

**THE PHOENIX FORECAST:
BANKRUPTCY BAROMETER 2003**

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PricewaterhouseCoopers LLP

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The Bankruptcy Barometer 2003

PricewaterhouseCoopers (PwC) estimates that the number of public bankruptcy filings in 2003 will decline slightly to approximately 180 while total assets of filing companies will decrease to approximately \$240 billion in 2003. With economic growth not expected to accelerate until the second half of 2003, there will be little immediate relief for the most “at-risk” companies in industries that have faced significant overcapacity (or low capacity utilization), severe price competition, and declining growth prospects. Companies that issued high-yield debt in the late 1990s (when junk bond issuance reached record levels) will continue to provide a pipeline of defaulting companies filing for bankruptcy.

During 2002, the lingering effects of two 2001 occurrences -- the national recession and the events of September 11 -- combined with the reaction to disclosure of accounting irregularities at a number of firms led to a record \$382 billion in assets reported by 189 companies filing bankruptcy. The year marked the ascent of 12 companies to the roster of largest filings since 1970.

The bankruptcy picture for 2003 will represent only a slight improvement from 2002 rather than the beginning of a return to average historical levels.

The Year 2002 in Review

As PwC correctly forecast last year, public company bankruptcy filings declined to 189 in 2002 from the record high of 257 filings in 2001. In **The Phoenix Forecast: Bankruptcy and Restructuring 2002**, PwC anticipated “*bankruptcy filings in 2002 could be as many as 200, ...well above the 1986 to 2000 average of 113 public company filings.*”¹

The year 2002 marked the ascent of 12 companies to the roster of the largest filings since 1970, adjusted for inflation. (See Table 1.) Indeed, the seven largest filings of 2002 accounted for 72 percent, or \$273 billion, of the \$382 billion in assets reported by the 189 companies filing for bankruptcy during the year.

¹ Carter Pate, *The Phoenix Forecast: Bankruptcy and Restructuring 2002*, March 2002.

Table 1. 45 Largest Bankruptcies Since 1970, Adjusted for Inflation

Rank	Company Name	Bankruptcy Date	Assets (Millions of \$)	
			Actual	Adjusted
1	WorldCom, Inc.	7/21/2002	\$103,914	\$105,796
2	Enron Corp.	12/2/2001	\$65,503	\$67,724
3	Conseco, Inc.	12/18/2002	\$61,392	\$62,504
4	Texaco, Inc.	4/12/1988	\$35,892	\$57,091
5	Global Crossing	1/28/2002	\$30,185	\$31,209
6	Penn Central	6/21/1970	\$6,851	\$29,988
7	UAL Corp.	12/9/2002	\$25,197	\$25,653
8	Pacific Gas & Electric	4/6/2001	\$21,470	\$22,950
9	Adelphia Communications	6/25/2002	\$21,499	\$22,228
10	Baldwin-United	9/26/1983	\$9,383	\$17,295
11	NTL, Inc.	8/8/2002	\$16,834	\$17,139
12	Kmart Corp.	1/22/2002	\$14,183	\$14,407
13	Reliance Group Holdings	6/12/2001	\$12,598	\$13,025
14	Federated Department Stores	1/15/1990	\$7,913	\$11,755
15	Continental Airlines Holdings	12/3/1990	\$7,656	\$10,923
16	Federal Mogul Corp.	10/1/2001	\$10,150	\$10,494
17	LTV Corp. (1st)	7/17/1986	\$6,307	\$10,380
18	Olympia & York Devel. Ltd.	5/14/1992	\$7,023	\$9,149
19	Comdisco, Inc.	7/16/2001	\$8,754	\$9,051
20	Maxwell Communications Corp.	12/16/1991	\$6,352	\$8,465
21	Columbia Gas System, Inc.	7/31/1991	\$6,196	\$8,331
22	US Airways, Inc.	8/11/2002	\$7,941	\$8,085
23	XO Communications, Inc.	6/17/2002	\$7,930	\$8,074
24	Owens Corning	10/5/2000	\$6,494	\$6,942
25	ANC Rental Corp.	11/13/2001	\$6,350	\$6,565
26	LTV Corp. (2nd)	12/29/2000	\$6,101	\$6,522
27	R.H. Macy & Co., Inc.	1/27/1992	\$4,812	\$6,355
28	Eastern Air Lines, Inc.	3/9/1989	\$4,037	\$6,293
29	Williams Communications Group, Inc.	4/22/2002	\$5,992	\$6,101
30	Integrated Health Services	2/2/2000	\$5,393	\$5,919
31	360Networks (USA), Inc.	6/28/2001	\$5,596	\$5,786
32	Montgomery Ward Holdings (1st)	7/7/1997	\$4,879	\$5,534
33	Winstar Communications, Inc.	4/18/2001	\$4,975	\$5,318
34	Allied Stores Corp.	1/15/1990	\$3,502	\$5,202
35	Loewen Group International	6/1/1999	\$4,674	\$5,130
36	Walter Industries (fka Hills Holdings)	12/27/1989	\$3,462	\$5,031
37	Dow Corning Corp.	5/15/1995	\$4,093	\$4,919
38	Southland Corp.	10/24/1990	\$3,439	\$4,906
39	McLeodUSA, Inc.	1/30/2002	\$4,755	\$4,841
40	Safety-Kleen Corp.	6/9/2000	\$4,367	\$4,702
41	PSINet, Inc.	5/31/2001	\$4,492	\$4,644
42	Bethlehem Steel Corp.	10/15/2001	\$4,347	\$4,494
43	Budget Group, Inc.	7/29/2002	\$4,470	\$4,551
44	Armstrong World Industries	2/2/2000	\$4,165	\$4,452
45	Trans World Airlines, Inc.	1/31/1992	\$3,277	\$4,406

Note 1: Year 2002 bankruptcies are shaded.

Note 2: Assets were generally taken from the last SEC 10-K filing before bankruptcy filing.

Note 3: Asset inflation is to June 2002 dollars using the CPI Index for All Urban Consumers-All Items 1982-84=100.

Source: PricewaterhouseCoopers L.L.P., based on BankruptcyData.com data

The December 2001 filing by Enron Corp. led to increased scrutiny of corporate reporting and finances. Major bankruptcies of 2002 include those that have been a direct result of the exposure of accounting irregularities. WorldCom, Inc. filed the largest bankruptcy in history, reporting \$103.9 billion in assets, ultimately restating profits by more than \$9 billion. Other large bankruptcies in 2002 involving financial irregularities included Global Crossing Ltd. and Adelphia Communications Corp.

