



# Ryan ALM, inc.

## Asset/Liability Management

*The Solutions Company*



Ronald Ryan, CEO, CFA

## The Ryan Letter

July 2007

| Index                         | Returns<br>YTD 2007 | Estimated<br>Weights |
|-------------------------------|---------------------|----------------------|
| <b>Liabilities :</b>          |                     |                      |
| Market (Tsy STRIPS)           | 1.44 %              | 100 %                |
| IRS (Corporates)              | 2.85                |                      |
| ROA (8% constant rate)        | 4.67                |                      |
| <b>Assets :</b>               |                     |                      |
| Ryan Cash                     | 3.05 %              | 5 %                  |
| Lehman Aggregate              | 1.81                | 30                   |
| S&P 500                       | 3.64                | 60                   |
| MSCI EAFE Int'l               | 9.47                | 5                    |
| <b>Asset Allocation Model</b> | <b>3.42 %</b>       | <b>100 %</b>         |
| <b>Assets – Liabilities</b>   |                     |                      |
| Market                        | 1.98%               |                      |
| IRS                           | 0.57                |                      |
| ROA                           | -1.25               |                      |

Based on the Asset Allocation above, for the year 2007, pension assets outperformed liabilities by only **1.98%** using market valuations (i.e. STRIPS); **0.57%** under the IRS Contribution rules (PPA Corporate rates); and **-1.25%** using the ASOP 27 methodology of a constant ROA (i.e. 8.00%). Such valuations show the significant difference in not using proper market valuations. Most pension funds enjoyed a funded ratio surplus in 1999. However, this **funded ratio has been reduced by about -63% since 1999** (see Graphs and Index disclosures on pages 3 and 4).

| Total Returns          |        |        |        |         |        |        |        |        |
|------------------------|--------|--------|--------|---------|--------|--------|--------|--------|
|                        | 2000   | 2001   | 2002   | 2003    | 2004   | 2005   | 2006   | 2007   |
| Assets                 | - 2.50 | - 5.40 | -11.41 | 20.04   | 8.92   | 4.43   | 12.25  | 3.42   |
| Liabilities            | 25.96  | 3.08   | 19.47  | 1.96    | 9.35   | 8.87   | 0.81   | 1.44   |
| Difference :<br>Annual | -28.46 | - 8.48 | -30.89 | 18.08   | -0.43  | -4.44  | 11.44  | 1.98   |
| Cumulative             |        | -37.60 | -73.40 | - 60.08 | -66.13 | -76.75 | -64.60 | -63.05 |

**God Bless Pension America !**

### **Goodbye 3-year Treasury Auction**

The Treasury announced recently they will discontinue the 3-year note. There have been twenty 3-year auctions since November 4, 1997. There was a gap between May 15, 1998 and May 15, 2003 where there were no 3-year auctions. This announcement would affect short maturity bond indexes, mutual funds and ETFs especially those using a 1-3 year Treasury index benchmark. Such an index could have a dramatic % shift in average duration ... and yield if a normal positive sloping yield curve returns.

### **Public Pension and OPEB Watch**

There seems to be an avalanche of recent Public Pension announcements concerning the growth of pension + OPEB deficits and the mismanagement of such funds. As I have preached since 1991, the accounting rules governing Public Pension plans are the start of the pension crisis since they do not *mark to market* the liabilities. Instead, they value the liabilities at the ROA rate. Such a discount rate has undervalued public pension liabilities by 30 to 45% in the last 5 years. So reported funded ratios are not accurate and need to be reduced accordingly. As a result of these inappropriate rules has led to inappropriate ... benefit decisions, contribution decisions and asset allocation decisions. It all links! Here is an update on some municipalities:

**California** - Recent disclosures estimate OPEB unfunded liabilities at \$4.9 billion (San Francisco), \$3.2 billion (Los Angeles), \$1.38 billion (San Diego). On a per capita basis San Francisco OPEB liability is 14 times worse than San Diego.

