraints
+ **capital market expectations (E(R), σ, and ρ of asset classes)**
→ SAA

- You should not expect any forecasting tool for risky assets to work consistently at all times
- Multiple tools are likely to lead to differing conclusions
  - Providing valuable insight into market consensus or lack of consensus

Formulating Capital Market Expectations

Challenges in Forecasting

1. Limitations to using economic data
   (lags, revisions, methodologies, index rebasing)
2. Data measurement *(transcription errors, survivorship bias, appraisal (smoothed) data)*
3. Limitations of historical estimates—*how long a data set to use? (problem of regime changes)*
4. *Ex post* (realized) risk can lead us to underestimate *ex ante* (anticipated) risk
5. Biased methods *(data mining, time period bias)*
6. Failing to account for conditioning information *(e.g., beta might vary through the business cycle)*
7. Misinterpretation of correlations
8. Psychological biases →
   - Anchoring *(to initial data, impressions, estimates)*
   - Status quo *(forecast based on recent past)*
   - Confirmation
   - Overconfidence
   - Prudence *(avoid extreme forecasts)*
   - Availability *(events that have left a strong impression/are easy to recall)*
9. Model, parameter, and input uncertainty

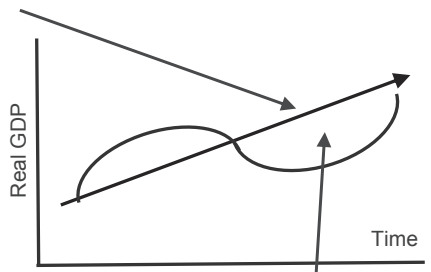
Economic Growth

Slope represents the trend rate of growth over time; a change in slope is a change in rate of growth

Basic model forecasts trend growth as **sum** of:

- Growth in labor input
  - Population growth *plus l*abor force participation growth
- Growth in capital per worker
- Growth in total factor productivity (TFP)

Over the LT, average bond returns and equity capital appreciation returns must be anchored to trend growth



Output gap—associated with declining rate of inflation

Exogenous (unanticipated) shocks can disrupt trend growth

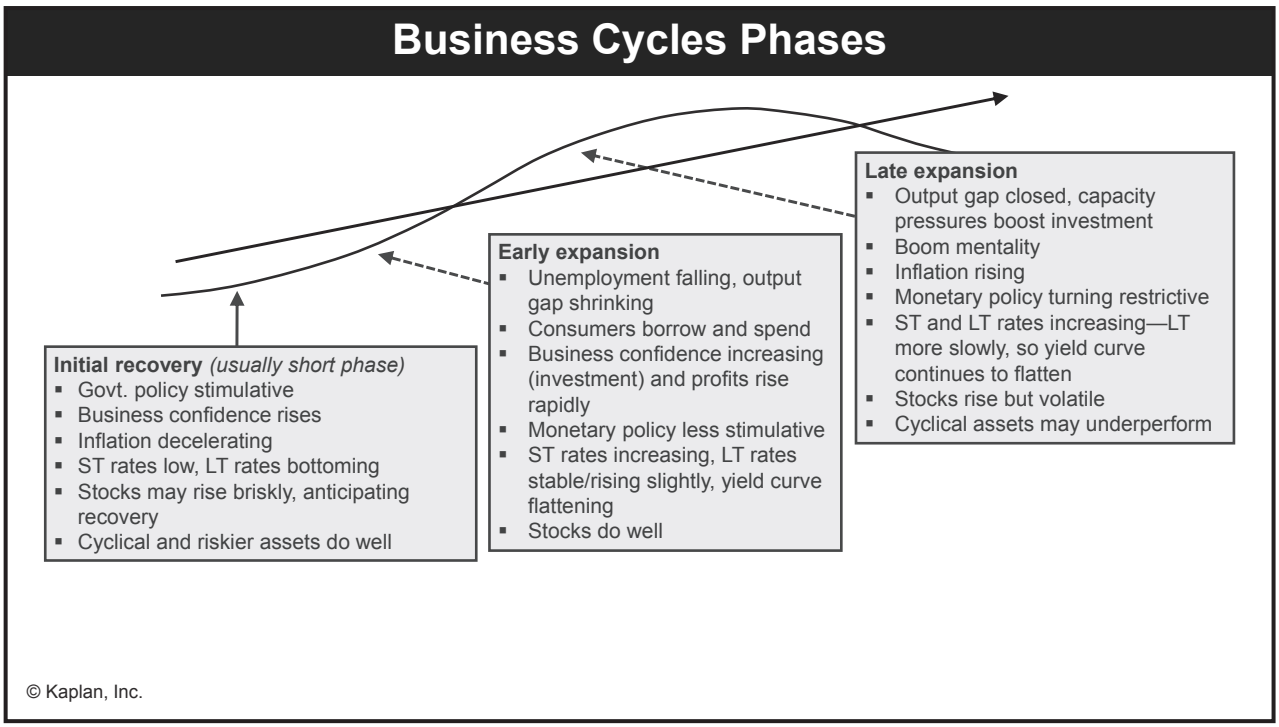
- Government policy changes, political events, technological progress, natural disasters, new natural resources, financial crises