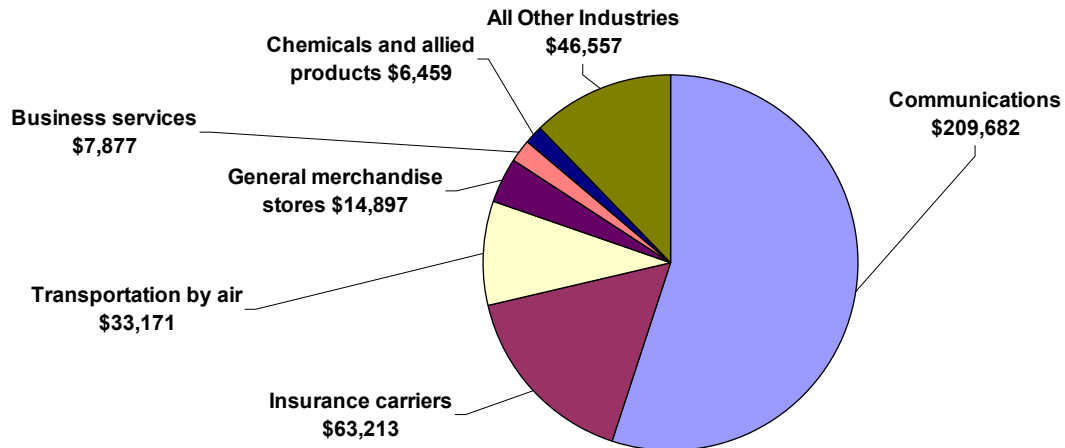
The continued effects of the national economic recession and the events of September 11 contributed to other major filings in 2002, including that of Kmart Corp, the largest retail filing in history. U.S. Airways Inc. and UAL Corp., the parent company of United Airlines, each filed for bankruptcy protection in 2002 after witnessing deteriorating revenues in the months following September 11.

By total assets, the five industries with the most assets at Chapter 11 filing were: communications, (\$210 billion), insurance carriers (\$63 billion), air transportation (\$33 billion), general merchandise stores (\$15 billion), and business services (\$8 billion). (See Table 2.) Each of these industries, except business services, placed one or more companies on the list of the largest 45 bankruptcies in history. The communications industry experienced seven filings in 2002 that ranked among the largest bankruptcies in history. Within the communications industry, wireless telecommunications carriers, wholesale interexchange carriers, and competitive local exchange carriers (*SIC 481 or NAIC 5133*) accounted for the largest number of filings. Within the business services industry, most of the filings occurred in computer programming services, prepackaged software, and computer integrated design (*SIC 7371, 7372, 7373 or NAIC 541511, 51121, 334611, and 541512*).

By number of companies, the five industries with the highest number of bankruptcy filings were communications (30 filings), business services (28), electrical and electronic equipment (12), primary metal industries (8), and industrial machinery and equipment (8). (See Table 3.) The majority of bankruptcies in the communications industry were telecommunications filings, while the majority of business services industry bankruptcies were among technology and software companies. Within the electrical and electronic equipment industry, filings were concentrated in the communications equipment and semiconductors sub-sectors (*SIC 366, 367 or NAIC 3342, 3344*). Within the primary metals industry, the 2002 filings were concentrated in steel works (*SIC 3312 or NAIC 331*). Within the industrial machinery and equipment industry, half of the filings were related to the manufacture of computer and office equipment. All but the primary metal industries also experienced the highest number of bankruptcy filings in 2001. (See Table 4.)

Table 2. Public Chapter 11 Filings by SIC Code, 2002, Ranked by Assets at Filing

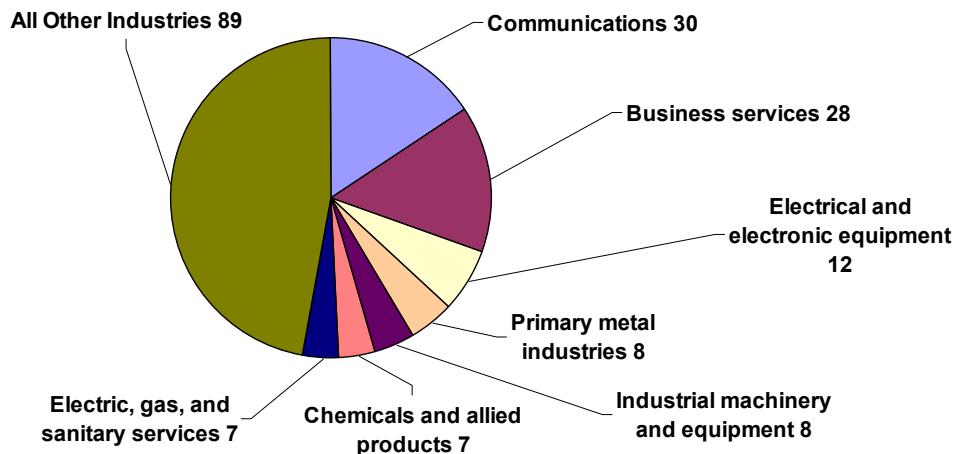
<u>Industry by 2-Digit SIC Code</u>	<u>Percentage of Bankrupt Assets</u>	<u>Assets at Filing (Millions)</u>
48 Communications	54.9%	\$209,682
63 Insurance carriers	16.6%	\$63,213
45 Transportation by air	8.7%	\$33,171
53 General merchandise stores	3.9%	\$14,897
73 Business services	2.1%	\$7,877
28 Chemicals and allied products	1.7%	\$6,459
49 Electric, gas, and sanitary services	1.4%	\$5,510
36 Electrical and electronic equipment	1.3%	\$4,938
33 Primary metal industries	1.3%	\$4,868
75 Automotive repair, services, and parking	1.2%	\$4,470
67 Holding and other investment offices	0.9%	\$3,623
20 Food and kindred products	0.8%	\$2,901
22 Textile mill products	0.7%	\$2,835
17 Special trade contractors	0.6%	\$2,401
37 Transportation equipment	0.4%	\$1,530
34 Fabricated metal products	0.3%	\$1,324
30 Rubber and miscellaneous plastics products	0.3%	\$1,157
51 Wholesale trade--nondurable goods	0.3%	\$1,101
99 Nonclassifiable	0.3%	\$1,087
42 Motor freight transportation and warehousing	0.3%	\$1,010
62 Security, commodity brokers, and services	0.3%	\$984
24 Lumber and wood products	0.2%	\$922
50 Wholesale trade--durable goods	0.2%	\$892
35 Industrial machinery and equipment	0.2%	\$839
13 Oil and gas extraction	0.2%	\$672
61 Nondepository credit institutions	0.1%	\$565
32 Stone, clay, glass, and concrete products	0.1%	\$536
58 Eating and drinking places	0.1%	\$445
14 Nonmetallic minerals, except fuels	0.1%	\$427
80 Health services	0.1%	\$404
Others	0.3%	\$1,118
Total for 2002	100.0%	\$381,856



Sources: PricewaterhouseCoopers L.L.P., BankruptcyData.com

Table 3. Public Chapter 11 Filings by SIC Code, 2002, Ranked by Number of Filings

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Total for 2002	100.0%	\$381,856



Sources: PricewaterhouseCoopers L.L.P., BankruptcyData.com

PwC's **The Phoenix Forecast: Bankruptcy and Restructuring 2002** correctly anticipated the particular distress experienced by the telecommunications, computer hardware, retail trade, and metals sectors and the consequent high numbers of bankruptcy filings in these sectors. The primary difference in the industry composition of 2002 bankruptcies from 2001 is the abrupt increase in the number of filings in the transportation and electric and gas industries.