**Hawaii** - Pension unfunded liability estimated at \$5.13 billion and OPEB estimated at \$11 billion.

**Illinois** - Governor Rod Blagojevich's strategy to lease the state lottery for \$10 billion to help fund the \$41 billion pension shortfall failed in the House by a lopsided vote.

**Massachusetts** - Legislators in both the House and Senate approved overwhelmingly of a Bill to allow the state to seize the assets of 19 underperforming local government pension funds. Under the pension bill, poorly performing local systems would be required to transfer funds into the state Pension Reserves Management Board.

**Mississippi** - The state reported a \$6 billion shortfall. According to the Wilshire survey their funded ratios stood at 72% with Louisiana (64%) and Kentucky (60%) the only two states reportedly in worst shape. According to the Wilshire study, Florida, Georgia and North Carolina are the only states with an overfunded situation.

**New Jersey** - According to a seven month study, the OPEB estimated liability is \$58 billion. There are no assets set aside for this liability. New pension contribution cost projections have tabbed \$1 billion in property taxes to help fund the state pension shortfall. This amount is 20 times larger than the contribution cost four years ago. Even at \$1 billion, pension contributions fall way short of the annual actuarial requirement (currently = \$2 billion). In just the last four years, the annual cost of making up for skipped pension contributions into the state's largest two pension funds rose from \$38 million to \$841 million. That figure is included in the \$2 billion annual contributions actuarially owed for this year. Even if the state makes the full actuarial contribution, this annual cost is expected to rise by at least 4% annually. Any

deficiency in making this payment and/or underperformance by pension assets will increase this annual payment requirement.

**San Diego** - The independent board that oversees San Diego County's \$8.5 billion pension fund decided to stay with the projected ROA of 8.25%. This rate is significant in that it determines the amount of contributions. This rate has been in place for several years. In other notable action, Judge Jeffrey Barton ruled on August 3 that the case filed by City Attorney Mike Aguirre was filed far too late to meet the one year statute of limitations. Aguirre sued to erase the benefits in July 2005, long after November 2002, when a worried pension board member approached the City Council to warn that a deal the board agreed to could bankrupt the city.

**West Virginia** - The West Virginia Public Employees Insurance Agency (PEIA) uncovered nearly \$8 billion in healthcare liability based upon the new GASB 45 standards.

**Wilshire Study** - Average Funded Ratio reported by all 125 state pension plans was 88% in 2006 and 87% in 2005 (note: true economic ratio is about 30% lower due to using the ROA as the liability discount rate).

#### **Ameristock / Ryan Launch Five (5) New Bond ETFs**

On Monday, July 2<sup>nd</sup> Ameristock and Ryan ALM launched five new bond ETFs based upon the Ryan Indexes. Here is the list of these innovative ETFs and ticker names:

**Ameristock / Ryan 1 year Treasury (GKA)**  
**Ameristock / Ryan 2 year Treasury (GKB)**  
**Ameristock / Ryan 5 year Treasury (GKC)**  
**Ameristock / Ryan 10 year Treasury (GKD)**  
**Ameristock / Ryan 20 year Treasury (GKE)**

