

The Drivers of Decreases in Dividends per Share

Data Analysis for Decision Makers

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Agenda: The Modeling Process Utilized

- The Question
- Data Sources and Issues
- Data Details
- Data Processing
- Data Exploration
- Models Utilized
- Final Model Selection
- Conclusion/Recommendations

The Question

- Dividend payouts are one of the two ways that stock investors are compensated for their investments in the stock market.
- Decreasing dividends is a negative signal to the market.
- The ability to understand what makes up decisions to decrease dividends will help investors accurately evaluate the risk of an investment and help managers articulate financial objectives that keep their firms from falling into this category

Data Details

- Data was downloaded from <http://pages.stern.nyu.edu/~adamodar/>
- Data sets have financial information of 7661 US firms for years 2006, 2005 and 2004.
- We removed all financial institutions.
- Removed all companies which never paid dividends.
- Final data set has 1,022 companies

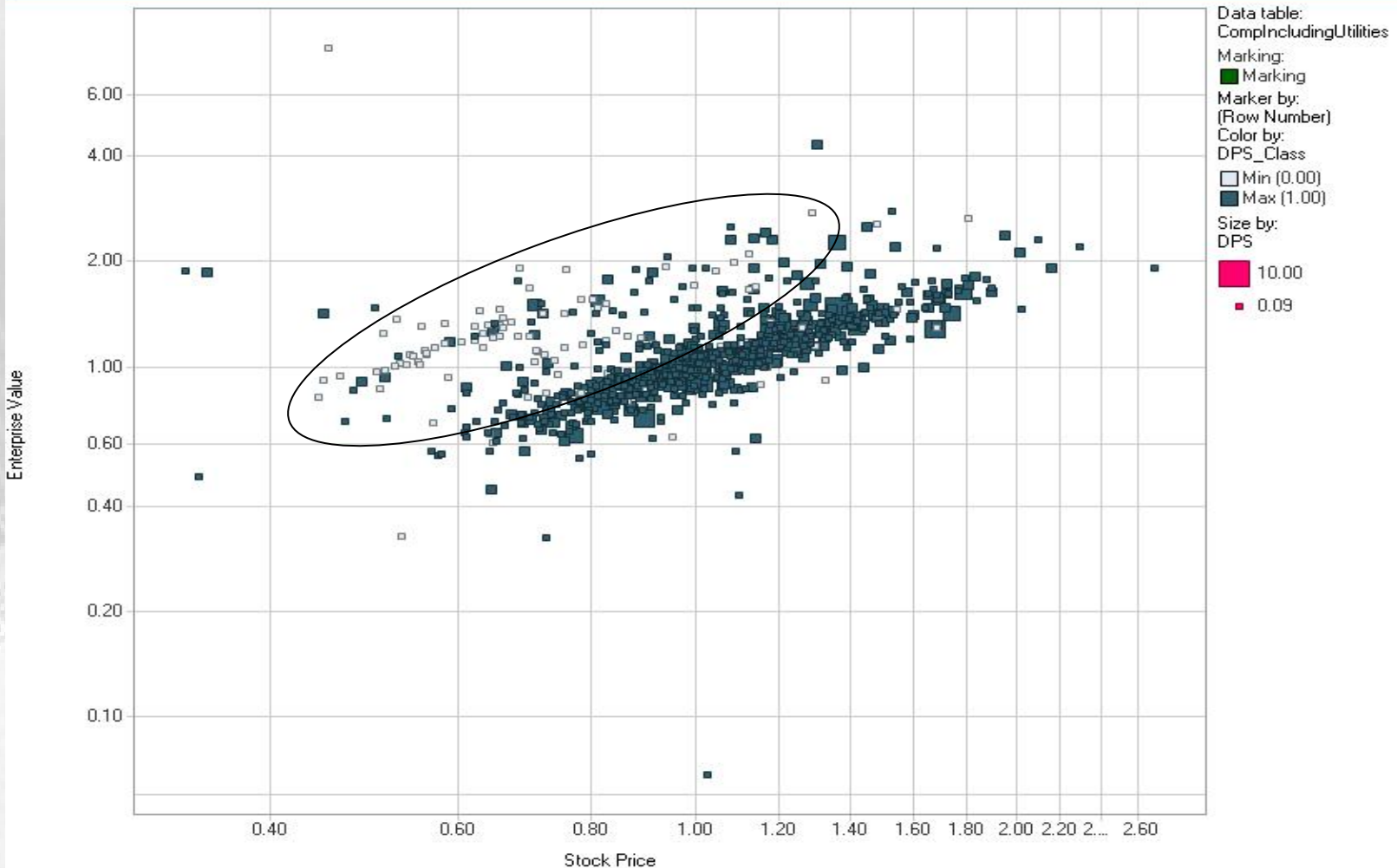
Data Processing

- Ensure that we had the exact same information for all companies across both 2004 and 2005