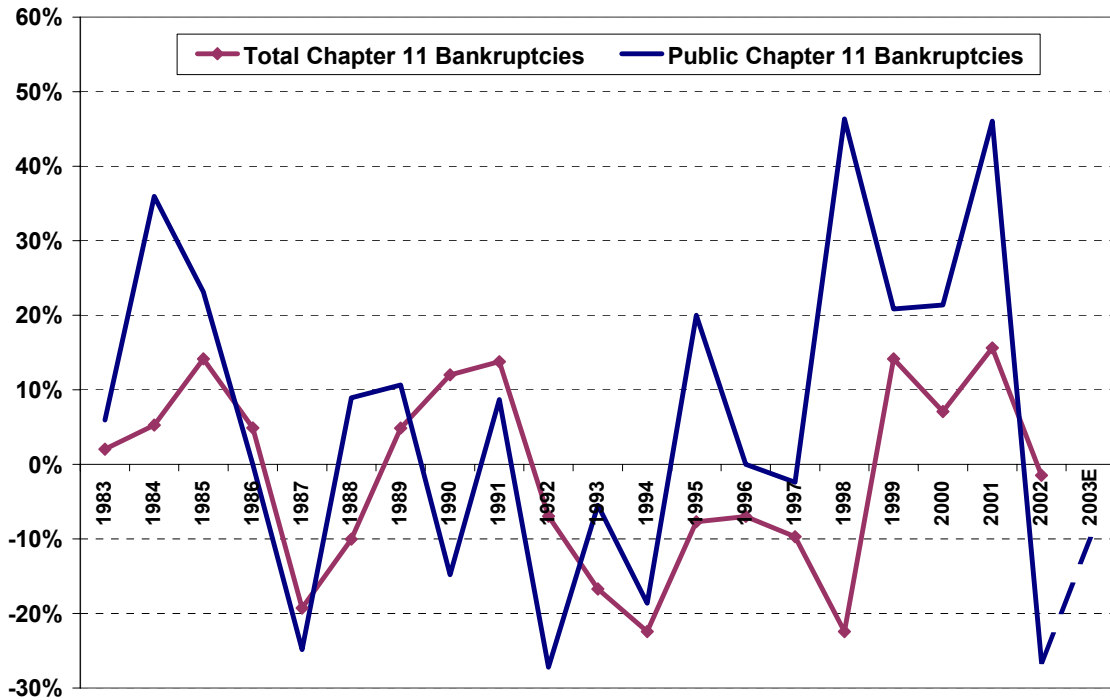
Table 4. Public Chapter 11 Filings by SIC Code, 2001, Ranked by Number of Filings

<u>Industry by 2-Digit SIC Code</u>	<u>Number of Companies</u>	<u>Percentage of Total Filings</u>
73 Business services	37	14.4%
48 Communications	30	11.7%
36 Electrical and electronic equipment	17	6.6%
35 Industrial machinery and equipment	13	5.1%
50 Wholesale trade--durable goods	12	4.7%
28 Chemicals and allied products	11	4.3%
58 Eating and drinking places	9	3.5%
59 Miscellaneous retail	9	3.5%
34 Fabricated metal products	7	2.7%
67 Holding and other investment offices	6	2.3%
22 Textile mill products	5	1.9%
37 Transportation equipment	5	1.9%
39 Miscellaneous manufacturing industries	5	1.9%
51 Wholesale trade--nondurable goods	5	1.9%
78 Motion pictures	5	1.9%
20 Food and kindred products	4	1.6%
27 Printing and publishing	4	1.6%
61 Nondepository credit institutions	4	1.6%
80 Health services	4	1.6%
17 Special trade contractors	3	1.2%
33 Primary metal industries	3	1.2%
38 Instruments and related products	3	1.2%
42 Motor freight transportation and warehousing	3	1.2%
45 Transportation by air	3	1.2%
49 Electric, gas, and sanitary services	3	1.2%
52 Building materials, hardware, garden supply	3	1.2%
54 Food stores	3	1.2%
63 Insurance carriers	3	1.2%
75 Automotive repair, services, and parking	3	1.2%
87 Engineering and management services	3	1.2%
All Other Industries	<u>32</u>	<u>12.5%</u>
Total for 2001	257	100%

Sources: PricewaterhouseCoopers L.L.P., BankruptcyData.com

The 26 percent decrease in the number of public company Chapter 11 filings from 257 in 2001 to 189 in 2002 contrasts with the one percent decline in total public and private Chapter 11 filings and two percent decline in total business bankruptcy filings (including Chapter 7, 12, and 13). In 1992, the decline in public bankruptcies also preceded the decline in overall filings. Public company filings declined by 27 percent, while overall Chapter 11 filings and total business bankruptcy filings declined by two percent and seven percent, respectively. (See Chart 1.)

Chart 1. Annual Chapter 11 Bankruptcy Filings, Percentage Change From Prior Year



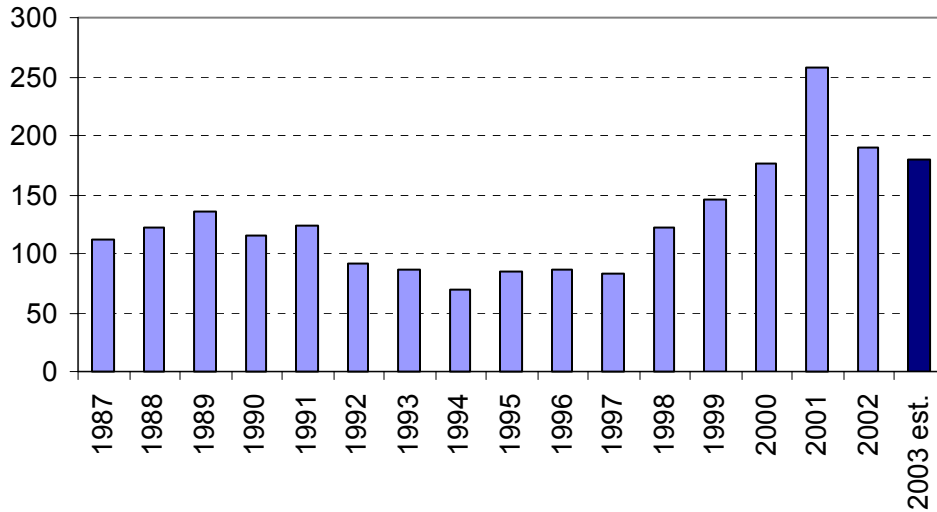
Sources: PricewaterhouseCoopers L.L.P., Economy.com, Bankruptcydata.com

At the beginning of 2002, PwC forecast that increased economic pressures would lead to approximately 10,800 private business bankruptcy filings in 2002. Approximately 10,300 private firms filed for Chapter 11 protection in 2002, essentially the same number as in 2001.

The Forecast for 2003

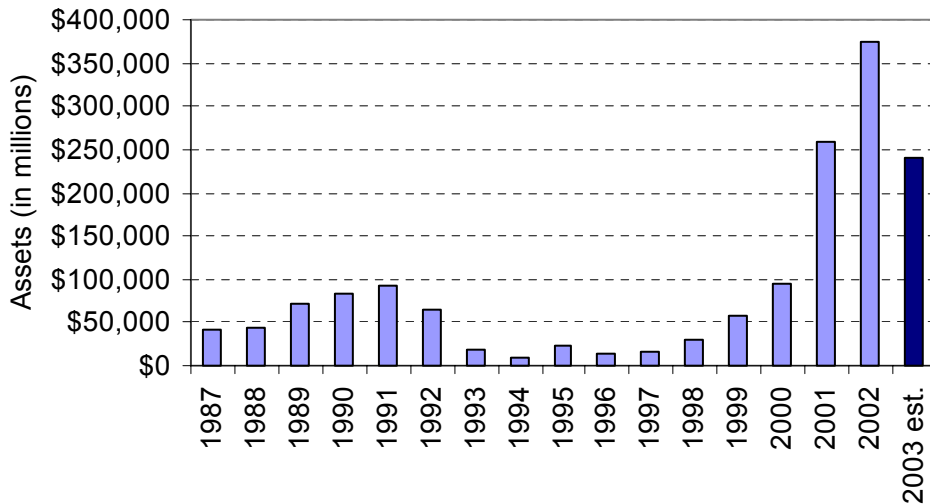
PwC forecasts that the number of public company filings will decline slightly in 2003 to approximately 180 companies, or only about five percent below the 2002 level. The total assets of public companies filing for Chapter 11 in 2003 will likely exhibit a more significant decline, as PwC anticipates that there will be fewer very large bankruptcies in 2003 (see Chart 2.). PwC expects that the total assets of public companies filing for Chapter 11 bankruptcy will fall to \$240 billion, a decline of 37 percent compared to 2002. Nevertheless, this will still represent the third highest total assets at filing over the 1987 to 2003 period. (See Chart 3.)

