

Hogs: Let's Make Some Money!

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Pork producers can look forward to the next 18 months with some optimism as costs are expected to drop, and hog prices remain at least high enough to cover all expenses. This is great news for many producers needing to improve their relationship with their lenders after about 14 months of operating losses.

Leading the improvement will be both lower feed costs and higher hog prices from declining pork production as a result of reductions of the breeding herd. Costs are expected to drop about \$2 per live hundredweight by this fall with lower corn and soybean meal prices, and pork supplies will be down an estimated two to three percent for the remainder of this year.

In addition to reductions in pork supplies, hog prices will be supported by a recovering general economy, and by weakness of the U.S. dollar in relationship to the Canadian dollar.

Hog prices for 51% to 52% lean animals on a live weight basis are expected to average near \$41 over the next 12 months with the better prices this summer and again next spring and summer. Historical hog cycle patterns would suggest that the breeding herd could continue to decline throughout 2003, and that prices and profits in 2004 may be more favorable than is now indicated.

The Numbers

The breeding herd continues to decline as producers responded to discouraging prices and lack of profits over the past 14 months. The breeding herd on June 1 was estimated by USDA to be down to 5.9 million animals, a reduction of over four percent from the same period last year. This is the fourth quarterly report indicating that the breeding herd is declining. Further declines are expected though all of 2003 and thus pork supplies will continue to decline through much of 2004.

Most Midwestern states have reduced their breeding herds. The decline was led by Missouri with 11 percent fewer animals in the breeding herd, but closely followed by Iowa and Ohio with an eight percent reduction. Illinois' herd was down seven percent, Indiana down six percent, and Nebraska was down five percent. These six states accounted for a reduction of 225,000 animals in the breeding herd, with the national total down 269,000.

Increases to the breeding herd were noted in Oklahoma which was up nine percent, Texas was up five percent, South Dakota was up four percent, and Minnesota added two percent more sows.

Colorado provides an interesting study of the boom/bust cycles created during the structural revolution of the past 15 years, and of failed opportunities and massive loss of capital as environmental restrictions made the state less desirable for hog production. In the past year an additional 20 percent or 30,000 animals have been eliminated from their breeding herd. Traditionally, the state was a minor producer of hogs. In 1984 as an example, there were only 20,000 animals in the state's breeding herd. As hog corporations began to look to the western U.S. for sites, a revolution was set in place over the next 15 years. The number of sows doubled to 40,000 by 1990, doubled again to 80,000 in just three more years (1993). Numbers doubled again in another four years (160,000 by 1997), and reached a 210,000 peak in December of 1999. Today, the breeding herd stands at only 120,000 head, a dramatic drop of 43 percent decline in the past 3.5 years.

If one assumes that \$2,000 per sow was invested in facilities in Colorado, the decline of 90,000 sows represents about \$180,000,000 of capital investment someone has walked away from. Boom/bust cycles are always costly in a market economy, and the Colorado hog industry is a clear example.

Supplies of hogs this summer should be down about two to three percent and three percent lower in the fall according to the number of animals in various weight categories.

There is an indication that producers will not cut back on farrowings as much as they had said in March. Producers say they will reduce their summer farrowings by only two percent after indicating a three percent reduction back in the March survey. For fall 2003 farrowings, they have indicated only a one percent reduction. If producers follow through on these intentions, pork supplies next winter and in the spring of 2004 would be moderately lower than in 2003.

Small Drop in Supply: Big Price Increase

Pork supplies should continue to moderate throughout 2003 and into 2004. Summer pork production is expected to be down two percent and fall production down by near three percent (Table 4). Weights are expected to be up by nearly one percent over the coming 12 month period.

For the year of 2003, slaughter is expected to be down by nearly two percent to 98.4 million head. Weights are expected to be .8 percent higher with total pork production down about one percent to 19.4 billion pounds.

As has been discussed at length in past issues of this report, hog prices have become super-responsive to modest changes in supplies and 2003 is no exception. With just a 1.3 percent reduction in pork production, I am anticipating a 15 percent higher price for this year compared to 2002. Last year, 51% to 52% lean hogs on a live weight basis averaged \$34.29. This year's estimate is for hogs to average \$40.31.

