

**Problem 4.1.** Common-size Analysis.

Income Statement

	Du Pont	Dow	PPG
Revenues	<i>100.00%</i>	<i>100.00%</i>	<i>100.00%</i>
COGS	<i>67.65%</i>	<i>79.18%</i>	<i>62.88%</i>
Gross Profit	<i>32.35%</i>	<i>20.82%</i>	<i>37.12%</i>
SG&A Expenses	<i>18.25%</i>	<i>10.10%</i>	<i>21.59%</i>
Net Income	<i>17.55%</i>	<i>-1.38%</i>	<i>4.74%</i>

Balance Sheet

	Du Pont	Dow	PPG
Cash & MS	<i>14.29%</i>	<i>0.62%</i>	<i>1.28%</i>
Receivables, net	<i>9.68%</i>	<i>14.35%</i>	<i>16.75%</i>
Inventories	<i>10.45%</i>	<i>12.50%</i>	<i>10.70%</i>
Total Current Assets	<i>36.71%</i>	<i>29.02%</i>	<i>31.98%</i>
Fixed Assets, net	<i>32.95%</i>	<i>38.23%</i>	<i>32.56%</i>
Total Assets	<i>100.00%</i>	<i>100.00%</i>	<i>100.00%</i>
Total Current Liabilities	<i>20.01%</i>	<i>22.88%</i>	<i>23.13%</i>
Total Liabilities	<i>64.16%</i>	<i>71.86%</i>	<i>63.56%</i>
Total Equity	<i>35.84%</i>	<i>28.14%</i>	<i>36.44%</i>

Summarize the highlights from common-size analysis for these companies and indicate possible red flags.

**Problem 4.2.** Financial Ratios – Liquidity. Given the information from 3.1 above, calculate the liquidity ratios for the three chemical companies. Rate liquidity for each company from 1 (poor) to 10 (excellent).

	Du Pont	Dow	PPG
Current	<i>183.48%</i>	<i>126.87%</i>	<i>138.26%</i>
Quick	<i>119.82%</i>	<i>65.45%</i>	<i>77.95%</i>
Cash	<i>71.44%</i>	<i>2.71%</i>	<i>5.52%</i>
Operating Cash Flow*	<i>29.99%</i>	<i>22.02%</i>	<i>54.22%</i>
Ratings	<i>5-6</i>	<i>5-6</i>	<i>5-6</i>

\* Operating cash flows (in millions) are: Du Pont \$2,419; Dow \$1,789; PPG \$1,060.

**Problem 4.3.** Financial Ratios – Activity. The following additional information is provided for fiscal year 2000:

	Du Pont	Dow	PPG
Inventory	\$4,658	\$3,463	\$1,121
Receivables, net	4,552	5,385	1,563
Working Capital	2,401	1,387	550
Fixed Assets, net	13,287	13,579	2,752
Total Assets	39,426	27,645	9,125
Total Equity	13,299	9,686	3,097

Given the information above, calculate the activity ratios for the three chemical companies. Rate activity for these companies from 1 (poor) to 10 (excellent).

	Du Pont	Dow	PPG
Inventory Turnover	<i>377.03%</i>	<i>557.13%</i>	<i>507.36%</i>
Receivables Turnover	<i>584.88%</i>	<i>530.48%</i>	<i>548.44%</i>
Working Capital Turnover	<i>541.35%</i>	<i>1557.70%</i>	<i>1258.71%</i>
Fixed Asset Turnover	<i>186.09%</i>	<i>204.76%</i>	<i>296.84%</i>
Total Asset Turnover	<i>62.01%</i>	<i>88.05%</i>	<i>92.95%</i>
Ratings	<i>3-4</i>	<i>4-5</i>	<i>4-5</i>

	Du Pont	Dow	PPG
Average Days Inventory in Stock	<i>96.81</i>	<i>65.51</i>	<i>71.94</i>
Average Days Receivables Outstanding	<i>62.41</i>	<i>68.81</i>	<i>66.55</i>
Length of Operating Cycle	<i>159.21</i>	<i>134.32</i>	<i>138.49</i>
Ratings	<i>3-4</i>	<i>4-5</i>	<i>4-5</i>

**Problem 4.4.** Financial Ratios – Leverage. The following additional information is provided on stock price.

	Du Pont	Dow	PPG
Stock Price, 5/1/2002	44.63	31.49	52.22
Shares Outstanding (millions)	1,002	905	168

Given the information above, calculate the leverage ratios for the three chemical companies. Rate leverage for these companies from 1 to 10.

	Du Pont	Dow	PPG
Debt to Equity	<b><i>178.99%</i></b>	<b><i>255.40%</i></b>	<b><i>174.42%</i></b>
Debt Ratio	<b><i>64.16%</i></b>	<b><i>71.86%</i></b>	<b><i>63.56%</i></b>
Debt to Market Equity	<b><i>57.84%</i></b>	<b><i>89.56%</i></b>	<b><i>61.23%</i></b>
Ratings	<b><i>4-5</i></b>	<b><i>4-5</i></b>	<b><i>4-5</i></b>

**Problem 4.5.** Financial Ratios – Profitability. Given the information above, calculate the profitability ratios for the three chemical companies. Rate profitability for these companies from 1 to 10.

	Du Pont	Dow	PPG
Gross Margin	<b>32.35%</b>	<b>20.82%</b>	<b>37.12%</b>
Return on Sales	<b>17.55%</b>	<b>-1.38%</b>	<b>4.74%</b>
Return on Assets	<b>10.88%</b>	<b>-1.22%</b>	<b>4.40%</b>
Return on Total Equity	<b>31.27%</b>	<b>-3.91%</b>	<b>12.53%</b>
Dividend Payout*	<b>32.33%</b>	<b>-314.99%</b>	<b>72.93%</b>
Ratings	<b>7-8</b>	<b>1-2 RF</b>	<b>4-5</b>

\*Dividends per share for 2001: Du Pont \$1.40; Dow \$1.34; PPG \$1.68

**Problem 4.6.** Du Pont Model. Given the information above, calculate the Du Pont Model for the three chemical companies. Rate Du Pont performance for these companies from 1 to 10.

	Du Pont	Dow	PPG
Profitability	<i>17.55%</i>	<i>-1.38%</i>	<i>4.74%</i>
Activity	<i>62.01%</i>	<i>88.05%</i>	<i>92.95%</i>
Return on Assets	<i>10.88%</i>	<i>-1.22%</i>	<i>4.40%</i>
Solvency*	<i>289.83%</i>	<i>320.95%</i>	<i>284.56%</i>
Return on Equity*	<i>31.54%</i>	<i>-3.91%</i>	<i>12.53%</i>
Ratings	<i>7-8</i>	<i>1-2 RF</i>	<i>4-5</i>

\* Only Du Pont has preferred stock, of \$237; deduct this amount from total stockholders' equity for total common equity; for other companies, common is the same as total.