Chart 2. Annual Public Company Chapter 11 Filings: History and 2003 PwC Forecast



Sources: PricewaterhouseCoopers L.L.P. (2003 estimate), BankruptcyData.com (historical data).

Chart 3. Assets at Filing of Public Company Chapter 11 Filings: History and 2003 PwC Forecast



Sources: PricewaterhouseCoopers L.L.P. (2003 estimate), BankruptcyData.com (historical data).

To develop these forecasts, PwC created an econometric model designed to quantify the relationship between observed business conditions and the incidence of bankruptcy filings. This may well be the first model of aggregate bankruptcy filings. PwC focused on five factors that influence the level of bankruptcy filings: degree of corporate leverage, cost of borrowing, prevalence of excess production capacity, change in high-yield debt issuance, and aggregate economic activity. Each of these factors is described in the Appendix.

To quantify the influence of these factors in a manner suitable for predicting future bankruptcies, PwC developed a multiple regression model in which the number of bankruptcies, the dependent variable, is predicted by changes in one or more explanatory variables.

The framework of the PwC bankruptcy model may be represented as an equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5$$

Where: Y = number of bankruptcy filings by public companies

X₁ = degree of corporate leverage

X₂ = cost of borrowing

X₃ = prevalence of excess production capacity

X₄ = change in high-yield debt issuance

X₅ = aggregate economic activity

and the β terms represent estimated coefficients.

To estimate the model, PwC gathered available time series data to represent the five factors. A number of candidates were considered as explanatory variables for the equation. The final selection was based on two criteria: 1) perceived strength as a representative of one or more of the five factors outlined in the model framework; and 2) success in replicating the actual historical path of bankruptcy filings in forecast simulations. Examples of the time series considered as potential explanatory variables are included in the Appendix. These series include, for example, the level of net interest payments relative to cash flows among non-financial corporations, a measure of corporate leverage reported by the Federal Reserve.

In some cases, a change in the value of an explanatory variable took several quarters to have an effect on the number of bankruptcy filings. Such variables were included as lagged variables in the model. Others exhibited coincident relationships, in which conditions in a specific quarter had an impact on the number of filings that occurred in that quarter. As a result, the forecast of the number of bankruptcies expected to occur in 2003 depends on certain conditions already in place during 2002 as well as on expected developments in the economy during 2003.

The PwC bankruptcy model's performance may be summarized as follows:

- The model explained 85 percent of the historical (1988 to 1995) variation of bankruptcy filings above and below the quarterly mean number of filings, indicated by the model's R-square of 0.85. The share of variation

explained by the group of explanatory variables included in the model was significant at the one percent level, as tested with the F-statistic.

- Predictions produced by the PwC bankruptcy model for the following year were typically within 15 percent of the actual number of bankruptcy filings that eventually occurred. PwC simulated a series of eight *ex post* forecasts, testing the model's success at predicting the number of bankruptcies that would occur in the following year.² The annual mean absolute percentage error during these trials was 15.2 percent. Note that the time series on bankruptcy filings is volatile itself and has shown a standard deviation of 16 quarterly filings and mean of 26 quarterly filings over the 1988 Q1 to 2002 Q4 period.
- The model accurately predicted whether bankruptcy filings will increase or decrease in the following year. In 87.5 percent of the *ex post* forecast trials, the PwC bankruptcy model accurately predicted whether bankruptcy filings would increase or decrease in the forecast year.
- Statistical measures show that the selected model specification was preferable to other specifications that were studied. The Akaike information criterion and the Schwartz criterion, which are both statistical measures that may be used to evaluate the advantage of adding additional explanatory variables, were lower in the selected model than they were in other models tested.

Characteristics of the bankruptcy filings series and the PwC bankruptcy forecast model are shown below.

PwC Bankruptcy Forecast Model Characteristics

Bankruptcy series

Sample: Quarterly 1988Q1 to 2002Q4

Number of observations: 60

Standard deviation: 15.7

Mean: 26.2

Median: 20.5

Maximum: 70

Minimum: 7

² In these trials, the regression coefficients of the model were estimated over a historical period, for example 1988 Q1 to 1995 Q4. The model was then used to forecast the number of bankruptcies that would occur during the next year (an *ex post* forecast) and this forecast was compared to the actual number of filings. In this example, the model projected 79 bankruptcies in 1996, and 69 actually occurred, resulting in an absolute percentage error of 14.5 percent.

Model characteristics

R-squared: 0.85

F-statistic: 60.2 (significant at one percent level)

Standard error of regression: 6.3

Akaike information criterion: 6.6

Adjusted R-squared: 0.84

Schwartz criterion: 6.8

***Ex post* forecast trial results (eight one-year forecasts)**

Annual mean absolute percentage error (“MAPE”): 15.2 percent

Quarterly MAPE: 22.0 percent

Share of trials in which the model predicted the correct direction of change: 87.5 percent

There are at least two risks to this bankruptcy forecast.

- Some of the largest bankruptcy filings in 2002 were related to discoveries of corporate governance issues and accounting irregularities that obscured underlying financial stress. In some cases, there were fundamental problems already detected in financial ratios; in others, the restatement of earnings came as a total surprise. The substantial closure of Arthur Andersen has led to changes in company auditors, regulations, and enforcement, and these in turn could lead to a few more allegations or discoveries of accounting or governance issues as 2002 annual results are audited in 2003.
- In addition, if the U.S. were to go to war with Iraq, some companies in industries such as the travel sector, will become particularly vulnerable. The Persian Gulf War of 1991 led to a severe contraction in airline and lodging demand for one quarter. A protracted war (13 to 26 weeks) in 2003 associated with heavy U.S. casualties will result in demand and revenue declines similar to the one experienced after the September 11 events (the worst since the Great Depression) in lodging, according to a report by the Hospitality & Leisure specialists at PwC.³

³ PricewaterhouseCoopers Hospitality Directions, Forecast Update, December 2002.

The Macroeconomic and Credit Market Outlook

Consensus forecasts suggest that the U.S. economy will continue to perform at levels only slightly better than 2002, and most of the improvement will occur in the second half of 2003. It is unlikely that the momentum occurring later in 2003 will support the rapid corporate revenue growth needed to prevent a significant number of distressed companies from going into bankruptcy. There are several indicators that the number of companies in distress is still high, including the overall poor quality of corporate credit, the high number of companies that have experienced protracted periods of negative or declining earnings, and the high number of companies still considered at high risk of becoming insolvent.

