

**Problem 5.1.** Growth Analysis. Given are performance numbers for the last five years to the three chemical companies.

Calculate the annual growth percentages for these chemical companies and rate from 1 to 10.

Du Pont

	1997-8	1998-9	1999-2000	2000-01	Total 97-01
Revenue	<b>-37.66%</b>	<b>8.68%</b>	<b>5.02%</b>	<b>-12.53%</b>	<b>-37.76%</b>
Gross Profit	<b>27.21%</b>	<b>-7.66%</b>	<b>0.44%</b>	<b>2.46%</b>	<b>-23.90%</b>
Net Income	<b>86.28%</b>	<b>71.65%</b>	<b>-69.91%</b>	<b>87.51%</b>	<b>80.42%</b>

Dow

	1997-8	1998-9	1999-2000	2000-01	Total 97-01
Revenue	<b>-7.88%</b>	<b>2.65%</b>	<b>21.55%</b>	<b>20.85%</b>	<b>38.90%</b>
Gross Profit	<b>-13.72%</b>	<b>-1.60%</b>	<b>3.12%</b>	<b>25.30%</b>	<b>9.70%</b>
Net Income	<b>-27.54%</b>	<b>1.60%</b>	<b>13.67%</b>	<b>NM</b>	<b>NM</b>

PPG

	1997-8	1998-9	1999-2000	2000-01	Total 97-01
Revenue	<b>1.78%</b>	<b>3.29%</b>	<b>11.24%</b>	<b>-5.33%</b>	<b>10.71%</b>
Gross Profit	<b>1.75%</b>	<b>-2.13%</b>	<b>8.58%</b>	<b>6.46%</b>	<b>15.11%</b>
Net Income	<b>12.18%</b>	<b>-29.09%</b>	<b>9.15%</b>	<b>-37.58%</b>	<b>-45.80%</b>

Company	Rating
Du Pont	<b>2-3</b>
Dow	<b>2-3</b>
PPG	<b>2-3</b>

**Problem 5.2.** Trend Analysis. An alternative to growth percentages is to set the earliest year as the base year = 100 and calculate the remaining years as percentage change. For Du Pont, 1997 is set to 100. Revenues for 1998 are calculated as  $24,767 / 39,730 = .6234$ . 2001 revenues for Dow are  $27,805 / 20,018 = 1.389$ .

Du Pont

	1997	1998	1999	2000	2001
Revenues	<i>100.00%</i>	<i>62.34%</i>	<i>67.75%</i>	<i>71.15%</i>	<i>62.24%</i>
Gross Profit	<i>100.00%</i>	<i>72.79%</i>	<i>78.37%</i>	<i>78.02%</i>	<i>76.10%</i>
Net Income	<i>100.00%</i>	<i>186.28%</i>	<i>319.75%</i>	<i>96.22%</i>	<i>180.42%</i>

Dow

	1997	1998	1999	2000	2001
Revenues	<i>100.00%</i>	<i>92.12%</i>	<i>94.56%</i>	<i>114.94%</i>	<i>138.90%</i>
Gross Profit	<i>100.00%</i>	<i>86.28%</i>	<i>84.90%</i>	<i>87.55%</i>	<i>109.70%</i>
Net Income	<i>100.00%</i>	<i>72.46%</i>	<i>73.62%</i>	<i>83.68%</i>	<i>-21.29%</i>

PPG

	1997	1998	1999	2000	2001
Revenues	<i>100.00%</i>	<i>101.78%</i>	<i>105.12%</i>	<i>116.94%</i>	<i>110.71%</i>
Gross Profit	<i>100.00%</i>	<i>101.75%</i>	<i>99.58%</i>	<i>108.12%</i>	<i>115.11%</i>
Net Income	<i>100.00%</i>	<i>112.18%</i>	<i>79.55%</i>	<i>86.83%</i>	<i>54.20%</i>

Analyze the trend data and compare it to the growth analysis from 5.1.

**The underlying data is the same and the overall interpretation also. The difference is presentation and what seems the most meaningful. Thus, Du Pont's long-term trend is obviously down for revenue and gross profit, but up (although erratic) for net income. The relations differ for Dow and PPG, since revenues and gross profit are generally up, but net income down for the period under analysis.**

**Problem 5.3.** Quarterly Analysis. The following performance information is available for the last five quarters for the three chemical companies (in millions).