- Missing data was supplemented with data from CSRP and Research Insight
 - Remaining missing data was supplemented with the mean of a particular column
- Data transformations were performed
 - Created the change in value from one year to the next for analysis

Variable	Description	Interpretation
Stock Price	2005 Stock Price / 2004 Stock Price	If the stock price has risen, the ratio will be greater than 1
Revenues: Last yr	2005 Revenues / 2004 Revenues	If revenues have risen, the ratio will be greater than 1
PS Ratio	2005 P/S Ratio / 2004 P/S Ratio	If the P/S ratio has risen, the ratio will be greater than 1
PS Ratio_BIN	If P/S Ratio < 1, 0 else 1	If the P/S Ratio is less than 1, this will be 0, otherwise 1
PS_Interaction	PS Ratio * PS Ratio_BIN	An interactive term
EV/Sales_BIN	If Ratio of EV/Sales < 1, 0 else 1	If the EV/Sales has risen, the ratio will be greater than 1
Expected Growth in EPS: next 5 years	2005 Expected Growth / 2004 Expected Growth	If the expected growth rate has risen, the ratio will be greater than 1
3-yr Regression Beta	2005 3-Yr Regression Beta / 2004 3-Yr Regression Beta	If the 3-Year Regression Beta has risen, the ratio will be greater than 1