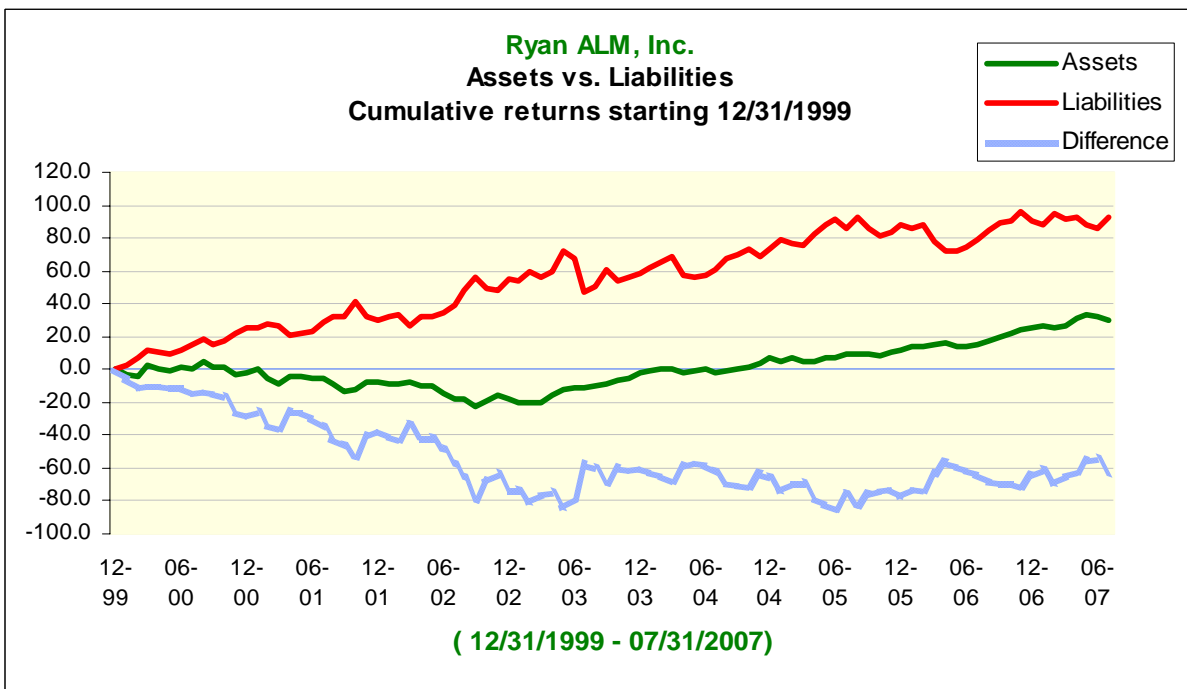
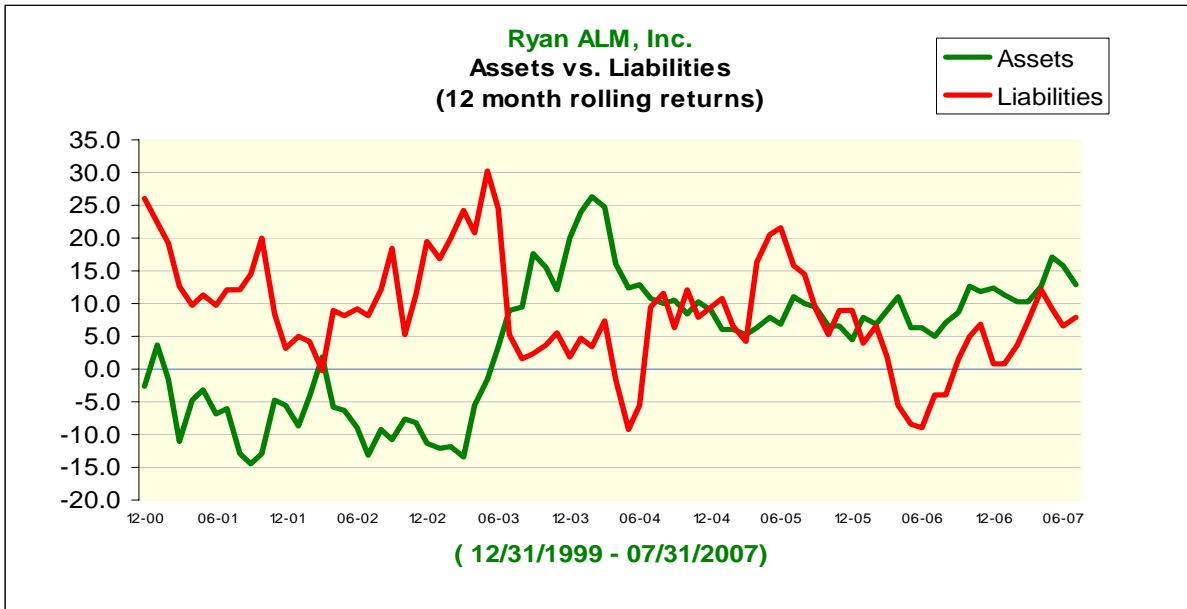
These new ETFs are **constant maturity** index funds. They are the first such bond funds in the ETF market place today. The other bond ETFs are a maturity range (i.e. 7-10 years) rather than a precise spot on the Treasury yield curve. These maturity band indexes tend to have significant drifts in average coupon and duration as old issues pass thru this index composition. Such drifts can distort the implied or expected risk/reward behavior. Moreover, these indexes allow for callable bonds which trade to a call date and not a maturity date which create more skewness. Such drifts and skewness are corrected with a constant maturity index methodology. For more info on these ETFs and the Ryan Indexes, please go to :