These support the results from the PwC econometric model that the number of public company Chapter 11 filings in 2003 will not decline dramatically from the 189 filings in 2002, even with the expected economic growth in 2003. The details of the macroeconomic, corporate profit, and credit market outlook that formed this view are presented below.

Consensus forecasts call for a gradual strengthening in real GDP growth in 2003. Macroeconomic Advisers (which provides the macroeconomic assumptions for PwC industry models) forecasts real GDP growth to accelerate from 0.7 percent in the fourth quarter of 2002 to 2.0 percent in the first half of 2003, and then to strengthen further to 5.2 percent in the second half. (The growth rates are seasonally adjusted annual rates.) On an annual basis, real GDP growth is forecast to improve to 2.6 percent in 2003 and to 4.2 percent in 2004, compared to the 2.4 percent growth achieved in 2002.⁴

Growth in personal consumption expenditures will remain vital to the rebound in 2003. However, much of expected boost in 2003 is predicated upon improvement in business capital spending and acceleration in inventory building. (See Table 5.)

⁴ Macroeconomic Advisers L.L.C., Economic Outlook, 15 February 2003.

Table 5. Key Macroeconomic Assumptions

	<u>Real GDP</u>	<u>Consumer Price Index</u>	<u>Personal Consumption Expenditures</u>	<u>Non-Residential Fixed Investment</u>	<u>Corporate Profits with IVA and CCADJ *</u>	<u>Capacity Utilization Manufacturing</u>	<u>Aaa Corporate Bond Yield</u>
	<i>Seas. Adj. Annual Rate</i>	<i>Percentage Change from Prior Year</i>	<i>Seas. Adj. Annual Rate</i>	<i>Seas. Adj. Annual Rate</i>	<i>Annual Rate</i>	<i>Percent</i>	<i>Percent</i>
2001 Q1	-0.6%	3.4%	2.4%	-5.4%	-21.1%	77.3%	7.08%
Q2	-1.6	3.4	1.4	-14.5	8.7	75.5	7.22
Q3	-0.3	2.7	1.5	-6.0	-17.7	74.3	7.11
Q4	2.7	1.9	6.0	-10.9	94.4	73.0	6.92
2002 Q1	5.0	1.4	3.1	-5.8	-6.6	73.4	6.62
Q2	1.3	3.4	1.8	-2.4	-6.2	73.9	6.71
Q3	4.0	1.9	4.2	-0.8	-6.9	74.2	6.35
Q4	0.7	2.4	1.0	1.5	-14.2	73.7	6.28
2003 Q1	1.9	3.4	1.2	-1.9	1.3	73.8	6.40
Q2	2.1	2.2	2.2	1.0	-3.8	74.0	6.22
Q3	5.4	1.3	4.9	10.9	29.7	74.8	6.15
Q4	5.0	2.0	3.5	12.3	22.1	75.7	6.34
2004 Q1	4.5	2.2	4.0	12.4	13.6	76.5	6.31
Q2	4.0	2.2	3.2	12.6	11.5	77.1	6.37
Q3	3.5	2.2	2.9	11.5	5.3	77.5	6.38
Q4	3.5	2.3	2.8	10.7	5.1	77.9	6.47

Note: IVA stands for inventory valuation adjustment and CCADJ stands for capital consumption adjustment.

Sources: Macroeconomic Advisers LLC, Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve Board.

The key assumptions behind Macroeconomic Advisers' forecast for improved growth in 2003 and 2004 are the following:

- Rising stock prices are projected to lead to a 30 percent increase in the value of household holdings of equities from the end of the fourth quarter of 2002 through the end of 2004, gradually diminishing the drag on consumer spending from negative equity wealth effects.
- Business investment in equipment and software is projected to expand by 5.4 percent in 2003 and 13.8 percent in 2004, responding partly to lower cost of equity capital. The recovery of business investment will be tempered by continuing low levels of capacity utilization. By the end of 2003, capacity utilization in manufacturing is expected to be 75.7 percent, still significantly below the 81.2 percent capacity utilization in the 1990 to 2000 period.
- Inflation is expected to remain modest, so the Fed is likely to hold the target federal funds rate at 1.25 percent until October 2003. The target rate could reach 3.5 percent by the end of 2004.

Macroeconomic Advisers forecasts that after two years of erratic movements, corporate profits will increase slowly in 2003. On a year-on-year basis, corporate profit is forecast to increase by 11.5 percent in 2003 and 8.8 percent in 2004, after declining by 8.6 percent in 2002.

Corporate credit quality is expected to stabilize in 2003, as both default rates and the ratio of downgrades to upgrades continue to fall gradually from the 2001 peaks. S&P expects that the ratio of downgrades to upgrades will decrease to 2.5-to-1 or 3.5-to-1 in 2003, from 5.1-to-1 in 2001 and 4.2-to-1 in 2002. S&P also expects the corporate bond default rate (including both investment-grade and high-yield bonds) to improve in 2003 from the 4.2 percent high in 2001 and 3.2 percent in 2002.⁵

Nevertheless, overall credit quality remains poor, partly a legacy of the significant issuance of “junk bonds” and other high-yield debt in the 1990s. Fitch Ratings noted a significant increase in high-yield defaults to \$109.8 billion in 2002 for a new par-based record default rate of 16.4 percent, compared to a \$78.2 billion default volume and 12.9 percent default rate in 2001. Fitch forecasts that the default rate will range between seven percent and eight percent on a par basis in 2003, compared to the typical 4.5 percent.⁶ Both S&P and Moody’s also reported a dramatic increase in the number of “fallen angels,” the term used for companies that were once investment grade credits, but have since been downgraded to junk. In the 1990s, Moody’s created nine fallen angels. In 2002, 14 Moody’s-rated firms fell below investment grade status. At the same time, S&P recorded 17 fallen angels in 2002, up from 14 the previous year.⁷

⁵ Standard & Poor’s, “*Corporate Defaults Peak in 2002 Amid Record Amounts of Defaults and Declining Credit Quality – Hazards Remain*,” 23 January 2002. See also Dena Aubin, “*U.S. Credit Slump Lingers, But Worst Over – S&P*,” Reuters News, 10 January 2003.

⁶ Fitch Ratings, “*Investors Lose \$80 Billion Par Value on 2002 Defaults*,” press release, 13 January 2003. See also John Hintze, “*Despite Tough Environment, Banks are Ready to Lend*,” Bank Loan Report, 20 January 2003.

⁷ Martin Baccardax, “*Pensions, Rating Triggers Top 2003 Credit Market Worries*,” Dow Jones International News, 16 December 2002. See also Standard & Poor’s, “*Fallen Angels: To Rise No More?*” 24 January 2003.

Industries Likely to See Most Bankruptcies in 2003

The outlook for a moderate decline in the number of public Chapter 11 filings amid a more significant decline in total assets of companies filing for bankruptcy is predicated upon the macroeconomic and credit outlook outlined above combined with industry analyses.

To gauge industry concentrations of future filings, PwC analysed two databases. PwC examined evidence first from Standard and Poor's z-score model of company distress and second from the field of public U.S. companies that have experienced six consecutive quarters of decline in annual earnings.

The z-score model identified 3,009 companies (of a universe of 22,000) that, based on 2001 financial data, are operating under financial distress.⁸ While only a percentage of these companies will ultimately file for bankruptcy protection, the distribution of distressed companies among industries points to the industries that are likely to show further distress in 2003. (See Table 6.)

