Demand and Supply for Financial Assets
Mishkin ch.5: The Bond Market

• Motivation:
  - Interest rates are determined by the demand and supply for bonds.
  - Monetary policy works in part by manipulating interest rates.
  - Demand and supply for other financial assets are determined similarly.

• Perspectives on the bond market:

1. **Bonds as financial assets** = Financial Factors (very short run)
   • Bond demand affected by relative risk, relative liquidity, and wealth.
   • Key issue: Asset pricing (Finance). Instantaneous responses to news.

2. **Saving and Borrowing** = Real Factors (long run)
   • Bond market matches savers and borrowers, affected by their behavior.
   • Macro issue: Real savings/investment. Takes time – most powerful in the long run.

3. **Liquidity Preference** = Monetary Factors in a Keynesian setting (short run).
   • Relies on Keynesian macroeconomic assumptions: “sticky” prices.
   => **DEFER**. Return to Liquidity effect and “Money & Interest Rates” later.
Perspective #1: Bonds as Financial Assets

• General Finance Questions:
  - What determines the demand for financial assets?
    1. Expected return (+)
    2. Risk (-)
    3. Liquidity (+)
    4. Wealth (+)
  - Applies to all financial assets. Bonds as example.

• The Demand Curve for Bonds
  • Remember: High price <= Low yield. Implies downward sloping demand function.
  • Demand function shifts if bonds’ risk or liquidity change.
  • Demand is relative shifts if return, risk, or liquidity on other assets change.

  • Note: Bond market responds quickly to financial news, to any news relevant for determining the return, risk, or liquidity of bonds relative to other assets.
  • Time horizon: Instantaneous (within seconds).

  • Special issue for long-term bonds: Rising interest rates (before maturity) would reduce the price => Reduce the return > Expected increases in interest rates reduces demand.
Demand curves for other financial assets

• Same basic argument as for bonds:
  - Downward sloping, because “higher Price <= lower expected return” logic applies to all financial assets, provided the asset’s payment stream remains unchanged.
  - Shifting down/left when risk increases. Shifting up/right when liquidity increases.
    Examples: Stocks, mutual funds, real estate, gold, investments abroad.

• Additional issue for equity-type assets: future payments are uncertain
  => Unexpected new information about payments shifts the demand curve

• Example: Stock with expected value next year $100
  - More demand now at $80 than at $90 => Downward sloping demand curve.
  - Suppose the expected value next year rises to $120: Demand at $96 (20% discount) is similar to previous demand at $80 => Shift right/up in the demand curve
Comparing Returns and Risks:

**Application: The “Flight to Quality”**

- Scenario: unexpected increase in risk for some asset class (often: stocks)
  - Many specific examples – history of financial crises.

- Principles for analysis: Supply is largely given in short run. Demand fluctuates with expected returns, risk, and liquidity relative to other markets.

- Lesson: Demand for financial assets is relative – depends on the alternatives.
Wealth as Demand Factor: Caution

• Basic point: More wealth => More demand for all financial assets.

• Contrast: demand factors that affect relative values versus wealth:
  - Demands for different financial assets are negatively related when relative returns, relative risks, and relative liquidity levels shift.
  - Demands for different financial assets are positive related when wealth changes.

• Wealth can change in two ways: 1. New savings. 2. Re-valuation.
  - Re-valuation is a distraction (or even misleading): Not a source of new demand.
    Example: Hold 100 bonds @100 = $10,000 wealth. If price rises to $110 => Wealth $11,000.
    Will demand increase? Demand from existing wealth is still 100 bonds.
  - New savings must come from real activity = Surplus of income over spending.
    - New savings take time: NOT an instantaneous factor => Creates dynamics.
    - Purchasing power of wealth is eroded by inflation
      => Real returns (after inflation) determine the incentives to save

• Lessons for applications:
  - Source of wealth changes is savings. Savings raise all asset demands.
  - Quantity axis in diagrams = Number of securities or their face value (not $ value).
The Supply of Bonds
(and other financial assets)

• Simple: the supplier/issues of securities defines the market!
  - Treasury bond market = supply by U.S. Treasury
  - Market for Microsoft stock = supply by Microsoft

• Supply incentives in the primary market:
  1. Need for funds:
     - Private: Profitability of capital investments.
     - Public: Level of government budget deficits.
  2. Cost of borrowing:
     - Borrow more if the cost is low => upward-sloping supply curve.
     - Inflation reduces the real value of debt
     => Real returns (after inflation) determine the incentives to issue securities

• Secondary market: Fixed supply except for buyback/new issues.
  => Steep or vertical supply curve.

• Mishkin’s demand & supply diagrams: generic slopes – okay for quizzes.