Summer prices are expected to average in the low to mid-\$40s, before dropping to the higher \$30s for a fall quarter average. Prices are anticipated to average near \$40 for the winter and back into the low-to-mid \$40s for the spring of 2004 (Table 5).

How Many Canadian Hogs?

The number of young pigs born in Canada but moved to the U.S. for finishing has continued to expand. In the first four months of the year for which data is currently available, the number of young pigs imported from Canada stood at 1.5 million head, a surge of 22 percent more than the same period last year. There is some corresponding offset in the slaughter ready animals being imported, but total imports from Canada were still up five percent so far this year. Canadian hogs have represented 6.2 percent of the hogs slaughtered in the U.S. this year.

In the past three years as an example, the growth of the Canadian hog imports has muted the price impact of smaller production in the U.S. In 2000, total slaughter was 97.9 million head with 94.0 million produced in the U.S. and 3.9 million from Canada with prices averaging \$44.70. In 2003, the U.S. has reduced production to 92.3 million head but the number of Canadian hogs this year is expected to rise to 6.1 million such that the total number of hogs will be near 98.4 million. While this number is close to the number slaughtered in 2000, prices will be close to \$40 rather than near \$45.

One of the driving economic forces has been the strong U.S. dollar giving Canadian producers further incentives to sell hogs in the U.S. for U.S. dollars and convert back to Canadian dollars. However, since late in 2002, the U.S. dollar has dropped by 15 percent in relation to the Canadian dollar. Today, the Canadian dollar is at about the same exchange rate relative to the U.S. dollar as in 1996. This will reduce the incentive to move pigs and hogs to the U.S., but there will be a delay in seeing the impact as most of the young pigs coming from Canada to the United States are on coordinated contracts.

Mad cow disease in Canada has likely provided some support for hog prices in the U.S. The restriction of live cattle and beef imports from Canada to the United States has increased U.S. beef prices. As beef prices rose, there would be some substitution effect as some consumers would have shifted from higher priced beef over to more moderate priced pork. These cross effects however are thought to be small.

Positive Returns to Continue

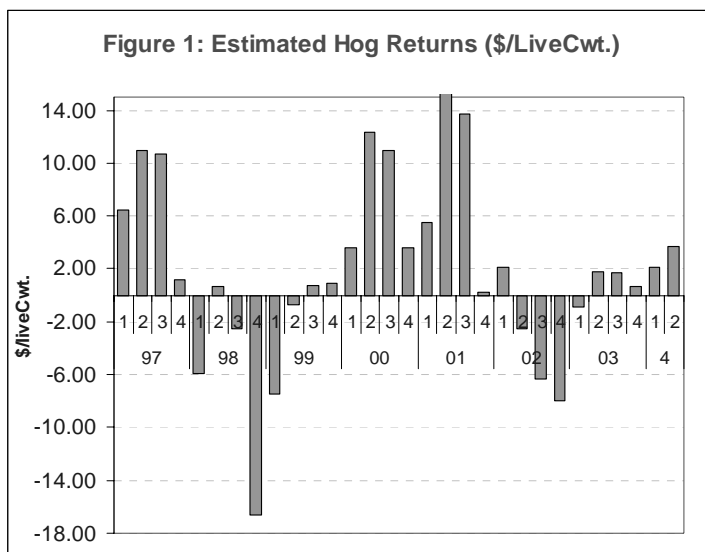
Costs of production are expected to moderate in the coming 12 month period as interest rates continue to be very low and feed prices fall. Costs for farrow to finish operations was estimated to have reached about \$40.50 per live hundredweight in the second quarter of 2003 just completed. Moderating corn and soybean meal prices are expected to drop production costs down to about \$38 for the final quarter of the year based upon a reduction of 35 cents per bushel in corn prices from the second quarter of 2003 and \$20 per ton lower soybean meal prices.

Estimated costs for the next 12 months is about \$38.70 with expected revenues about \$2.00 higher providing a slim margin above total costs on average across the period. The best periods of profits are expected to be this summer and the late-spring and summer of 2004, with winter prices near breakeven, **Figure 1**.

