



**LEHIGH**  
University

*Pennsylvania*  
Lehigh Valley Workforce Investment Board, Inc.

# WALL STREET WEST®

## Module for Dividend Discount Models

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Topic: Data Collection and Calculating DDM  
August 2008

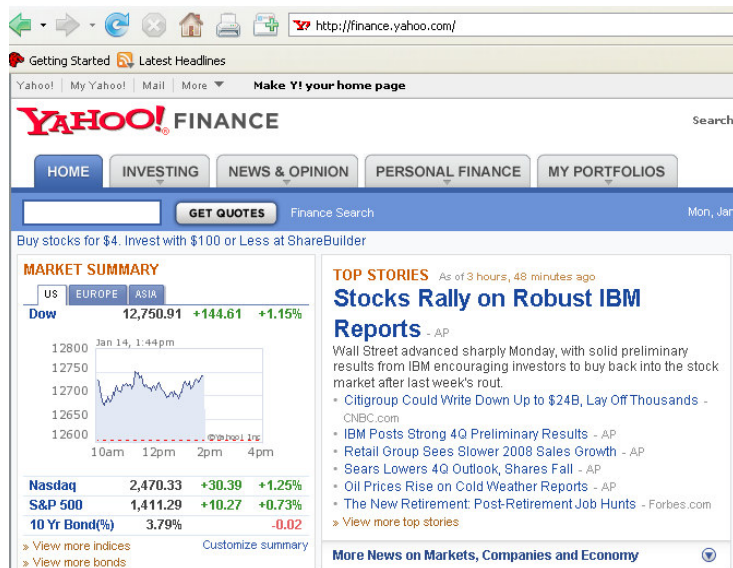
**Learning objective:** Collect data for use in calculating the price of an equity security using the dividend discount model (DDM).

### Description:

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

### Yahoo Finance

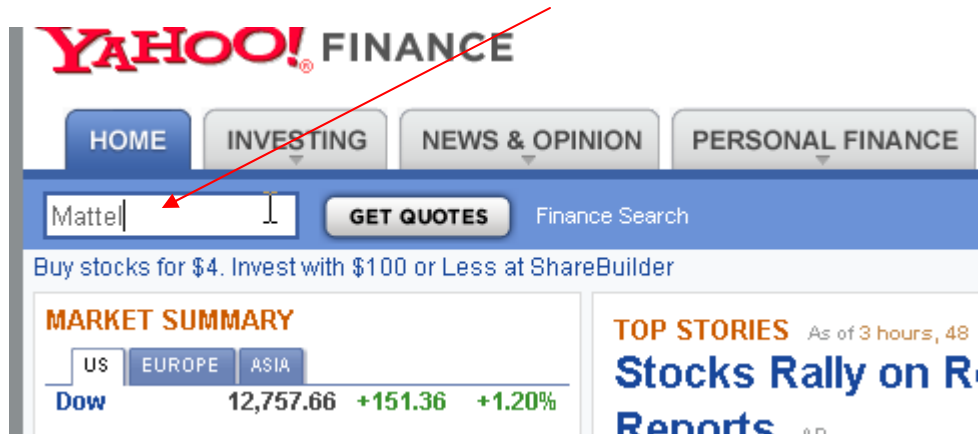
To begin, open a Web browser and go to [finance.yahoo.com](http://finance.yahoo.com). The following page should pop up.



This program is funded in part by a Workforce Innovation in Regional Economic Development (WIRED) grant from the U.S. Department of Labor.

## Stock Prices

If you need to find a ticker or symbol for a company, use **GET QUOTES**. Type the name of the company. For example, Mattel is typed below.



## Company Research

The first company page will be the Summary page below. Copy the Last Trade and Div. Yield to your spreadsheet.



For this module, you will also need to go to the **KEY STATISTICS** and **ANALYST ESTIMATES** pages. Click on the buttons on the left margin.

Beta is found on the **KEY STATISTICS** page under **TRADING INFORMATION—STOCK PRICE HISTORY**.

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## TRADING INFORMATION

### Stock Price History

Beta:	0.91
52-Week Change <sup>3</sup> :	-13.54%
S&P500 52-Week Change <sup>3</sup> :	-21.59%
52-Week High (21-Sep-07) <sup>3</sup> :	24.50
52-Week Low (15-Jan-08) <sup>3</sup> :	16.42
50-Day Moving Average <sup>3</sup> :	18.9151
200-Day Moving Average <sup>3</sup> :	19.804

From the **ANALYST ESTIMATES**, you will want the **Growth. Est** for **This Year** and **Next Year** and **Next 5 Years** (shown below).

Growth Est	MAT	Industry	Sector	S&P 500
Current Qtr.	18.0%	5.7%	-3.4%	N/A
Next Qtr.	11.8%	43.7%	15.9%	N/A
This Year	3.5%	3.3%	-8.5%	N/A
Next Year	15.6%	28.5%	33.0%	N/A
Past 5 Years (per annum)	2.422%	N/A	N/A	N/A
Next 5 Years (per annum)	10%	13.5%	10.2%	N/A
Price/Earnings (avg. for comparison categories)	14.08	20.31	21.93	N/A
PEG Ratio (avg. for comparison categories)	1.41	1.5	2.15	N/A

## Interest Rates


Go to <http://finance.yahoo.com/bonds>.

- Find the 3 month US Treasury Bond Rates as your risk-free rate.

US TREASURY BONDS RATES				
Maturity	Yield	Yesterday	Last Week	Last Month
3 Month	1.67	1.63	1.65	1.77
6 Month	1.91	1.84	1.88	2.01
2 Year	2.56	2.53	2.63	2.52
3 Year	2.41	2.38	2.50	2.44
5 Year	3.27	3.24	3.37	3.27
10 Year	3.97	3.96	4.04	3.98
30 Year	4.59	4.59	4.63	4.53

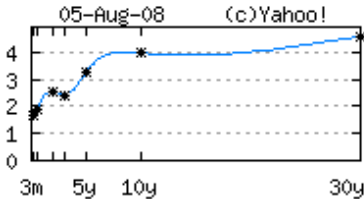
**Bonds Market Summary**  
 11:22 am **Slipping** Trade will bunker down in front of the

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05-Aug-08 (c)Yahoo!

### Spreadsheet

In spreadsheet (ddm.xls) provided, you will record the risk-free rate, beta, dividend yield, current price, and the growth estimates. We are going to make some simplifying assumptions. We will assume that constant growth 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 company.

### Deliverables

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

- For which of the five companies, did the model work best?
- For each company, use goal seek to find the Constant Growth assumption that gives the current price. What are the five constant growth assumptions that find the current price?
- Create a sensitivity table for each of the companies.

## Formulae used in the DDM Spreadsheet

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

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

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

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

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

$$R_{3,4,5} = \left( \frac{(1 + R_{1-5})^5}{(1 + R_1)(1 + R_2)} \right)^{\frac{1}{3}} - 1$$