**Ryan Indexes = [www.RyanIndex.com](http://www.RyanIndex.com)**  
**and**  
**[www.RyanALM.com](http://www.RyanALM.com)**  
**Ameristock / Ryan ETFs = [www.Ameristock.com](http://www.Ameristock.com)**

## Pension Scoreboard

Based on the Ryan generic Liability Index and a static Asset Allocation, as shown on page 1, the following graphs show asset growth versus liability growth for rolling 12 month periods and cumulative growth since 1999. The cumulative growth difference is **-63.05%** suggesting any plan with a Funding Ratio below 154.37% at the end of 1999 is in a deficit position today.

In order to closely watch the Pension Crisis, we have designed the **Pension Monitor**. We believe that this is the most comprehensive site for pension articles in the world today. To view, please click on : <http://www.pensionmonitor.com/>



### Custom Liability Indexes

In 1991, my current product development team and I designed the first Liability Index using the Ryan STRIPS Indexes. Since then we have developed hundreds of Custom Liability Indexes (CLI). Similar to snowflakes, no two pension funds are alike in that they have unique benefit payment schedules due to different labor forces, different mortality, different plan amendments. **The true objective of a pension is to fund liabilities at the lowest cost to the plan with prudent risk.** Without a Custom Liability Index it would be difficult, if not impossible, for assets to be managed vs. this liability objective. Until a CLI is installed as a set of economic books, the asset side is in jeopardy of managing vs. the wrong objective (i.e. generic market indexes) **If you outperform generic market indexes, but lose to the CLI ... the plan loses !**

### Ryan Indexes ...Enhanced !

In March 1983, my index team and I at the Ryan Financial Strategy Group (RFSG) created the **1<sup>st</sup> Daily bond Index ... the Ryan Index** as a *Treasury Yield Curve* index series for each auction maturity series (from Bills to Bonds). The best way to understand the interest rate behavior of bonds is to use the Ryan Treasury constant maturity series for each Treasury *auction* series with two composite indexes ... **Ryan Cash and Ryan Index.**

**The daily reports on these indices have been greatly expanded and enhanced to over 100 daily pages + 10 pages of research and methodology including :**

**Returns**  
**Yield History**  
**Yield Spreads**  
**Percentage Spreads**

The best way to price (discount rate) and understand the interest rate sensitivity of **liabilities** is ... the **Ryan Treasury STRIPS yield curve** known as the **LIABILITY BENCHMARK or LIABILITY INDEX**. In March 1985, when STRIPS were born, my team and I at the Ryan Financial Strategy Group (RFSG) created the **1st STRIPS Index**. Based upon these Ryan STRIPS indexes we created the **1<sup>st</sup> Liability Index in 1991** as the proper liability Benchmark for liability driven objectives (Pensions, Lotteries, NDT, Insurance Cos., etc.).

To view all Ryan Indexes data go to : [www.RyanIndex.com](http://www.RyanIndex.com)

*Note: In October 2005, Ron Ryan terminated his license agreement with Ryan Labs to distribute and calculate the Ryan Indexes and Ryan STRIPS Indexes. Ron Ryan and Ryan ALM have no affiliation with Ryan Labs. Any use of the formulas, methodologies and data of any of the Ryan Indexes without Ron Ryan's written permission is prohibited*