These returns will give producers the opportunity to begin to improve their financial position after about 14 months of losses experienced from March of 2002 through April of 2003.

Implications for the Industry

Prospects for positive cash flows mean that progress can be made on weakened financial positions. While a period of large profits cannot be forecast from the current level of herd liquidation, observations on past hog cycles suggests that the ultimate reduction in the herd may be larger than is being suggested now and that prices and profits will be greater than is now in view. For example, from the calendar quarter of the largest losses on the cycle it is generally about 6 to 8 quarters until the highest profit period occurs. In the



cycles observed back to 1980, profits reached at least \$10 per live hundredweight in the most profitable quarters. The largest losses on the current cycle were during the 4th quarter of 2002. Adding 6 to 8 quarters to this provides a “best estimate” with the highest returns coming around the spring of 2004 through the fall of 2004. This period is of course centered on the spring and summer of 2004 for the highest hog prices and best profit period.

To achieve \$10 or greater per live hundredweight margins would require hog prices in the higher \$40s and above. Currently, futures for June 04 are reflecting live prices several dollars lower than this. This would seem to leave room for futures prices to improve at least for that time period. Again, there is the chance that 2004 could be a very good hog year, and therefore one should be a bit slow to hedge hog prices this far ahead. However, many hog producers need to keep their price risk reduced and will find profitable hedging opportunities as far out as 18 months.

Another factor that will likely improve the outlook for hog prices in the coming year is an improving U.S. and world economy. In the Survey of Professional Forecasters conducted by the Federal Reserve Bank of Philadelphia, economists are now suggesting that the economy will begin to grow at a rate of 3.4 to 4.0 percent over the next 12 months. They

estimate that unemployment will finally begin to drop late this year and continue to decline through 2004.

Also, world economic growth is expected to expand by three percent in 2004 compared to only two percent this year. Further, our four largest pork purchasing countries (Japan, Mexico, Canada, and South Korea) are all expected to have sizable improvements in their economic growth rates which should help spur exports. Finally the decline of the U.S. dollar relative to the Canadian dollar will have positive impacts on hog prices in 2004. On the other hand, the dollar has stayed relatively stable in relationship to the Yen, South Korean Won, and Mexican Peso.

Those farrow to finish operations considering exit from the industry should focus on ending farrowings in the summer of 2004 and selling market hogs by the end of 2004.

Table 1. Hogs and Pigs in the United States, June 1, 2003

| | 2001 | 2002 | 2002 as % of 2001 |
|-------------------------------|---------------|--------|----------------------|
| | thousand head | | percent |
| Inventory | | | |
| All hogs and pigs | 60,288 | 58,736 | 97.4 |
| Kept for breeding | 6,209 | 5,940 | 95.7 |
| Kept for market | 54,078 | 52,796 | 97.6 |
| Market hogs by weight | | | |
| Under 60 pounds | 20,186 | 19,617 | 97.2 |
| 60-119 | 13,588 | 13,113 | 96.5 |
| 120-179 | 10,884 | 10,697 | 98.3 |
| 180 and over | 9,420 | 9,369 | 99.5 |
| Sows farrowing | | | |
| Dec 02 - Feb 03 | 2,836 | 2,767 | 97.6 |
| Mar 03 - May 03 | 2,943 | 2,821 | 95.9 |
| June 03 - Aug 03 ¹ | 2,887 | 2,827 | 97.9 |
| Sept 03 - Nov 03 ¹ | 2,817 | 2,794 | 99.2 |
| Pigs saved per litter | | | |
| Dec 02 - Feb 03 | 8.74 | 8.81 | 100.8 |
| Mar 03 - May 03 | 8.82 | 8.88 | 100.7 |
| Pig crop | | | |
| Dec 02 - Feb 03 | 24,794 | 24,374 | 98.3 |
| Mar 03 - May 03 | 25,959 | 25,053 | 96.5 |