[Mishkin ch.5 - P.6]
Demand & Supply => Equilibrium Price and Volume

- For bonds: Exact price-yield relationship (Example: F=1000)
- For all financial assets: high prices tend to imply low future returns.
Overview of Bond Market Analysis: Predict the Effect of Changes

1. Reasons why bond demand may shift
2. Reasons why bond supply may shift
3. Scenarios that involve shifts in demand and supply:
   - Business cycles
   - Inflation: The Fisher Effect

• In each case:
  - Task: Determine the impact on prices and quantities.
  - Ask additional questions: What’s the time horizon? What’s the likely impact on other markets, e.g., the stock market?

• Alternative view: Loanable Funds analysis (see Online Appendix5#1)
  - Supply of securities = Demand for financing
  - Demand for securities = Supply of funds to financial markets.

=> Helpful way to think about markets, but not required for exams.

[Mishkin ch.5 - P.8]
Overview #1:
Factors that shift the Demand for Bonds

**SUMMARY TABLE 2**
Factors That Shift the Demand Curve for Bonds

<table>
<thead>
<tr>
<th>Variable</th>
<th>Change in Variable</th>
<th>Change in Quantity Demanded at Each Bond Price</th>
<th>Shift in Demand Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wealth</td>
<td>↑</td>
<td>↑</td>
<td></td>
</tr>
<tr>
<td>Expected interest rate</td>
<td>↑</td>
<td>↓</td>
<td></td>
</tr>
<tr>
<td>Expected inflation</td>
<td>↑</td>
<td>↓</td>
<td></td>
</tr>
<tr>
<td>Riskiness of bonds relative to other assets</td>
<td>↑</td>
<td>↓</td>
<td></td>
</tr>
<tr>
<td>Liquidity of bonds relative to other assets</td>
<td>↑</td>
<td>↑</td>
<td></td>
</tr>
</tbody>
</table>

Note: Only increases in the variables are shown. The effects of decreases in the variables on demand would be the opposite of those indicated in the remaining columns.
Overview #2:
Factors that shift the Supply for Bonds

### SUMMARY TABLE 3

<table>
<thead>
<tr>
<th>Variable</th>
<th>Change in Variable</th>
<th>Change in Quantity Supplied at Each Bond Price</th>
<th>Shift in Supply Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profitability of investments</td>
<td>↑</td>
<td>↑</td>
<td>$B^1_{s}$</td>
</tr>
<tr>
<td>Expected inflation</td>
<td>↑</td>
<td>↑</td>
<td>$B^1_{s}$</td>
</tr>
<tr>
<td>Government deficit</td>
<td>↑</td>
<td>↑</td>
<td>$B^1_{s}$</td>
</tr>
</tbody>
</table>

Note: Only increases in the variables are shown. The effects of decreases in the variables on the supply would be the opposite of those indicated in the remaining columns.
Scenario: Business Cycle Expansion

- Shifts in Demand and Supply: Higher incomes. Real capital investment is more profitable. [*Caution: Distinguish real and financial investments!*]

**Step 1.** A business cycle expansion shifts the bond supply curve rightward...

**Step 2.** and shifts the bond demand curve rightward, but by a lesser amount...

**Step 3.** so the price of bonds falls and the equilibrium interest rate rises.
Scenario: Increase in Expected Inflation

- Lower real cost of borrowing $\Rightarrow$ More security issues (supply).
- Lower real return $\Rightarrow$ Less savings (demand). Result: **Fisher effect**.
- Question: What causes higher expected inflation? $\Rightarrow$ Macro issue.

**Step 1.** A rise in expected inflation shifts the bond demand curve leftward . . .

**Step 2.** and shifts the bond supply curve rightward . . .

**Step 3.** causing the price of bonds to fall and the equilibrium interest rate to rise.
Evidence on the Fisher Effect

- Conclude: Fisher effect is important long-run changes in interest rates; need other factors to explain short-run changes.

- Agenda: Examine macroeconomic forces – (a) simple long run; (b) monetary. Then return to financial markets. Introduction & preview…
Preview: Other Applications of Financial Markets Analysis

• Common principles: Supply is largely given in the short run. Demand fluctuates with expected returns, risk, and liquidity relative to other markets.

1. **The Risk-structure of interest rates** (Mishkin ch.6, part 1)
   - Good measure of risk: Bond Ratings
   - Find:  
     2. Yields move together otherwise => Tracking “benchmarks” is enough.

2. **The Term Structure of interest rates**: (Mishkin ch.6, part 2)
   - Combines financial analysis and macro issues – defer.

3. **Demand and supply in the stock market** (Mishkin ch.7)
   - Comment on “crashes” – examples of what can go wrong with demand & supply.

4. **The Market for Foreign Exchange** (Mishkin ch.17)
   - Exchange rate = Relative price of different country’s financial assets
   - Demand = Function of relative return, risk, and liquidity. Supply ~ fixed.
   - Insight reelevant for following the news: High U.S. interest rates create the demand for dollar assets => Dollar appreciates against other currencies.