Forecasting Approaches

Econometrics (multiple regression)
- Complex and time-consuming
- Historical relationship among variables used to forecast
- Structural and reduced form (looser connection to theory, may be purely data-driven) variants
- Danger: estimation errors and changes in relationships (e.g., regime changes)

Economic indicators, simple and available
- Leading (also coincident, lagging)
- Prime focus on identifying turning points
- Diffusion index measures proportion of indicators pointing up/down
- Can generate false signals
- Revisions may overfit past data and reduce reliability of forward forecasts

Checklist approach
- Simple but subjective and time-consuming


Business Cycles Phases
Late expansion
Output gap closed, capacity pressures boost investment
Boom mentality
Inflation rising
Monetary policy turning restrictive
ST and LT rates increasing—LT more slowly, so yield curve continues to flatten
Stocks rise but volatile
Cyclical assets may underperform
Early expansion
Unemployment falling, output gap shrinking
Consumers borrow and spend
Business confidence increasing (investment) and profits rise rapidly
Monetary policy less stimulative
ST rates increasing, LT rates stable/rising slightly, yield curve flattening
Stocks do well
Initial recovery (usually short phase)
Govt. policy stimulative
Business confidence rises
Inflation decelerating
ST rates low, LT rates bottoming
Stocks may rise briskly, anticipating recovery
Cyclical and riskier assets do well
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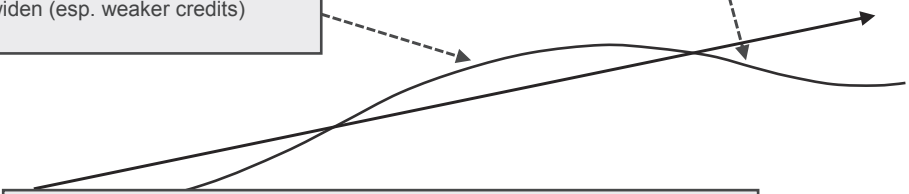
Business Cycles Phases

Slowdown
- Rising rates, fewer viable investments, accumulated debt
- Business confidence wavers
- Inflation still increasing
- Govt. policy turning neutral
- ST and LT rates peaking and then decline—yield curve may invert (esp. if central bank continues to push up ST rates)
- Credit spreads widen (esp. weaker credits)
- Stocks declining

Contraction *(typically 12–18 months)*
- Business confidence weak, investment spending drops, major corporate failures
- Govt. policy easing; profits drop sharply
- Credit spreads widen until signs of turn
- ST and LT rates declining—yield curve steepens substantially
- Stocks decrease, but increase in later stages anticipating the economic turn



Market expectations and the business cycle—issues
- Phases are variable in length and amplitude
- Hard to distinguish between cyclical and secular (longer-term) effects
- How markets respond to business cycle as uncertain as cycle itself
- Inflation expectations tend to be countercyclical

Inflation

- Widely believed that outright deflation damages the economy (nominal debt more onerous to service, and reduced effectiveness of stimulative monetary policy)
- Moderate inflation seen to impose only modest costs on economy

Inflation within expectations
- Cash: earn real rate of interest
- Bonds: ST yields rise/fall more than LT yields
- Equity: no impact given predictable economic growth
- Real estate: neutral with typical returns

Inflation above expectations
- Cash: does well, with increasing yield
- Bonds: does poorly as prices decline (nominal bonds only)
- Equity: does poorly, with exceptions for companies able to pass through inflation
- Real estate: does well as asset values increase

Deflation
- Cash: low return with approx. 0% interest rate (but ↑ real purchasing power)
- Bonds: attractive as future cash flows have ↑ purchasing power (if no default)
- Equity: does poorly with declining economic activity and asset values
- Real estate: does poorly with declining property values