*Given the Wrong Index ... you will get the Wrong Risk/Reward*  
**Confucius**

## Ryan Indexes (07/31/07) Daily Reports

| Index                | Index     |       |        | Total Returns |        |       |         |       |       |       | Yield Change (bp) |        |       |         |      |       |      |
|----------------------|-----------|-------|--------|---------------|--------|-------|---------|-------|-------|-------|-------------------|--------|-------|---------|------|-------|------|
|                      | Level     | Yield | MDur   | Last          |        |       |         | Last  |       |       | Last              |        |       |         | Last |       |      |
|                      |           |       |        | Day           | 7 Days | Month | Quarter | Year  | 12 MO | 3 YR  | Day               | 7 Days | Month | Quarter | Year | 12 MO | 3 YR |
| Ryan 1 Month Index   | 116.977   | 5.119 | 0.075  | 0.009         | 0.097  | 0.375 | 0.375   | 2.932 | 5.128 | 3.837 | 18                | 8      | 86    | 86      | 39   | 11    | 387  |
| Ryan 3 Month Index   | 236.275   | 4.956 | 0.243  | 0.012         | 0.131  | 0.435 | 0.435   | 3.060 | 5.274 | 3.916 | 1                 | -7     | 14    | 14      | -6   | -14   | 351  |
| Ryan 6 Month Index   | 241.196   | 4.985 | 0.485  | 0.012         | 0.146  | 0.457 | 0.457   | 3.153 | 5.379 | 3.964 | 0                 | -9     | 4     | 4       | -11  | -18   | 323  |
| Ryan Cash Index      | 243.388   | 5.020 | 0.267  | 0.011         | 0.125  | 0.422 | 0.422   | 3.048 | 5.260 | 3.905 | 6                 | -2     | 35    | 35      | 7    | -7    | 354  |
| Ryan 1 Year Index *  | 259.931   | 4.844 | 0.953  | 0.019         | 0.253  | 0.635 | 0.635   | 3.115 | 5.321 | 3.614 | -0                | -13    | -8    | -8      | -16  | -26   | 278  |
| Ryan 2 Year Index    | 1,194.525 | 4.561 | 1.890  | 0.033         | 0.467  | 0.991 | 0.991   | 3.036 | 5.202 | 2.914 | -1                | -21    | -32   | -32     | -25  | -41   | 188  |
| Ryan 3 Year Index    | 110.802   | 4.543 | 2.572  | 0.039         | 0.671  | 1.331 | 1.331   | 3.115 | 5.583 | 2.985 | -1                | -23    | -36   | -36     | -20  | -38   | 153  |
| Ryan 5 Year Index    | 875.358   | 4.604 | 4.419  | 0.115         | 1.021  | 1.825 | 1.825   | 2.952 | 5.682 | 2.583 | -2                | -22    | -33   | -33     | -10  | -30   | 91   |
| Ryan 10 Year Index   | 1,023.134 | 4.771 | 7.744  | 0.266         | 1.435  | 2.483 | 2.483   | 2.034 | 6.038 | 3.320 | -3                | -17    | -26   | -26     | 6    | -22   | 29   |
| Ryan 20 Year Index * | 1,116.650 | 4.847 | 11.501 | 0.420         | 1.840  | 3.041 | 3.041   | 1.359 | 6.496 | 4.246 | -3                | -16    | -23   | -23     | 9    | -18   | 0    |
| Ryan 30 Year Index   | 1,602.078 | 4.922 | 15.259 | 0.574         | 2.246  | 3.596 | 3.596   | 0.656 | 6.906 | 5.127 | -4                | -14    | -20   | -20     | 11   | -15   | -28  |
| Ryan Index           | 913.217   | 4.680 | 6.377  | 0.205         | 1.167  | 2.047 | 2.047   | 2.382 | 5.924 | 2.575 | -2                | -19    | -30   | -30     | -8   | -29   | 121  |

