

Financial Services Laboratory

Lesson FIN 003

For Introduction to Finance

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Topic: Data Collection and Calculating DDM
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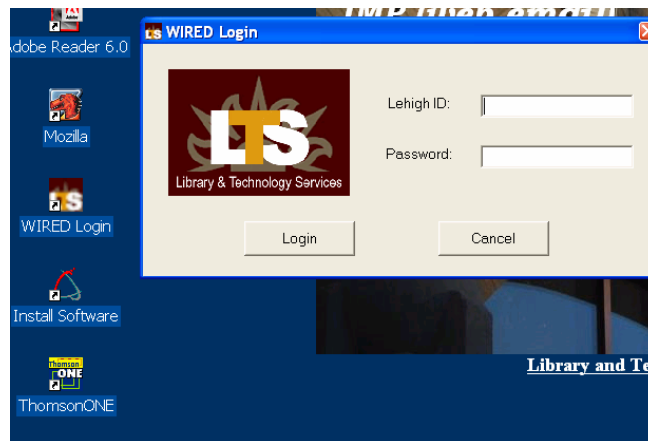
Learning objective: Collect data for use in calculating the price of an equity security using the dividend discount model (DDM).

Description:

This module is to provide students with an introduction to the Financial Services Lab (FSL), Thomson ONE financial data, and in calculating the price of a stock using the Dividend Discount Model (DDM). In the FSL, students will locate and download data on a company's beta, the US Treasury bills, and analysts's estimates for earnings per share.

FSL Computers & Thomson ONE

- Open laptop, turn on. Login is Administrator with no password (password field is blank) to Windows only (the box for Workstation only should be checked)
- For most of your data collection you will want to save an EXCEL file to the H:\ drive. To do this you must use WIRED LOGIN. After entering your Lehigh ID and Password, you must click on Login.



- To open Thomson ONE, click on the Thomson ONE icon.

Stock Prices

If you need to find a ticker or symbol for a company, use the **Tools-Symbol Book** tabs in Thomson ONE. Choose **E** for Equity under type of security, **Company Name**, and type

in the name of the company. You will be collecting data on Nike, McDonalds, Coke, Microsoft, and General Motors.

Interest Rates

Within Thomson ONE, the interest rate information can be found under the **Bonds** tab. For a three month US Treasury, go to the **Benchmarks** tab (see below).

- Find the 1 month Fed Funds rate as your risk-free rate. Use the BID YIELD. The bids are always on the left and asks are on the right.

Benchmarks			
Tools Window Help			
Equities Derivatives Bonds Currency Company Fundamental Research Portfolios Earnings Ownership			
Benchmarks US Treas Labor Com'l Paper MSCI Repurchase Bankers Acc Cert of Dep E			
Market Labor		Fed Funds	
	1W	2.24	/ 2.30
	2W	2.25	/ 2.31
	3W	2.30	/ 2.36
2.470	1M	2.38	/ 2.44
2.540	2M	2.45	/ 2.51
2.640	3M	2.55	/ 2.61
2.720	4M	2.63	/ 2.69
2.800	5M	2.71	/ 2.77
2.870	6M	2.78	/ 2.84
2.930	7M	2.84	/ 2.90
2.990	8M	2.90	/ 2.96
3.050	9M	2.96	/ 3.02
3.120	10M	3.02	/ 3.08
3.170	11M	3.08	/ 3.12
3.230	12M	3.14	/ 3.20
Key Lending Rates			
	4.000	Discount	
	5.250	Fed Funds Effective	

Company Research

Click on the on the **Company** tab and the **Co. Main** tab. At the bottom of the page, you will find the *Dividend Yld* and *Beta* on the left and *EPS Estimate Forecasts* on the right. For this assignment, you will need the dividend yield, beta, and the EPS forecasts for each year.