Standard and Poor's data were also used to examine companies that have experienced a decline in annual earnings over six consecutive quarters through the third quarter of 2002. From a universe of over 10,000 publicly traded companies, PwC identified a total of 355 companies that experienced declining earnings for the period, 315 of which appeared to experience a structural erosion in earnings, as opposed to a temporary decline. (See Table 7.)

The analyses indicated that companies in distress tend to be concentrated in the following industries:

- energy (mainly in the utilities and oil and gas sectors);
- telecommunications (primarily wirelines and wireless carriers);
- machinery and equipment production (primarily semiconductor and communications equipment manufacturing);
- business services (mainly computer software and management consulting);

⁸ Edward Altman, "Predicting Financial Distress of Companies: Revisiting the z-Score and Zeta Models," July 2000. Standard and Poor's z-score model of company distress is a predictive multiple discriminate analysis model developed by Professor Edward Altman at New York University. The model's discriminant function uses five variables based on ratios derived from each firm's sales, EBIT (earnings before interest and taxes), total assets, total liabilities, working capital, and market value of equity. Within the model, companies with z-scores below 1.81 are classified as distressed, with an increased likelihood of ultimately filing for bankruptcy protection.

- airlines and aerospace; and
- industrial metals and mining (primarily steel and aluminium).

Table 8 summarizes the outlook for the weakest segments in these industries. Some industries are undergoing structural changes such as telecommunications, steel, and energy trading and marketing. Others like high technology (semiconductors, computer manufacturing, and computer software) are recovering from cyclical slumps but face much slower growth trajectories compared to the pace in the 1990s. Still others such as the airline and aerospace industries are being forced to undergo structural changes due to severe contraction in demand amid much higher operating costs.

Although the filings will be concentrated in these industries, Tables 6 and 7 indicate that bankruptcy filings will occur across many industries, as the financially weakest companies in stable or strong industries remain vulnerable in a slow growth environment.

Table 6. Industries with a Concentration of Public Companies Operating in Distress, Measured by S&P z-scores below 1.81, 2001 and Partial 2002

<u>Industry by 2-Digit SIC Code</u>	<u>Number of Companies Operating in Distress 2001</u>	<u>Share of All Distressed Companies</u>
73 Business services	630	21%
49 Electric, gas, and sanitary services	260	9%
28 Chemicals and allied products	213	7%
48 Communications	207	7%
35 Industrial machinery and equipment	181	6%
36 Electrical and electronic equipment	179	6%
38 Instruments and related products	126	4%
13 Oil and gas extraction	115	4%
87 Engineering and management services	69	2%
10 Metal mining	54	2%
79 Amusement and recreational services	53	2%
59 Miscellaneous retail	52	2%
80 Health services	49	2%
20 Food and kindred products	47	2%
33 Primary metal industries	45	1%
27 Printing and publishing	43	1%
37 Transportation equipment	43	1%
99 Nonclassifiable	41	1%
58 Eating and drinking places	39	1%
30 Rubber and miscellaneous plastics products	38	1%
34 Fabricated metal products	34	1%
50 Wholesale trade--durable goods	33	1%
78 Motion pictures	27	1%
26 Paper and allied products	26	1%
67 Holding and other investment offices	25	1%
70 Hotels and other lodging places	25	1%
23 Apparel and other textile products	24	1%
51 Wholesale trade--nondurable goods	22	1%
39 Miscellaneous manufacturing industries	21	1%
45 Transportation by air	21	1%
65 Real estate	21	1%
44 Water transportation	19	1%
40 Railroad transportation	13	0%
61 Nondepository credit institutions	13	0%
All other	<u>201</u>	<u>7%</u>
Total	3009	100%

Source: PricewaterhouseCoopers, L.L.P. based on Standard and Poor's Compustat Research Insight CD-ROM 12/31/2002

Table 6a. Select Detail of Top Industries with a Concentration of Public Companies Operating in Distress, Measured by S&P z-scores below 1.81, 2001 to 2002

<u>Industry by 3-Digit SIC Code</u>	<u>Number of Companies Operating in Distress 2001</u>	<u>Percent of Companies in Sample Operating In Distress</u>
73 Business Services	630	38%
731: Advertising	20	49%
737: Computer Programming, Data Processing	526	40%
738: Miscellaneous Business Services	58	38%
49 Electric, Gas and Sanitary Services	260	64%
491: Electric Services	112	77%
492: Gas Production And Distribution	45	51%
493: Combination Electric And Gas, and Other Utility	54	72%
494: Water Supply	13	59%
495: Sanitary Services	28	44%
28 Chemicals and Allied Products	213	29%
282: Plastics Materials And Synthetic Resins, Synthetics	16	50%
283: Drugs	138	26%
284: Soap, Detergents, And Cleaning Preparations;	19	32%
286: Industrial Organic Chemicals	10	38%
287: Agricultural Chemicals	11	55%
48 Communications	207	53%
481: Telephone Communications	109	50%
483: Radio And Television Broadcasting Stations	40	56%
484: Cable And Other Pay Television Services	21	60%
489: Communications Services, Not Elsewhere	33	55%
35 Industrial and Commercial Machinery and Computer Equipment	181	29%
353: Construction, Mining, and Materials Handling	13	28%
355: Special Industry Machinery, Except Metalworking	21	23%
356: General Industrial Machinery and Equipment	14	20%
357: Computer and Office Equipment	103	34%
358: Refrigeration and Service Industry Machinery	13	28%
36 Electronic and Other Electrical Equipment and Components except Computers	179	24%
366: Communications Equipment	89	34%
367: Electronic Components and Accessories	54	19%
369: Miscellaneous Electrical Machinery, Equipment,	15	36%
38: Measuring, Analyzing, and Controlling Instruments, Medical and Optical Goods	126	20%
382: Laboratory Apparatus and Analytical, Optical	32	14%
384: Surgical, Medical, and Dental Instruments	73	22%
386: Photographic Equipment and Supplies	10	34%
13: Oil and Gas Extraction	115	36%
131: Crude Petroleum and Natural Gas	104	40%
138: Oil and Gas Field Services	11	19%
87: Engineering, Accounting, Research, Management, and Related Services	69	27%
873: Research, Development, and Testing Services	23	26%
874: Management and Public Relations Services	33	41%

Source: PricewaterhouseCoopers, L.L.P. based on Standard and Poor's Compustat Research Insight CD-ROM 12/31/2002

Table 7. Industries with a Concentration of Public Companies with Protracted Earnings Declines, through Period Ending Third Quarter 2002, with Total Assets in Millions of Dollars