| Period   | Since Date | Yield |       | Yield Spread |          | % Spread Volatility |          |         | Yield Spread % |               |         |          |        |  |
|----------|------------|-------|-------|--------------|----------|---------------------|----------|---------|----------------|---------------|---------|----------|--------|--|
|          |            | TSY30 | TSY02 | % Spread     | Change   | Mean Abs Dev        | Variance | Std Dev | Low % Spread   | High % Spread | Avg     |          |        |  |
|          |            | Date  | Date  | Date         | Date     | Date                | Date     | Date    | Date           | Date          | Date    |          |        |  |
| Today    | 07/31/07   | 4.922 | 4.561 | 7.915        |          |                     |          |         |                |               |         |          |        |  |
| Month    | 06/29/07   | 5.127 | 4.883 | 4.997        | 2.918    | 0.9                 | 1.5      | 19.1    | 5.002          | 07/02/07      | 8.775   | 07/26/07 | 6.115  |  |
| Quarter  | 06/29/07   | 5.127 | 4.883 | 4.997        | 2.918    | 0.9                 | 1.5      | 19.1    | 5.002          | 07/02/07      | 8.775   | 07/26/07 | 6.115  |  |
| Year     | 12/29/06   | 4.815 | 4.813 | 0.042        | 7.873    | 2.1                 | 6.5      | 40.1    | -1.283         | 01/22/07      | 8.775   | 07/26/07 | 2.929  |  |
| 7 Days   | 07/24/07   | 5.062 | 4.771 | 6.099        | 1.816    | 0.7                 | 0.8      | 14.4    | 6.348          | 07/25/07      | 8.775   | 07/26/07 | 8.059  |  |
| 14 Days  | 07/17/07   | 5.161 | 4.908 | 5.155        | 2.760    | 1.3                 | 1.9      | 21.7    | 5.374          | 07/19/07      | 8.775   | 07/26/07 | 6.865  |  |
| 30 Days  | 06/29/07   | 5.127 | 4.883 | 4.997        | 2.918    | 0.9                 | 1.5      | 19.1    | 5.002          | 07/02/07      | 8.775   | 07/26/07 | 6.115  |  |
| 60 Days  | 06/01/07   | 5.062 | 4.971 | 1.831        | 6.084    | 1.0                 | 2.4      | 24.5    | 1.189          | 06/04/07      | 8.775   | 07/26/07 | 5.461  |  |
| 90 Days  | 05/02/07   | 4.819 | 4.645 | 3.746        | 4.169    | 1.5                 | 3.2      | 28.4    | 1.189          | 06/04/07      | 8.775   | 07/26/07 | 4.554  |  |
| 180 Days | 02/01/07   | 4.934 | 4.958 | -0.484       | 8.399    | 1.8                 | 5.2      | 36.0    | -1.273         | 02/08/07      | 8.775   | 07/26/07 | 3.525  |  |
| 365 Days | 07/31/06   | 5.071 | 4.967 | 2.094        | 5.821    | 1.9                 | 5.7      | 37.5    | -2.452         | 11/15/06      | 8.775   | 07/26/07 | 2.027  |  |
| 2 Years  | 07/29/05   | 4.474 | 4.015 | 11.432       | -3.517   | 3.2                 | 15.8     | 62.8    | -4.648         | 02/23/06      | 15.855  | 09/19/05 | 3.483  |  |
| 3 Years  | 07/30/04   | 5.207 | 2.685 | 93.929       | -86.014  | 21.7                | 841.1    | 457.6   | -4.648         | 02/23/06      | 111.864 | 08/06/04 | 19.483 |  |
| 4 Years  | 08/01/03   | 5.327 | 1.844 | 188.883      | -180.968 | 60.4                | 4,988.9  | 1,114.6 | -4.648         | 02/23/06      | 237.172 | 10/01/03 | 55.697 |  |
| 5 Years  | 08/01/02   | 5.298 | 2.154 | 145.961      | -138.046 | 77.5                | 7,278.8  | 1,346.3 | -4.648         | 02/23/06      | 291.089 | 06/24/03 | 82.923 |  |
| 7 Years  | 08/01/00   | 5.745 | 6.267 | -8.329       | 16.244   | 65.0                | 5,838.7  | 1,205.8 | -9.344         | 08/18/00      | 291.089 | 06/24/03 | 72.850 |  |
| 10 Years | 08/01/97   | 6.465 | 5.892 | 9.725        | -1.810   | 58.3                | 5,046.3  | 1,121.0 | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 52.760 |  |