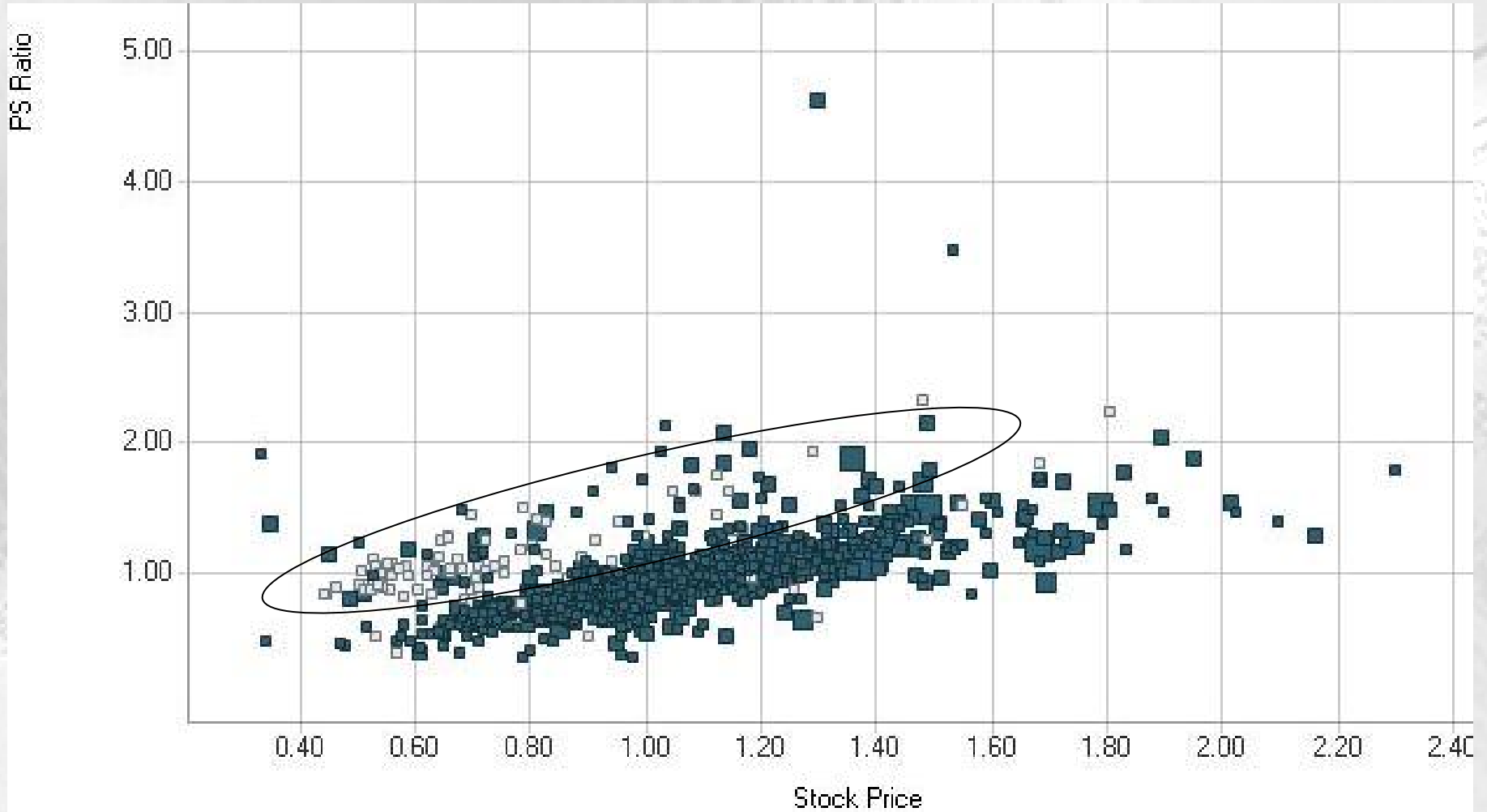
Data Exploration

Scatter Plot



* The white points have strictly decrease dividends per share.

Data Exploration



* The white points have strictly decrease dividends per share.

Models Utilized

- Overall Model was to determine whether dollar dividends/share stayed the same or increased (1) or decreased (0)
- Classification Tree
 - Yielded decent results, was less intuitive
 - The 8 variable tree became highly fractured and difficult to follow
- Discriminant Analysis
 - Yielded similar results to the logistic regression
- Logistic Regression
 - 30 of 96 variables were included in the initial run
 - A series of categorical variables were introduced on the advice of Professor Mark Taranto of the Finance Department of UMD
 - The most statistically significant variables were retained
 - Final model contained 8 variables

Final Model

Input variables	Coefficient	Std. Error	p-value	Odds
Constant term	5.40905237	1.47002482	0.00023363	*
Stock Price	6.35628414	0.5874483	0	576.1015015
Revenues: Last yr	-3.07913756	0.61567312	0.00000057	0.04599891
PS Ratio	-6.13924789	1.27187204	0.00000139	0.00215654
PS Ratio_BIN	-6.0798049	1.22230399	0.00000066	0.00228862
PS_Interaction	4.7447648	1.31647348	0.00031318	114.9807358
EV/Sales_BIN	1.13364589	0.41077492	0.00578414	3.1069634
Expected Growth in EPS: next 5 years	-0.1544888	0.05462378	0.00468056	0.85685307
3-yr Regression Beta	0.12941729	0.05056436	0.0104836	1.138165

Classification Confusion Matrix		
	Predicted Class	
Actual Class	1	0
1	770	138
0	31	82

Error Report			
Class	# Cases	# Errors	% Error
1	908	138	15.20
0	113	31	27.43
Overall	1021	169	16.55

Conclusion and Recommendations

- Key drivers of decreases in dividends per share:
 - Year-to-year changes in the stock price, revenues, price/sales ratio, enterprise value/sales ratio, expected growth in EPS, and the beta
- The results can be utilized to evaluate the risk of certain positions as well as the health of companies
- Extrapolation outside of this time period will require regressions against a variety of time periods

Questions?

