

**VAULT GUIDE TO
FINANCE
INTERVIEWS**

INTRODUCTION	1
Landing a Gig	2
THE FINANCIAL SERVICES INDUSTRY	5
The Finance Interview: An Overview	6
Questions	12
VALUATION TECHNIQUES	19
Basic Accounting Concepts	21
Market Valuation	28
Discounted Cash Flow (DCF)	29
Comparable Transactions	45
Multiple Analysis or Comparable Company Analysis	46
Questions	48
EQUITY ANALYSIS AND PORTFOLIO MANAGEMENT	63
Investment Management and Portfolio Theory	64
Stock Analysis and Stock Picking	67
Questions	70
STOCKS	73
Equity vs. Debt (Stocks vs. Bonds)	75
Stock Terminology	77
Questions	80

BONDS AND INTEREST RATES **87**

Bond Terminology	89
Pricing Bonds	91
The Fed and Interest Rates	94
The Fed and Inflation	96
Effect of Inflation on Bond Prices	97
Leading Economic Indicators	98
Questions	99

CURRENCIES **105**

Exchange Rates	107
Influence of Interest Rates on Foreign Exchange	108
Influence of Inflation on Foreign Exchange	109
Capital Market Equilibrium	111
Exchange Rate Effects on Earnings	112
Effect of Exchange Rates on Interest Rates and Inflation	113
Questions	114

OPTIONS AND DERIVATIVES **117**

The Wild West of Finance	118
Options	119
Writing Options	121
Options Pricing	122
Forwards	123
Futures	124
Swaps	125
Questions	126

MERGERS & ACQUISITIONS **129**

Why Merge?	131
Why Not Merge?	132
Stock Swaps vs. Cash Offers	134
Tender Offers	135
Mergers vs. Acquisitions	136
Pooling vs. Purchase	137
Will That Be Cash or Stock?	140
Accretive vs. Dilutive Mergers	141
Questions	142

BRAINTEASERS AND GUESSTIMATES **147**

Acing Guesstimates	149
Brainteasers	151
Questions	152

FINAL ANALYSIS **165****FINANCE GLOSSARY** **167****ABOUT THE AUTHOR** **177**

The Fed and Interest Rates

The Federal Reserve Board has broad responsibility for the health of the U.S. financial system. In this role, the Fed sets the margin requirements on stocks and options, and regulates bank lending to securities market participants.

The Fed also has the responsibility of formulating the nation's monetary policy. In determining the monetary policy of the nation, the Fed manipulates the money supply to effect the macroeconomy. When the Fed increases the money supply to the economy, the monetary policy set by the Fed is said to be expansionary. This encourages investment and subsequently increases consumption demand. In the long run, however, an expansionary policy can lead to higher prices and inflation. Therefore, it is the Fed's responsibility to maintain a proper balance and prevent the economy from either hyperinflation or recession.

The Fed uses several tools to regulate the money supply. The Fed can 1) use its check writing capabilities 2) raise or lower the interest rates, or 3) manipulate the reserve requirements for various banks to control the money flow and thereby the interest rate.

Let's look at these tools one by one:

1. Open Market Operations

The Fed can "write a check" to buy securities and thereby increase the money supply. Unlike the rest of us, the Fed doesn't have to pay the money for a check it has written. As we will see, an increase in the country's money supply stimulates the economy. Likewise, if the Fed sells securities, the money paid for them leaves the money supply and slows the economy.

2. Changing Interest Rates

The Fed can raise or lower interest rates by changing: (a) the discount rate (the interest rate the Fed charges banks on short-term loans), and/or (b) the Federal Funds rate (or Fed Funds rate), the rate banks charge each other on short-term loans. When the Fed raises or lowers interest rates, banks usually quickly follow by raising or lowering their prime rate (the rate banks charge on loans to its most creditworthy customers). A reduction of the interest rate signals an expansionary monetary policy. Why? Because by reducing the interest of its loans to banks, the Fed allows banks to lend out money at lower rates. More businesses and individuals are willing to take out loans, thus pouring more money into the economy.

3. Reserve Requirements

All banks that are members of the Federal Reserve System are required to maintain a minimum balance in a reserve account with the Fed. The amount of this minimum balance depends on the total deposits of the bank's customers. These minimum deposits are referred to as "reserve requirements." Lowering the reserve requirements for various banks has the same expansionary effect. This move allows banks to make more loans with the deposits it has and thereby stimulates the economy by increasing the money supply.

But why does an increase in money supply stimulate the economy? An increase in the money supply usually results in investors having too much money in their portfolios, which leads them to buy more bonds. This increases the demand for bonds, drives up bond prices, and thereby reduces interest rates. More money available increases demand for stocks and subsequently real estate. This leads to higher investments and greater demand for goods. Inflation is the rise of prices over time — it is why over the long-term, we are guaranteed to hear and (sorry, it's true) speak phrases like: "When I was your age, a can of Coke was only 50 cents."

The Fed and Inflation

Inflation directly affects interest rates. Consider this: If lending money is healthy for the economy because it promotes growth, interest rates must be higher than inflation. (If I lent out money at a 5 percent annual interest rate, but inflation was at 10 percent, I would never lend money.) Thus, the Federal Reserve watches inflation closely in its role of setting interest rates.

Moreover, lenders issuing long-term loans such as mortgages can issue what are called floating rate loans, whose yield depends on an interest rate (like the prime rate) that adjusts to account for changes in inflation. In this way, lenders can be protected should inflation increase.