¹ Intentions

Table 2. U.S. Market Hogs Weighing 60 to 179 Pounds on June 1, and Commercial Slaughter in Calendar Quarter from July through Sept

| | thousand head | | percent |
|------|---------------|--------|--------------------|
| 1990 | 20,253 | 20,346 | 100.5 |
| 1991 | 21,201 | 21,376 | 100.8 |
| 1992 | 22,613 | 23,746 | 105.0 |
| 1993 | 22,455 | 22,777 | 101.4 |
| 1994 | 22,970 | 23,673 | 103.1 |
| 1995 | 23,200 | 23,264 | 100.3 |
| 1996 | 22,500 | 22,711 | 100.9 |
| 1997 | 22,576 | 22,666 | 100.4 |
| 1998 | 24,795 | 25,038 | 101.0 |
| 1999 | 24,577 | 24,960 | 101.6 |
| 2000 | 23,957 | 24,097 | 100.6 |
| 2001 | 23,528 | 23,631 | 100.4 |
| 2002 | 24,472 | 25,117 | 102.6 |
| 2003 | 23,810 | 24,100 | 101.2 ^b |

^a Projected

^b Mean of previous three years

Table 3. U.S. Sow Farrowings and Pig Crop Compared to U.S. Commercial Slaughter (1,000 head), with 7-month Lag 1991 to 2004