Starbucks Corp.
 Symbol: SBUX.O (C000004277)
 Exchange: NASDAQ
 Sector: Consumer Cyclical
 Industry: Other Specialty Retailers

Business Description
 Starbucks Corporation. The Group's principal activity is to purchase and roast high-quality whole bean coffee and sell them along with fresh brewed coffee, Italian-style espresso beverages, cold blended beverages, a variety of food items, coffee-related accessories and equipment, a selection of premium teas and a line of compact discs. The operations of the Group are carried out through two operating segments: The Company-operated retail stores offer a choice of regular and decaffeinated coffee beverages, a broad selection of Italian-style espresso beverages, cold blended beverages, iced shaken refreshment beverages and a selection of teas and individually packaged roasted whole bean coffees. The Specialty Operations relates to sale of coffee and tea products through other channels and through certain of its equity investors. The Group operates 4,253 stores in the United States, 422 in the United Kingdom, 372 in Canada, 49 in Thailand, 44 in Australia and 35 in Singapore.

Key Financials

	Y04	Y03	Y02
Sales	5,204.25	4,075.52	3,289.91
Operating Income	547.52	388.32	326.89
Net Income	390.55	268.35	215.07
Total Assets	3,390.55	2,729.75	2,292.74
Total Liabilities	916.33	647.32	508.10
EBITDA	N/A	N/A	N/A

Key Fundamentals

P/E Ratio*	54.80	Dividend Yld	0.00
Price to Book	8.20	1Yr Tot Return	36.76
Price To CF	29.86	Beta*	0.55
1Yr Sales Growth	23.92	1Yr EPS Growth	29.62
Current Market Cap	21,271.45		

Price Chart
 Starbucks - NASDAQ (3/16/2004-3/16/2005) - DataSt...

Analyst Rating
 Sell Strong Buy

Estimate Revisions
 Estimates Up/Down (Total: 16) Change in Estimate (117%)
 Last: 1.172
 Current: 1.174

EPS Estimate Forecasts

Year	Estimate	Actual
2004*	0.95	
2005	1.17	
2006	1.43	
2007	1.69	
2004		1.174

You should notice in the bottom left of the Thomson One page that current data for the company. The number to the left of **Chg** is the current price.



Excel Spreadsheet

In your spreadsheet you will record the risk-free rate, beta, dividend yield, current price, and the 2004-2007 EPS estimates. We are going to make some simplifying assumptions. We will assume that constant growth from 2008 on is 4% and the Market Risk Premium is 6%. We will also be assuming a constant payout ratio. The data in the yellow boxes are to be filled in by you for each of the five companies.

Dividend Discount Model

Company Symbol		Beta	Assumptions				
		Rf	Constant Growth	Market Risk Premium			
Pfizer	PFE	0.76	4.0%	6.0%			
		2.38%					
EPS							
Div. Yld.	Price	2004	2005	2006	2007	2008	
2.90%	26.04	2.12	2.13	2.22	2.25		
Growth			0.47%	4.23%	1.35%		
Dividend	\$	0.76	\$ 0.76	\$ 0.79	\$ 0.80	\$ 0.83	\$ 28.35
			1	2	3	4	3
k		7%					
PV(Ct)	\$	0.71	\$ 0.69	\$ 0.66	\$ 0.64	\$ 23.18	
Current Price-Intrinsic		\$ 0.80	Intrinsic Value				
			\$ 25.24				

Deliverable

For the assignment, turn in a copy of your results (spreadsheet) for the five companies.

- For which of the five companies, did our model work best?
- For each company, change the Constant Growth assumption from 4% until you can get within 5 cents of the current price. What are the five constant growth assumptions that find the current price?

Formulae used in the DDM Spreadsheet

$$k = r_f + \beta(E(r_m) - r_f)$$

$$g_{t+1} = \frac{EPS_{t+1}}{EPS_t}$$

$$D_t = EPS_t(\text{Div.Yield})$$

$$D_{t+1} = D_t(1 + g_{t+1})$$

$$PV(C_t) = \frac{D_t}{(1+k)^t}$$

$$P_T = \frac{D_{T+1}}{k - g_c}$$

$$P_0 = \left(\sum_{t=1}^T \frac{D_t}{(1+k)^t} \right) + \frac{P_T}{(1+k)^T}$$