| 15 Years | 08/03/92   | 7.461 | 4.404 | 69.414       | -61.499  | 46.2                | 3,673.5  | 956.4   | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 45.498 |  |
|          | 12/30/05   | 4.547 | 4.408 | 3.153        | 4.762    | 2.1                 | 6.2      | 39.2    | -4.648         | 02/23/06      | 8.775   | 07/26/07 | 1.921  |  |
|          | 12/31/04   | 4.827 | 3.073 | 57.078       | -49.163  | 8.8                 | 136.9    | 184.6   | -4.648         | 02/23/06      | 55.455  | 01/03/05 | 8.875  |  |
|          | 12/31/03   | 5.080 | 1.843 | 175.638      | -167.723 | 45.9                | 3,298.8  | 906.3   | -4.648         | 02/23/06      | 214.276 | 03/23/04 | 40.621 |  |
|          | 12/31/02   | 4.785 | 1.599 | 199.250      | -191.335 | 76.8                | 7,395.2  | 1,357.0 | -4.648         | 02/23/06      | 291.089 | 06/24/03 | 76.493 |  |
|          | 12/31/01   | 5.467 | 3.055 | 78.953       | -71.038  | 70.8                | 6,548.2  | 1,276.9 | -4.648         | 02/23/06      | 291.089 | 06/24/03 | 82.735 |  |
|          | 12/29/00   | 5.465 | 5.108 | 6.989        | 0.926    | 65.0                | 5,823.5  | 1,204.2 | -4.648         | 02/23/06      | 291.089 | 06/24/03 | 77.619 |  |
|          | 12/31/99   | 6.487 | 6.243 | 3.908        | 4.007    | 64.9                | 5,836.8  | 1,205.6 | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 66.710 |  |
|          | 12/31/98   | 5.100 | 4.542 | 12.285       | -4.370   | 62.4                | 5,507.9  | 1,171.1 | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 59.924 |  |
|          | 12/31/97   | 5.931 | 5.658 | 4.825        | 3.090    | 59.5                | 5,176.0  | 1,135.3 | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 54.651 |  |
|          | 12/31/96   | 6.643 | 5.876 | 13.053       | -5.138   | 56.5                | 4,854.8  | 1,099.5 | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 50.480 |  |
|          | 12/29/95   | 5.957 | 5.183 | 14.933       | -7.018   | 53.3                | 4,533.2  | 1,062.4 | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 47.406 |  |
|          | 12/30/94   | 7.885 | 7.690 | 2.536        | 5.379    | 50.6                | 4,264.8  | 1,030.5 | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 44.614 |  |
|          | 12/31/93   | 6.351 | 4.250 | 49.435       | -41.520  | 47.7                | 3,987.3  | 996.4   | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 43.279 |  |
|          | 12/31/92   | 7.398 | 4.582 | 61.458       | -53.543  | 46.3                | 3,747.2  | 965.9   | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 44.657 |  |
|          | 12/31/91   | 7.410 | 4.756 | 55.803       | -47.888  | 44.9                | 3,541.0  | 939.0   | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 45.828 |  |
|          | 12/31/90   | 8.255 | 7.157 | 15.342       | -7.427   | 43.1                | 3,356.1  | 914.2   | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 44.664 |  |
|          | 12/29/89   | 7.954 | 7.806 | 1.896        | 6.019    | 42.0                | 3,248.0  | 899.3   | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 42.456 |  |
|          | 12/30/88   | 9.020 | 9.143 | -1.345       | 9.260    | 41.3                | 3,171.6  | 888.7   | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 40.111 |  |
|          | 12/31/87   | 8.961 | 7.772 | 15.299       | -7.384   | 40.1                | 3,053.2  | 871.9   | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 38.616 |  |
|          | 12/31/86   | 7.487 | 6.350 | 17.906       | -9.991   | 38.7                | 2,927.9  | 853.8   | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 37.522 |  |
|          | 12/31/85   | 9.265 | 7.978 | 16.132       | -8.217   | 37.6                | 2,818.3  | 837.7   | -10.995        | 05/16/00      | 291.089 | 06/24/03 | 36.419 |  |

