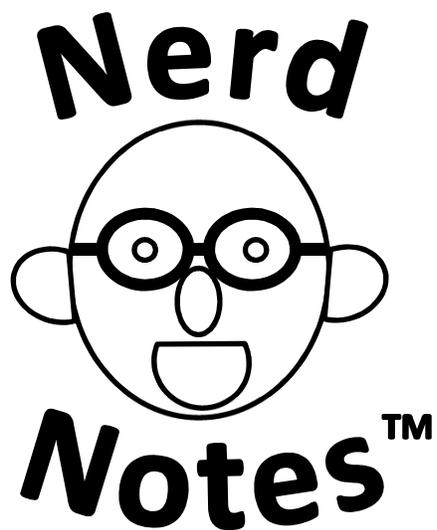


NerdNotes™ Summary Guide to the CFA® Level I Exam



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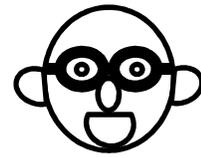


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Chapter 1

ETHICS

Guide to this Section

- In an effort to enable you to read this as efficiently as possible, we use the pronoun “you” to refer to Members and Candidates
- Familiarize yourself with the guidelines as listed here and then practice with tons of Ethics questions
- We have summarized each Standard and focused on areas that are frequently tested

Supply & Demand Analysis: Companies

Summary of Profit, Revenue and Cost Terms	
Term	Calculation
Economic Profit	$TR - TC$
Average Revenue	TR / Q
Marginal Revenue	$\Delta TR / \Delta Q$
Total Cost	$TFC + TVC$
Average Fixed Cost	TFC / Q
Average Total Cost	TC / Q or $AFC + AVC$
Marginal Cost	$\Delta TC / \Delta Q$

Legend	
TR	Total Revenue
TC	Total Cost
Q	Quantity
TFC	Total Fixed Cost
TVC	Total Variable Cost
AFC	Average Fixed Cost
AVC	Average Variable Cost
MR	Marginal Revenue
MC	Marginal Cost

Deciding Whether to Stay in Business or Shut Down		
Revenue vs. Cost	Short run	Long run
$TR \geq TC$	Stay in market	Stay in market
$TR > TVC$ but $TR < TFC + TVC$	Stay in market	Exit market
$TR < TVC$	Shut down production	Exit market

Profit maximization occurs when:

- TR minus TC is greatest
- $MR = MC$
- Revenue value of last unit of input employed = cost of employing that input

Deciding Whether to Increase or Decrease Production Quantity		
Revenue vs. Cost	What it means	What firm should do to Quantity
$TR = TC$ and $MR > MC$	Firm operating at lower breakeven point	Increase Q to enter profit territory
$TR \geq TC$ and $MR = MC$	Firm at maximum profit level	No Δ in Q
$TR < TC$ and $TR \geq TVC$ but $(TR - TVC) < TFC$	Covering TVC but not TFC	Short run – find level of Q that minimizes losses Long run – exit market if losses continue
$TR = TC$ and $MR < MC$	Firm operating at upper breakeven point	Decrease Q to enter profit territory

More on GDP

Components of GDP = C + I + G + (X-M)	
C	Consumer spending on final goods/services
I	Gross private domestic investment (e.g. business capex, inventory)
G	Government spending on final goods/services. Transfer payments (benefits, welfare) not included. Fiscal deficit if G exceeds net taxes (T). G/GDP around 30% in US. A little over a third of that is transfer payments.
X	Exports. Value of goods and services sold to foreigners. Trade deficit when $M > X$. trade deficits must be funded by borrowing from other countries. They must be running a corresponding trade surplus (net balance worldwide).
M	Imports. C, I & G spent on goods and services from foreign countries.

Implications of Government Deficits and Surpluses

$$G - T = (S - I) - (X - M)$$

If $(G - T) > 0$

- Government spending is higher than tax revenue
- Fiscal deficit
- Private sector must be saving more than it's investing $(S - I) > 0$
OR
- Country running trade deficit $(X - M) < 0$

Nominal and Real GDP

- GDP Deflator measures aggregate changes in prices across overall economy
- $$\text{GDP Deflator} = \frac{\text{Value of Output at Current Year Prices}}{\text{Value of Output at Base Year Prices}} * 100 = \frac{\text{Nominal GDP}}{\text{Real GDP}} * 100$$
- $$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{GDP Deflator} / 100}$$

Balance Sheet – Financial Assets

Types of Financial Assets	
Financial Asset	Description
Held-to-Maturity	<ul style="list-style-type: none"> Measured at amortized cost if asset CF occur on specified dates and consist solely of principal and interest E.g. long-term bond of another company
Held for Trading	<ul style="list-style-type: none"> Security acquired primarily for the purpose of selling in the near term Measured at fair value ☑ mark-to-market
Available-for-Sale	<ul style="list-style-type: none"> Available to be sold but not classified as held for trading Measured at fair value Unrealized gains and losses recognized in OCI