| Year | Sows Farrow | Pig Crop | Ratio | Commercial | | |
|---------------------------|-------------|----------|-------|-------------------------|-----------|--------------------|
| | | | | Year | Slaughter | Ratio |
| <u>December-February</u> | | | | <u>July-September</u> | | |
| 91/92 | 2,892 | 23,258 | 8.04 | 1992 | 23,746 | 102.1 |
| 92/93 | 2,808 | 22,871 | 8.15 | 1993 | 22,777 | 99.6 |
| 93/94 | 2,885 | 23,368 | 8.10 | 1994 | 23,673 | 101.3 |
| 94/95 | 2,886 | 23,851 | 8.27 | 1995 | 23,264 | 97.5 |
| 95/96 | 2,735 | 23,054 | 8.43 | 1996 | 22,711 | 98.5 |
| 96/97 | 2,684 | 23,164 | 8.63 | 1997 | 22,679 | 97.9 |
| 97/98 | 2,929 | 25,480 | 8.70 | 1998 | 25,038 | 98.3 |
| 98/99 | 2,891 | 25,247 | 8.73 | 1999 | 24,960 | 98.9 |
| 99/00 | 2,798 | 24,522 | 8.76 | 2000 | 24,097 | 98.3 |
| 00/01 | 2,748 | 23,963 | 8.72 | 2001 | 23,631 | 98.6 |
| 01/02 | 2,836 | 24,794 | 8.74 | 2002 | 25,117 | 101.3 |
| 02/03 ^a | 2,767 | 24,374 | 8.81 | 2003 | 24,226 | 99.4 ^b |
| <u>March-May</u> | | | | <u>October-December</u> | | |
| 1991 | 3,287 | 26,158 | 7.96 | 1991 | 24,367 | 93.2 |
| 1992 | 3,368 | 27,208 | 8.08 | 1992 | 25,138 | 92.4 |
| 1993 | 3,220 | 26,135 | 8.12 | 1993 | 24,574 | 94.0 |
| 1994 | 3,390 | 27,984 | 8.26 | 1994 | 26,322 | 94.1 |
| 1995 | 3,170 | 26,373 | 8.32 | 1995 | 25,198 | 95.5 |
| 1996 | 2,930 | 24,833 | 8.48 | 1996 | 23,833 | 96.0 |
| 1997 | 2,911 | 25,229 | 8.67 | 1997 | 25,152 | 99.7 |
| 1998 | 3,086 | 26,989 | 8.75 | 1998 | 27,584 | 102.2 |
| 1999 | 2,986 | 26,272 | 8.80 | 1999 | 26,732 | 101.8 |
| 2000 | 2,885 | 25,565 | 8.86 | 2000 | 25,714 | 100.6 |
| 2001 | 2,870 | 25,509 | 8.89 | 2001 | 26,465 | 103.7 |
| 2002 | 2,943 | 25,959 | 8.82 | 2002 | 26,714 | 102.9 |
| 2003 ^a | 2,821 | 25,053 | 8.88 | 2003 | 25,658 | 102.4 ^b |
| <u>June-August</u> | | | | <u>January-March</u> | | |
| 1991 | 3,105 | 24,499 | 7.89 | 1992 | 23,802 | 97.4 |
| 1992 | 3,020 | 24,590 | 8.14 | 1993 | 23,057 | 93.8 |
| 1993 | 2,972 | 24,041 | 8.09 | 1994 | 22,746 | 94.6 |
| 1994 | 3,107 | 25,547 | 8.22 | 1995 | 24,229 | 94.8 |
| 1995 | 2,976 | 24,813 | 8.34 | 1996 | 23,650 | 95.3 |
| 1996 | 2,718 | 23,244 | 8.55 | 1997 | 22,342 | 96.1 |
| 1997 | 2,946 | 25,696 | 8.72 | 1998 | 24,776 | 96.4 |
| 1998 | 3,054 | 26,634 | 8.72 | 1999 | 25,571 | 96.0 |
| 1999 | 2,920 | 25,862 | 8.86 | 2000 | 25,019 | 96.7 |
| 2000 | 2,889 | 25,548 | 8.84 | 2001 | 24,574 | 96.2 |
| 2001 | 2,878 | 25,539 | 8.87 | 2002 | 24,139 | 94.5 |
| 2002 | 2,887 | 25,700 | 8.90 | 2003 | 24,620 | 95.8 |
| 2003 ^a | 2,827 | 25,217 | 8.92 | 2004 | 24,082 | 95.5 ^b |
| <u>September-November</u> | | | | <u>April-June</u> | | |
| 1991 | 2,969 | 23,427 | 7.89 | 1992 | 22,202 | 94.8 |
| 1992 | 2,992 | 24,086 | 8.05 | 1993 | 22,661 | 94.1 |
| 1993 | 2,982 | 24,003 | 8.05 | 1994 | 22,965 | 95.7 |
| 1994 | 2,997 | 24,517 | 8.18 | 1995 | 23,646 | 96.5 |
| 1995 | 2,815 | 23,479 | 8.34 | 1996 | 22,201 | 94.6 |
| 1996 | 2,731 | 23,327 | 8.54 | 1997 | 21,834 | 93.6 |
| 1997 | 2,939 | 25,494 | 8.67 | 1998 | 23,631 | 92.7 |
| 1998 | 2,993 | 25,902 | 8.66 | 1999 | 24,292 | 93.8 |
| 1999 | 2,844 | 24,973 | 8.78 | 2000 | 23,107 | 92.5 |
| 2000 | 2,838 | 25,112 | 8.85 | 2001 | 23,273 | 92.7 |
| 2001 | 2,889 | 25,492 | 8.82 | 2002 | 24,290 | 95.3 |
| 2002 | 2,817 | 24,892 | 8.83 | 2003 | 23,868 | 95.9 |
| 2003 ^a | 2,794 | 24,727 | 8.85 | 2004 | 23,396 | 94.6 ^b |

a Estimates

b Mean of previous three years

Table 4. U.S. Commercial Slaughter, Carcass Weights, and Quarterly Pork Production 1990-2003