Du Pont

	Mar 2002	Dec 2001	Sept 2001	Jun 2001	Mar 2001
Revenue	\$6,142	\$5,229	\$5,641	\$6,997	\$6,859
COGS	3,984	3,668	3,958	4,428	4,486
Gross Profit	2,158	1,561	1,683	2,269	2,373
SG&A	932	956	1,128	1,262	1,167
Net Income	479	3,915	142	<b>-213 RF</b>	495

Dow

	Mar 2002	Dec 2001	Sept 2001	Jun 2001	Mar 2001
Revenue	\$6,262	\$6,346	\$6,729	\$7,344	\$7,386
COGS	4,919	4,981	5,236	5,743	6,055
Gross Profit	1,343	1,365	1,493	1,601	1,331
SG&A	641	662	694	727	724
Net Income	105	<b>-37 RF</b>	57	280	<b>-685 RF</b>

PPG

	Mar 2002	Dec 2001	Sept 2001	Jun 2001	Mar 2001
Revenue	\$1,875	\$1,907	\$1,999	\$2,164	\$2,099
COGS	1,288	875	1,372	1,454	1,436
Gross Profit	587	1,032	627	710	663
SG&A	408	420	414	409	418
Net Income	52	83	93	155	56

Complete the following common-size and percentage change table.

Du Pont

	Common-size	Common-size	Common-size	% Δ from Previous Qtr	Δ same Qtr, 1 year ago
Period	Mar 2002	Dec 2001	Mar 2001	Dec 2001	Mar 2001
Revenue	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>17.5%</b>	<b>-10.5%</b>
COGS	<b>64.86%</b>	<b>70.15%</b>	<b>63.3%</b>	<b>8.7%</b>	<b>-11.2%</b>
Gross Profit	<b>35.14%</b>	<b>29.85%</b>	<b>32.4%</b>	<b>38.2%</b>	<b>-9.1%</b>
SG&A	<b>15.17%</b>	<b>18.28%</b>	<b>18.0%</b>	<b>-2.5%</b>	<b>-20.1%</b>
Net Income	<b>7.80%</b>	<b>74.87%</b>	<b>7.2%</b>	<b>-87.8%</b>	<b>-3.2%</b>

Dow

	Common-size	Common-size	Common-size	% Δ from Previous Qtr	Δ same Qtr, 1 year ago
Period	Mar 2002	Dec 2001	Mar 2001	Dec 2001	Mar 2001
Revenue	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>-1.3%</b>	<b>-15.2%</b>
COGS	<b>78.55%</b>	<b>78.49%</b>	<b>82.0%</b>	<b>-1.2%</b>	<b>-18.8%</b>
Gross Profit	<b>21.45%</b>	<b>21.51%</b>	<b>18.0%</b>	<b>-1.6%</b>	<b>0.9%</b>
SG&A	<b>10.24%</b>	<b>10.43%</b>	<b>9.8%</b>	<b>-3.2%</b>	<b>-11.5%</b>
Net Income	<b>1.68%</b>	<b>-0.58% RF</b>	<b>-9.3% RF</b>	<b>NM</b>	<b>NM</b>

PPG

	Common-size	Common-size	Common-size	% Δ from Previous Qtr	Δ same Qtr, a year ago
Period	Mar 2002	Dec 2001	Mar 2001	Dec 2001	Mar 2001
Revenue	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>-1.7%</b>	<b>-10.7%</b>
COGS	<b>68.69%</b>	<b>45.88%</b>	<b>68.4%</b>	<b>47.2%</b>	<b>-10.3%</b>
Gross Profit	<b>31.31%</b>	<b>54.12%</b>	<b>31.6%</b>	<b>-43.1%</b>	<b>-11.5%</b>
SG&A	<b>21.76%</b>	<b>22.02%</b>	<b>19.9%</b>	<b>2.9%</b>	<b>-2.4%</b>
Net Income	<b>2.77%</b>	<b>4.35%</b>	<b>2.7%</b>	<b>-37.3%</b>	<b>-7.1%</b>

Does the quarterly analysis indicate any red flags? Explain

**On a quarterly basis, there are many negative numbers, which are potential red flags. Revenues and profits are down consistently from earlier quarters and Dow had net losses in March and December 2001.**