Financial assets are reported at either amortized cost (historical cost *minus* amortization or impairment) or fair value:

Financial Assets Reported at Fair value	Financial Assets Reported at Amortized cost
<ul style="list-style-type: none"> Held for trading Available for sale Derivatives Non-derivatives with fair value exposures hedged by derivatives 	<ul style="list-style-type: none"> Unquoted equity instruments Held to maturity Loans to and receivables from another company

Financial Ratios

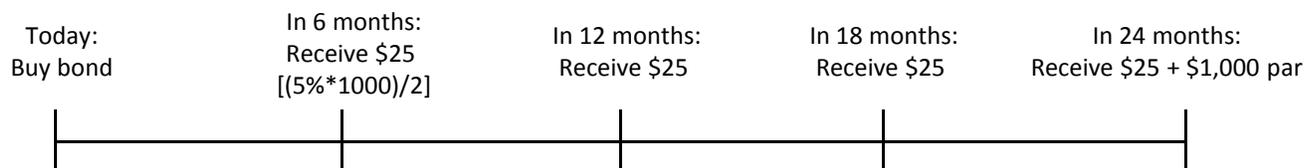
Activity Ratios		
Activity ratios measure how efficiently a company performs day-to-day tasks (collection of AR, managing inventory) and uses assets		
Ratio	How to calculate	Interpretation
Inventory turnover	$\text{COGS} / \text{Average Inventory}$	High turnover and low DOH may indicate that company doesn't carry enough inventory. A low turnover and high DOH could indicate slow moving inventory.
Days of inventory (DOH)	$\text{No. of days in period} / \text{Inventory turnover}$	
Receivables turnover	$\text{Revenue} / \text{Average receivables}$	DSO – time between sale and cash collection. Limiting the numerator to sales made on credit would be more accurate (though not always available). High turnover and low DSO may indicate efficient credit and collection.
Days of sales outstanding	$\text{No. of days in period} / \text{Receivables turnover}$	
Payables turnover	$\text{Purchases} / \text{Average trade payables}$	Days payables – Number of days payables reflects average days to pay suppliers. Payables turnover – Number of times per year the company pays off all its creditors. Assumption in ratio that company makes all payments on credit. $\text{Purchases} = \text{COGS} + \text{EndInv} - \text{BegInv}$
Number of days of payables	$\text{No. of days in period} / \text{Payables turnover}$	
Working capital turnover	$\text{Revenue} / \text{Average working capital}$	How efficiently company generates revenue with working capital. Hard to use ratios for companies with zero or negative working capital.
Fixed asset turnover	$\text{Revenue} / \text{Average net fixed assets}$	Measures how efficiently the company generates revenues from its investments in fixed/total assets. If the ratio is higher → more efficient.
Total asset turnover	$\text{Revenue} / \text{Average total assets}$	

Fixed Income - Basics

How Bonds Work

- Bonds typically have a par value that you receive at maturity (\$1,000)
- You buy a bond either at issuance (typically buy at par) or you buy a bond on the secondary market at the market price (could be higher or lower than par)
- If you sell a bond before maturity, you get market price
- If you wait until the bond matures, you get par at maturity
- In the meantime, you receive interest (coupons) on the bond
- Coupons are typically paid on an annual or semi-annual basis, and are based on the *par value* (not market value) i.e., the coupon payments never change (hence the name *fixed* income) in a plain vanilla bond

Example: 2-year bond paying 5% semi-annually, par \$1,000



Borrowing to Buy Bonds

- Margin buying – Taking a loan to purchase bonds
- Repurchase agreements
 - Seller agrees to buy back bond at specified price
 - The difference between the repurchase price and the sale price is the dollar interest cost of the loan → can compute implied interest rate
 - Lower interest rate cost than bank financing

Bonds with Embedded Options

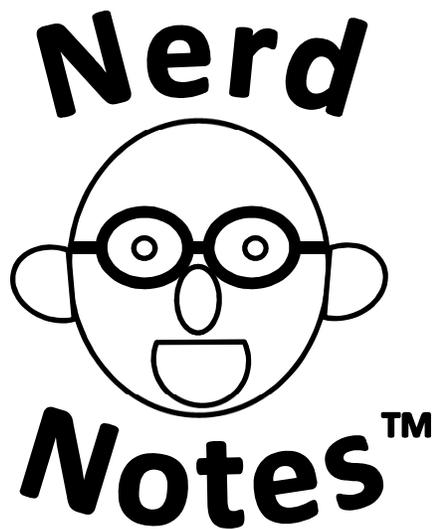
- Some bonds are issued with embedded options that grant rights to either the issuer or the bondholder (see table below)

Bonds with Embedded Options	
Embedded options for issuers: <ul style="list-style-type: none"> ○ Right to call issue ○ Accelerated Sinking fund provision ○ Cap on floater ○ Right of underlying borrowers to prepay 	Embedded options for bondholders <ul style="list-style-type: none"> ○ Conversion privilege ○ Put ○ Floor on floater

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