| Year | Quarter | Commercial Slaughter (1,000 head) | Carcass Weight Per Hog | Pork Production (million #'s) | Percent Change Year-Ago |
|------|-------------------|--------------------------------------|---------------------------|----------------------------------|----------------------------|
| 1990 | I | 21,879 | 178.3 | 3,902 | +4 |
| | II | 20,257 | 179.9 | 3,645 | -7.2 |
| | III | 20,350 | 178.8 | 3,639 | -4.0 |
| | IV | 22,628 | 181.4 | 4,105 | -1.2 |
| 1991 | I | 21,508 | 181.4 | 3,902 | 0.0 |
| | II | 20,921 | 181.3 | 3,792 | 4.0 |
| | III | 21,371 | 178.8 | 3,822 | 5.0 |
| | IV | 24,365 | 182.0 | 4,434 | 8.0 |
| 1992 | I | 23,802 | 181.5 | 4,321 | 10.7 |
| | II | 22,202 | 181.7 | 4,033 | 6.4 |
| | III | 23,746 | 179.6 | 4,264 | 11.6 |
| | IV | 25,138 | 181.7 | 4,567 | 3.0 |
| 1993 | I | 23,057 | 182.5 | 4,207 | -2.6 |
| | II | 22,661 | 183.2 | 4,151 | 2.9 |
| | III | 22,777 | 181.7 | 4,138 | -3.0 |
| | IV | 24,573 | 184.5 | 4,534 | -0.7 |
| 1994 | I | 22,746 | 183.9 | 4,182 | -0.6 |
| | II | 22,965 | 184.6 | 4,240 | 2.1 |
| | III | 23,673 | 182.7 | 4,326 | 4.5 |
| | IV | 26,322 | 186.6 | 4,913 | 8.4 |
| 1995 | I | 24,229 | 185.2 | 4,488 | 7.3 |
| | II | 23,646 | 185.8 | 4,394 | 3.6 |
| | III | 23,264 | 182.3 | 4,240 | -2.0 |
| | IV | 25,198 | 186.1 | 4,690 | -4.5 |
| 1996 | I | 23,650 | 185.6 | 4,389 | -2.2 |
| | II | 22,201 | 184.9 | 4,104 | -6.6 |
| | III | 22,711 | 182.4 | 4,143 | -2.3 |
| | IV | 23,833 | 186.7 | 4,449 | -5.1 |
| 1997 | I | 22,342 | 187.7 | 4,194 | -4.4 |
| | II | 21,834 | 187.4 | 4,091 | -0.3 |
| | III | 22,666 | 185.0 | 4,196 | 1.3 |
| | IV | 25,152 | 189.5 | 4,766 | 7.1 |
| 1998 | I | 24,776 | 189.2 | 4,688 | 11.8 |
| | II | 23,631 | 187.5 | 4,429 | 8.3 |
| | III | 25,038 | 184.7 | 4,625 | 10.2 |
| | IV | 27,523 | 188.9 | 5,239 | 9.9 |
| 1999 | I | 25,571 | 190.3 | 4,865 | 3.8 |
| | II | 24,292 | 190.6 | 4,630 | 4.5 |
| | III | 24,960 | 187.2 | 4,672 | 1.0 |
| | IV | 26,732 | 191.2 | 5,110 | -2.5 |
| 2000 | I | 25,019 | 192.8 | 4,824 | -0.8 |
| | II | 23,107 | 193.8 | 4,478 | -3.3 |
| | III | 24,097 | 191.1 | 4,606 | -1.4 |
| | IV | 25,714 | 194.8 | 5,010 | -2.0 |
| 2001 | I | 24,574 | 195.5 | 4,805 | -0.4 |
| | II | 23,273 | 195.3 | 4,546 | 1.5 |
| | III | 23,631 | 192.5 | 4,548 | -1.3 |
| | IV | 26,465 | 198.0 | 5,239 | 4.6 |
| 2002 | I | 24,139 | 198.0 | 4,780 | -0.5 |
| | II | 24,290 | 197.5 | 4,797 | 5.5 |
| | III | 25,117 | 192.4 | 4,832 | 6.2 |
| | IV | 26,714 | 196.7 | 5,255 | 0.3 |
| 2003 | I | 24,620 | 198.6 | 4,889 | 2.3 |
| | II ^p | 23,868 | 198.0 | 4,725 | -1.5 |
| | III ^{ac} | 24,226 | 194.8 | 4,719 | -2.3 |
| | IV ^a | 25,658 | 199.2 | 5,111 | -2.7 |
| 2004 | I ^a | 24,082 | 199.8 | 4,812 | -1.6 |
| | II ^a | 23,396 | 199.5 | 4,668 | -1.2 |

a Projected

c Average of the two estimation methods (Table 2 and 3)

p Preliminary

Table 5. Actual and Forecast Hog Prices, Lean Carcass Prices, and Retail Pork Prices^a