<u>Industry by 2-Digit SIC Code</u>	<u>Number of Companies with Protracted Earnings Declines through Third Quarter 2002</u>	<u>Total Assets of Companies as of 12/31/2001</u>
28 Chemicals and allied products	46	\$31,414
73 Business services	35	\$17,890
36 Electrical and electronic equipment	33	\$25,922
35 Industrial machinery and equipment	18	\$14,166
38 Instruments and related products	16	\$1,887
60 Depository institutions	10	\$10,836
48 Communications	9	\$169,916
33 Primary metal industries	9	\$49,604
87 Engineering and management services	9	\$1,515
26 Paper and allied products	8	\$40,407
13 Oil and gas extraction	8	\$3,997
63 Insurance carriers	7	\$102,792
62 Security, commodity brokers, and services	7	\$7,850
50 Wholesale trade--durable goods	7	\$7,442
49 Electric, gas, and sanitary services	6	\$23,191
34 Fabricated metal products	6	\$1,794
39 Miscellaneous manufacturing industries	5	\$783
51 Wholesale trade--nondurable goods	4	\$7,006
56 Apparel and accessory stores	4	\$1,279
30 Rubber and miscellaneous plastics products	4	\$960
67 Holding and other investment offices	4	\$289
70 Hotels and other lodging places	3	\$6,206
37 Transportation equipment	3	\$2,891
22 Textile mill products	3	\$1,502
61 Nondepository credit institutions	3	\$1,267
65 Real estate	3	\$886
79 Amusement and recreational services	3	\$340
10 Metal mining	3	\$54
40 Railroad transportation	2	\$50,161
27 Printing and publishing	2	\$1,438
72 Personal services	2	\$1,066
83 Social services	2	\$894
25 Furniture and fixtures	2	\$470
59 Miscellaneous retail	2	\$341
42 Motor freight transportation and warehousing	2	\$338
82 Educational services	2	\$335
80 Health services	2	\$265
55 Automotive dealers and gasoline stations	2	\$171
58 Eating and drinking places	2	\$166
23 Apparel and other textile products	2	\$28
78 Motion pictures	2	\$17
All other	<u>13</u>	<u>\$20,246</u>
Total	315	\$610,022

Source: PricewaterhouseCoopers, L.L.P. based on Standard and Poor's Compustat Research Insight CD-ROM 12/31/2002

Table 8. Summary of Industry Outlook for Industries with Concentration of Companies in Distress

	Gas and Electric Utilities	Oil & Gas – Drilling, Services, Production and Exploration	Wireline Telecommunications (Telcos)
Industry Outlook	<ul style="list-style-type: none"> ▪ Discovery of risks related to the business model of energy merchants led to credit downgrades and defaults in the sector in 2002. ▪ More defaults and bankruptcies are widely expected in 2003, as investigations into trading and accounting practices continue while capital markets remain closed to this sector. Some bankruptcies may be liquidity-induced. ▪ Growth prospects for North American base gas production are threatened by rising decline rates and low rig counts, unless rising prices stimulate exploration. 	<ul style="list-style-type: none"> ▪ Although companies such as Burlington Resources have recovered from large debt-financed transactions, several companies remain highly leveraged. ▪ Utilization and rates in the U.S. Gulf of Mexico and onshore U.S. remain relatively weak. ▪ Forecasts of worldwide field declines through 2010 amid moderately increasing demand will compel industry to undertake extensive investment in production and exploration 	<ul style="list-style-type: none"> ▪ Industry revenues are expected to grow at 3.3% per year between 2000 and 2005, slower than the 5.9% annual growth achieved between 1992 and 2000. ▪ Weak business capital spending and weak demand from carrier customers will continue to strain the competitive local exchange carrier (CLEC) segment, following a two-year rush of business failures. ▪ An overbuilt fiber optic infrastructure combined with competition from new technologies and traditional interexchange carriers (IXCs) continues to challenge wholesale IXCs or long-distance carriers.
Risk Factors	<ul style="list-style-type: none"> ▪ Regulatory actions that prevent cost recovery or influence cost of production (through environmental protection or production incentive programs). ▪ Heavy fines related to outcomes of Washington investigations. 	<ul style="list-style-type: none"> ▪ Sovereign risk associated with events in Argentina and Venezuela. ▪ Possible war with Iraq. 	
Other Comments	<ul style="list-style-type: none"> ▪ Although asset-based operations are forecast to rebound soon, the turnaround for energy trading and marketing operations is not expected before 2005. ▪ Barred from passing on higher energy costs to consumers, some companies are struggling with credit difficulties. ▪ Financial positions of utility companies with significant merchant exposure will continue to weaken. ▪ M&A activity might re-start between gas and electric utilities and between utilities and unregulated energy companies, once the U.S. economy and the stock market revive. 	<ul style="list-style-type: none"> ▪ Cost containment will remain a focus for exploration & production companies in 2003. ▪ Integrated majors will begin to increase exploration and production budgets in 2003, after cutting back in 2002. Focus will be larger and lower-costs projects abroad, according to S&P. ▪ M&A activity among equipment and services companies was high in 2002 and likely to continue. There will be intense pressure for M&A among oil and gas producers. ▪ Lack of skilled labor is a serious constraint on future growth. 	<ul style="list-style-type: none"> ▪ Bankrupt CLECs will continue to be targets of consolidation. ▪ Restructurings of remaining CLECs will continue. ▪ The credit default rate of global telecomm companies rose from 10.85% in 2001 to 17.83 % in 2002. ▪ A sign that difficulties continue to beset the industry in 2003 is the nearly 25% share of telecomm issuers of S&P’s list of weakest-rated global issuers, the largest industry concentration.

	Telecommunications – Wireless Carriers	Semiconductors and Computer Components	Business Services: Computer Software and Management Consulting Services
Outlook	<ul style="list-style-type: none"> ▪ The maturing wireless industry is forecast to achieve slower subscriber growth in the future, given already high wireless penetration. ▪ Meanwhile, the average revenue per unit continues to decline because of competition. ▪ This price competition, amid continued necessary investments in network quality, has put pressure on profits. ▪ Introduction of third generation (3G) data services may not provide the anticipated revenue boost in the near-term. 	<ul style="list-style-type: none"> ▪ Capacity utilization fell to 64.5 percent in 2002, or 32% below the average utilization in the last decade. Although chip sales began to increase in early 2002, they levelled off in the second half, and job losses resumed at a rapid rate. Pressure on chip prices remained, given weak demand for electronic goods and ample production capacity. ▪ With the personal computer shipments expected to increase by 7% in 2003, after increasing 4% in 2002, the demand for various components should recover. ▪ This contrasts with continued contraction in demand from communications equipment manufacturers, which account for about 26% of demand. ▪ The long-run growth in semiconductor sales is expected to slow down to 8% to 10% from the 16.1% compound annual growth rate achieved in 1975 to 2000. 	<ul style="list-style-type: none"> ▪ The outlook for a resumption of solid growth in consumer software markets in 2003 is predicated upon a rebound in PC shipments. ▪ If business capital spending accelerates in 2003, enterprise software may begin its recovery, with storage and Internet security services leading all other applications. ▪ A return to 10% to 16% growth in the software market is expected beginning in 2004, up from the 5% to 7% pace in 2001 and 2002. ▪ IT consulting services and other types of consulting services have faced declining demand, as corporations pared spending in 2002.
Risk Factors		<ul style="list-style-type: none"> ▪ Stalling in economic growth, leading to further reductions in business capital spending. 	<ul style="list-style-type: none"> ▪ Stalling in economic growth, leading to continued controls on spending on software, computer services, and consulting services.
Other Comments	<ul style="list-style-type: none"> ▪ Companies will continue to focus on cleaning up balance sheets and improving cash flow in 2003. ▪ Low valuations present opportunity to purchase assets at low cost, so consolidation among industry participants is widely expected once the economy picks up. Midsize transactions or acquisitions of smaller players by national carriers are likely. ▪ Some wireless tower companies and smaller wireless carriers are vulnerable to default or failure. 	<ul style="list-style-type: none"> ▪ Commodity memory chips (DRAMs) face long-run overcapacity problem, according to S&P. 	