At the same time, some amount of inflation (usually around 1 to 2 percent) is a sign of a healthy economy. If the economy is healthy and the stock market is growing, consumer spending increases. This means that people are buying more goods, and by consequence, more goods are in demand. No inflation means that you do not have a robust economy — that there is no competitive demand for goods.

But good inflation must be watched closely. From basic microeconomics we know that if the demand curve shifts upwards because of higher income, the new equilibrium price is higher. Once the price rises, the supply curve shifts as more people (sellers) enter the market to take advantage of the opportunity (i.e., growth in macroeconomic terms). This causes the supply curve to also shift upwards — the prices reach a new equilibrium above the previous equilibrium. As you can see, this can theoretically spiral upward, as increased supply indicating a healthy economy further boosts the demand and so on. This is Federal Reserve Chairman Alan Greenspan's major concern with an "irrationally exuberant" stock market — that the economy will overheat as a result and inflation will spiral out of control.

Effect of Inflation on Bond Prices

The rule is very simple: when inflation goes up, interest rates rise. And when interest rates raise bond prices fall. Therefore, when inflation goes up, bond prices fall.

The ways in which economic events, inflation, interest rates, and bond prices interact are the basics of an understanding of finance — these relationships are sure to be tested in finance interviews. In general, a positive economic event (such as a decrease in unemployment, greater consumer confidence, higher personal income, etc.) drives up inflation (because there are more people working, there is more money to be spent), which drives up interest rates, which causes a decrease in bond prices (although the yield on bonds increases).

The following table summarizes this relationship with a variety of economic events.

Economic Event	Inflation	Interest Rates	Bond Prices
Unemployment figures low	Up	Up	Down
Dollar weakens against Yen	Up	Up	Down
Consumer confidence low	Down	Down	Up
Stock Market drops	Down	Down	Up
Companies report healthy earnings	Up	Up	Down

Leading Economic Indicators

The following table is a look at leading economic indicators, and whether their rise or fall signal positive economic events or negative economic events. For finance interviews, know this chart cold.

Indicator	Positive Economic Event	Negative Economic Event
GDP	Up	Down
Unemployment	Down	Up
Inflation	Down	Up
Consumer Price Index	Down	Up
Interest Rate	Down	Up
New Home Starts	Up	Down
Existing Home Sales	Up	Down

Questions

1 How are bonds priced?

Bonds are priced based on the net present value of all future cash flows expected from the bond.

2 How would you value a perpetual bond that pays you \$1,000 a year in coupons?

Divide the coupon by the current interest rate. For example, a corporate bond with an interest rate of 10 percent that pays \$1,000 a year in coupons forever would be worth \$10,000.

3 When should a company issue debt instead of issuing equity?

First, a company needs a steady cash flow before it can consider issuing debt (otherwise, it can quickly fall behind interest payments and eventually see its assets seized). Once a company can issue debt, it will do so for a couple of main reasons.

If the expected return on equity is higher than the expected return on debt, a company will issue debt. For example, say a company believes that projects completed with the \$1 million raised through either an equity or debt offering will increase its market value from \$4 million to \$10 million. It also knows that the same amount could be raised by issuing a \$1 million bond that requires \$300,000 in interest payments over its life. If the company issues equity, it will have to sell 20 percent of the company ($\$1 \text{ million} / \4 million). This would then grow to 20 percent of \$10 million, or \$2 million. Thus, issuing the equity will cost the company \$1 million ($\$2 \text{ million} - \1 million). The debt, on the other hand, will only cost \$300,000. The company will therefore choose to issue debt in this case, as the debt is cheaper than the equity.

Also, interest payments on bonds are tax deductible. A company may also wish to issue debt if it has taxable income and can benefit from tax shields.

4 What major factors affect the yield on a corporate bond?

The short answer: 1) interest rates on comparable U.S. Treasury bonds, and 2) the company's credit risk. A more elaborate answer would include a discussion of the fact that corporate bond yields trade at a premium, or spread, over the interest rate on comparable U.S. Treasury bonds. (For example, a five-year corporate bond that trades at a premium of 0.5 percent, or 50 basis points, over the five-year Treasury note is priced at 50 over.) How large this spread is depends on the company's credit risk: the riskier the company, the higher the interest rate the company must pay to convince investors to lend it money and, therefore, the wider the spread over U.S. Treasuries.

5 If you believe interest rates will fall, which should you buy: a 10-year coupon bond or a 10-year zero coupon bond?

The 10-year zero coupon bond. A zero coupon bond is more sensitive to changes in interest rates than an equivalent coupon bond, so its price will increase more if interest rates fall.

6 Which is riskier: a 30-year coupon bond or a 30-year zero coupon bond?

A 30-year zero coupon bond. Here's why: A coupon bond pays interest semi-annually, then pays the principal when the bond matures (after 30 years, in this case). A zero coupon bond pays no interest, but pays one lump sum upon maturity (after 30 years, in this case). The coupon bond is less risky because you receive some of your money back before over time, whereas with a zero coupon bond you must wait 30 years to receive any money back. (Another answer: The zero coupon bond is more risky because its price is more sensitive to changes in interest rates.)

7 What is The Long Bond trading at?

The Long Bond is the U.S. Treasury's 30-year bond. In particular for sales and trading positions, but also for corporate finance positions, interviewers want to see that you're interested in the financial markets and follow them daily.