Government Policy

Monetary
- Stimulative (loose): money supply ↑, ST rates ↓
- Contractionary (tight): money supply ↓, ST rates ↑
- ST rates indirectly affect LT rates

Fiscal
- Stimulative: deficit ↑
- Contractionary: deficit ↓
- Budget deficit = G – T
- *Automatic stabilizers* mitigate cyclical fluctuations

Monetary policy crucial in short to medium term (effect on cyclical patterns); fiscal policy key in long run

The **Taylor rule** can be used to *predict the next change in ST rates:*

$$\text{Real } R_{target} = \text{policy-neutral real ST rate} + 0.5\,(\text{real GDP growth}_{expected} - \text{real GDP growth}_{trend}) + 0.5\,(\text{inflation}_{expected} - \text{inflation}_{target})$$

$$\text{Nominal } R_{target} = \text{real } R_{target} + \text{inflation}_{expected}$$

Government Policy

Negative interest rates

- Likely associated with deflation and regarded as unsustainable
- Post 2007–2008 great recession, they have persisted, despite quantitative easing (which was expected to have a stimulative effect)
- They complicate economic forecasting, what r_f?
  - Use the Taylor rule policy neutral rate?
  - Forecast possible paths to a long-term + r_f?
  - Assume we are in the early recovery stage of the business cycle?

Government policy and the yield curve

Fiscal and monetary policy expansive

- The economy should improve
- Yield curve sharply upward sloping in anticipation

Fiscal and monetary policy restrictive

- The economy should contract
- Yield curve downward sloping in anticipation

International Aspects

Interactions

- Macroeconomic linkages (lower impact on larger more diversified economies)
  - Current account and capital account linkages [(X – M) = (S – I) + (T – G)]
    - Example: tax cut (T↓) → ↑I → ↓(X – M)—*increase in current a/c deficit and capital a/c surplus (net inward investment)*
    - Growth in other countries likely to increase as the tax cut stimulates demand for their exports, which in turn generates additional demand within their domestic economies
- Interest rate and currency linkages

Warning signs for emerging markets

1. Irresponsible fiscal and monetary policies: **government deficit/GDP ratio > 4%**
2. Insufficient economic growth: **real growth < 4%**
3. Overvalued currency and twin deficit: **current a/c deficit > 4% of GDP**
4. Excessive foreign-denominated debt: **foreign debt/GDP ratio > 50%**
   debt/current a/c receipts > 200%
5. Inadequate short-term liquidity: **foreign currency reserves/ST foreign currency debt ratio < 100%**
6. Risky political situation and government policies not supportive of LT growth

Capital Market Expectations Part 2: Forecasting Asset Class Returns

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Forecasting Asset Class Returns

Statistical methods
- Sample (historical) data
  - Possibly with shrinkage estimate (weighted average of two estimates—one from sample data and other from alternative source (e.g., prior knowledge)
- Time series analysis (e.g., volatility clustering)

Discounted cash flow
- Equity, Grinold-Kroner: dividend yield + repurchases + nominal earnings growth + repricing (all as %) $= \left(\frac{D}{P} - \%\Delta S\right) + \%\Delta E + \%\Delta \frac{P}{E}$

  (Note that $\%\Delta E - \%\Delta S$ = growth rate of eps)
- Bonds: YTM, refined using MD and future rate change projections (as seen in FI)

Useful FI rule of thumb: if holding period (H) = Macaulay duration, then total return little affected by yield changes (immunized); for shorter H, price risk dominates (higher rates bad), and for longer H, reinvestment risk dominates (lower rates bad)

Forecasting Asset Class Returns

Building block approach to FI returns
- Risk-free rate + term premium + credit premium + liquidity premium

Equilibrium approach
- **Singer-Terhaar model:** weighted-average risk premium, based on degree of integration
  - Fully integrated market:

$$RP_i^G = \rho_{u,GM}\sigma_i \left(\frac{RP_{GM}}{\sigma_{GM}} \right) [= \beta_i \times RP_{GM}]$$

Global market Sharpe ratio

  - Fully segmented market:

$$RP_i^S = \sigma_i \left(\frac{RP_i^S}{\sigma_i} \right)$$

Segmented market Sharpe ratio; if not told otherwise, assume this is same as global Sharpe ratio

- Plus include premiums for nonsystematic risks such as illiquidity

Also: **surveys** (of group of experts) and **judgment** (synthesis of info from various sources)