	Airlines & Aerospace	Industrial Metals – Steel and Aluminum
Outlook	<ul style="list-style-type: none"> ▪ In response to contraction in demand, particularly business demand, U.S. airlines cut domestic airline capacity, measured by number of available seat miles (ASM), by 7.3 percent in 2002 compared to 2000. Airfares excluding taxes declined 9.1 percent compared to 2001 and 16.8 percent compared to 2000. ▪ The airline industry lost \$6.0 billion in 2002, after losing \$9.0 billion in 2001, according to Air Transport World. ▪ The Air Transport Association expects a meagre increase in air traffic of one percent in 2003, compared to 2002. ▪ The Air Transport Association forecasts 3% decline in net profit margins in 2003, less than the steep declines in the last two years. ▪ Debt-to-total capital ratios for airlines have increased, as they took on new debt or used up credit lines, after the four-day shutdown in September 2001 and months of operating losses. ▪ Commercial aircraft orders are forecast to continue declining through 2004, as airlines (the main customers) continue to experience profit losses. ▪ Regional jet orders and corporate jet sales have softened as well in 2002. Falling orders is triggering price competition and lower profit margins. 	<ul style="list-style-type: none"> ▪ A continuation in 2003 of the nascent rebound in the steel market in 2002 is threatened by rising steel supply and a slowdown in demand from the auto market. ▪ Contributing to supply growth are three factors: (a) the re-opening of acquired bankrupt facilities at lower operating costs; (b) rising steel imports as tariffs are removed on more steel product categories; and (c) the elimination of legacy pension costs of bankrupt companies when the Pension Benefit Guarantee Corp. assumed the pension obligations, sustaining operations of companies that would otherwise have shut down. ▪ The outlook for demand/supply balance in the aluminum market is brighter due to greater price discipline imposed by consolidation, lower import levels, and rebound in global demand. ▪ For the next five years, three major factors will influence the performance of the U.S. industrial metals industry: new manufacturing technology, foreign competition, and materials substitution.
Risk Factors	<ul style="list-style-type: none"> ▪ A war with Iraq would lead to severe demand contraction, comparable to that experienced in 1991. 	<ul style="list-style-type: none"> ▪ A marked slowdown in auto manufacturing; automotive applications account for approximately 25% of demand for steel and 27% of aluminum shipments.
Other Comments	<ul style="list-style-type: none"> ▪ Discount airlines, such as the carriers Jet Blue and Southwest, have historically had lower cost structures than the major airlines and have remained profitable while inducing downward pressure on ticket prices, a boon to leisure travellers. ▪ Delta Airlines, in an apparent attempt to emulate the discount carriers, has announced plans to launch its own low-cost carrier, Song, and United Airlines included plans for a low-fare subsidiary in recent restructuring plans. 	<ul style="list-style-type: none"> ▪ Low-cost producers using new technology, employing non-union labor, and having leaner management structures will force radical changes in the steel industry. ▪ Integrated steel companies, most of which are operating under Chapter 11, continue to face prohibitive costs of discharging healthcare and retirement liabilities. ▪ Permanent reductions in the future capacity may result from shutdowns of bankrupt capacity or mergers with financially stronger companies.

Compiled by PricewaterhouseCoopers L.L.P. from Standard & Poor's *Industry Surveys* and other literature searches.

Summary

The actual number of public company filings for Chapter 11 protection was 189 in 2002, as correctly predicted by PricewaterhouseCoopers early last year. In its report, **The Phoenix Forecast: Bankruptcy and Restructuring 2002**, PricewaterhouseCoopers forecast that public company filings would decline from the record number in 2001 but could still approach 200 filings. PricewaterhouseCoopers also correctly forecast the industries that had some of the highest number of public company Chapter 11 filings in 2002: telecommunications, computer hardware, retail trade, chemicals, and metal industries.

Using an econometric model of aggregate bankruptcy filings, PricewaterhouseCoopers forecasts that public company Chapter 11 filings will remain at high levels -- approximately 180 filings -- in 2003. It forecasts that the total assets of public companies that will file for Chapter 11 protection in 2003 will decline significantly to approximately \$240 billion from the record \$382 billion in 2002.

The outlook for the slight improvement in the bankruptcy picture in 2003 is influenced by forecasts for acceleration in U.S. economic growth later rather than earlier in 2003 amid only gradual improvement in overall corporate credit quality.

PricewaterhouseCoopers' industry analyses revealed that public companies in distress are concentrated in the following industries that are likely to see high numbers of Chapter 11 filings in 2003: business services (computer software and information technology consulting services), electrical and electronic equipment (semiconductors and telecommunications equipment), electric and gas utilities, telecommunications, air transportation and aerospace, and primary metals.

* * *

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Appendix

PwC focused on the following five factors in developing its aggregate bankruptcy forecast model:

1. Degree of corporate leverage

Bankruptcies are more likely when companies are highly leveraged or have substantial amount of debt that requires interest payments. Signs that companies in the economy are exposed to debt-related risk include a high amount of debt relative to net worth, high levels of interest payments relative to available cash flows, and increasing default rates on corporate bonds. An increased prevalence of bond rating downgrades issued by rating agencies may also be a sign that companies are over-leveraged. Corporate profits are expected to have an inverse relationship, as increasing corporate profits decrease the likelihood of bankruptcy. Sample variables include:

- ratio of debt to corporate net worth;
- net interest payments relative to cash flow;
- corporate profits;
- bond default rates; and,
- bond rating downgrades.

2. Cost of borrowing

Market participants recognize the increased risk of corporate credit and demand higher returns, increasing the cost of borrowing. An increase in the cost of borrowing may reflect market expectations about the future business climate and may itself increase the likelihood of bankruptcy protection filing, as firms are unable to secure necessary capital at acceptable rates. Bankruptcy filings may be more frequent during such periods. Sample variables include:

- yield on corporate bonds; and,
- spread between yield on corporate bonds and government bonds.

3. Prevalence of excess production capacity and rising inventories

Reductions in the utilization of available manufacturing capacity may indicate that product orders are lower than expected, potentially resulting in financial stress among some companies. Meanwhile, when manufacturing firms or retailers hold excess inventories resulting from

decreased demand, pricing power may decline and the incidence of bankruptcy filings may increase. Sample variables include:

- nonfarm inventory levels; and,
- capacity utilization.

4. Corporate credit quality

When investors are cautious, only the highest quality deals find funding. When investor confidence and hence availability of capital are high, lower quality projects may become funded and weak businesses can persist longer than they would otherwise. The issuance of high-yield debt may have a lagged relationship with the number of bankruptcies of up to about three years, the period during which many defaults on speculative debt occur. Also, rising stock market valuations may permit companies the opportunity to increase leverage even at higher risk, potentially resulting in increased bankruptcy filings later. Sample variables include:

- volume of high-yield debt issued; and,
- equity wealth.

5. Aggregate economic activity

Periods of slow economic growth may cause bankruptcies among financially weak companies, so measures of aggregate economic activity were considered as explanatory variables in our model. Since contractions in individual sectors may contribute to situations of financial distress even as the overall economy expands, the number of sectors with declining employment was also considered. Finally, the yield curve, which is measured as the spread between the interest rates on the ten-year Treasury note and the three-month Treasury bill, was considered as an explanatory variable. The series was considered because an inverted yield curve (in which short-term rates exceed long-term rates) tends to indicate expectations of an economic recession, and may indicate increased likelihood of corporate bankruptcies. Sample variables include:

- gross domestic product;
- retail sales;
- index of number of industries with employment losses; and,
- yield curve.