| Year | Quarter | Barrow and Gilts 6-Mkt Price (\$/cwt) | Lean Value (Live Price/74 yield) (\$/carcass cwt) | Retail Pork ¢/carcass cwt |
|------|------------------|---|---|------------------------------|
| 1990 | I | \$49.45 | \$66.82 | 196.2 |
| | II | \$59.01 | \$79.74 | 208.4 |
| | III | \$57.67 | \$77.93 | 222.6 |
| | IV | \$51.67 | \$69.82 | 223.1 |
| 1991 | I | \$51.50 | \$69.59 | 215.2 |
| | II | \$53.34 | \$72.08 | 213.2 |
| | III | \$50.85 | \$68.72 | 214.6 |
| | IV | \$39.84 | \$53.84 | 204.6 |
| 1992 | I | \$38.68 | \$52.27 | 198.9 |
| | II | \$44.83 | \$60.58 | 195.9 |
| | III | \$43.86 | \$59.27 | 200.6 |
| | IV | \$41.84 | \$56.54 | 197.0 |
| 1993 | I | \$43.96 | \$59.41 | 194.6 |
| | II | \$46.83 | \$63.28 | 194.3 |
| | III | \$47.49 | \$64.18 | 200.2 |
| | IV | \$43.23 | \$58.42 | 201.3 |
| 1994 | I | \$45.19 | \$61.07 | 200.8 |
| | II | \$42.44 | \$57.35 | 198.8 |
| | III | \$40.07 | \$54.15 | 199.0 |
| | IV | \$30.56 | \$41.30 | 193.6 |
| 1995 | I | \$38.19 | \$51.61 | 191.6 |
| | II | \$38.57 | \$52.12 | 190.2 |
| | III | \$48.32 | \$65.30 | 195.6 |
| | IV | \$42.86 | \$57.92 | 201.8 |
| 1996 | I | \$45.33 | \$61.26 | 206.3 |
| | II | \$54.84 | \$74.11 | 214.9 |
| | III | \$57.96 | \$78.32 | 230.4 |
| | IV | \$55.10 | \$74.46 | 231.9 |
| 1997 | I | \$51.06 | \$69.00 | 231.0 |
| | II | \$56.41 | \$76.23 | 229.7 |
| | III | \$54.45 | \$73.58 | 234.5 |
| | IV | \$43.69 | \$59.04 | 231.0 |
| 1998 | I | \$34.74 | \$46.95 | 233.0 |
| | II | \$39.42 | \$53.27 | 226.9 |
| | III | \$33.95 | \$45.88 | 231.0 |
| | IV | \$19.30 | \$26.08 | 226.9 |
| 1999 | I | \$28.83 | \$38.96 | 235.8 |
| | II | \$35.18 | \$47.54 | 238.4 |
| | III | \$35.70 | \$48.24 | 246.4 |
| | IV | \$36.29 | \$49.04 | 245.2 |
| 2000 | I | \$41.14 | \$55.59 | 249.8 |
| | II | \$50.43 | \$68.15 | 257.3 |
| | III | \$46.43 | \$62.74 | 264.3 |
| | IV | \$40.78 | \$55.11 | 261.3 |
| 2001 | I | \$42.83 | \$57.88 | 262.5 |
| | II | \$52.05 | \$70.34 | 267.0 |
| | III | \$51.05 | \$68.99 | 275.0 |
| | IV | \$37.30 | \$50.41 | 273.0 |
| 2002 | I | \$39.43 | \$53.28 | 270.9 |
| | II | \$35.03 | \$47.34 | 267.7 |
| | III | \$33.86 | \$45.76 | 264.1 |
| | IV | \$31.34 | \$42.35 | 260.2 |
| 2003 | I | \$35.38 | \$47.81 | 260.9 |
| | II ^p | \$42.18 | \$57.00 | 261.0 |
| | III ^a | \$41.50 | \$56.08 | |
| | IV ^a | \$38.69 | \$52.28 | |
| 2004 | I ^a | \$40.33 | \$54.50 | |
| | II ^a | \$42.43 | \$57.34 | |

^a Predicted prices for 2003 (I) forward are made with two equations with the results averaged.

^p Preliminary