

More Good Days Coming for Pork Producers

October 2004

Chris Hurt

The hog industry emerged from the financial darkness last spring. Profits have been excellent this summer and are expected to be very good for the next 12 months. Higher hog prices are being driven by strong pork demand which is expected to continue into 2005. The large corn and soybean crops have resulted in plunging feed price and dropped costs of production by about \$10 per live hundredweight since spring.

In the coming 12 months 51% to 52% lean carcasses on a live weight basis are expected to average near \$49. With costs in the higher \$30's, profits (returns above all costs) may approach \$10 per live hundredweight or about \$25,000 for each 1,000 hogs produced.

The favorable profits are expected to result in the largest U.S. expansion since 1997 and 1998. Farrowings could increase by four to eight percent over the next 18 months. If so, hog prices will begin to drop cyclically in the late summer of 2005 and reach their lowest levels in late 2006 and early 2007. At this point, 2004 and 2005 appear to be excellent price years with 2006 and 2007 being the lean years, particularly 2006.

The Numbers

In the just released September *Hogs and Pigs* report, USDA said that producers are already expanding. The breeding herd has already risen by one percent and farrowing intentions for this fall and winter are up one percent as well. In past years, herd expansion was often led by the major corn producing states. However, with changes in location of production and with an industrialized production sector, that is less true this time. While Iowa producers reported a three percent expansion of their breeding herds, North Carolina is up five percent, Colorado is up eight percent, and Texas is up 16 percent. Illinois, with very good corn and soybean crops has a two percent reduction in their breeding herd. Minnesota, with below average crops, also reports a two percent reduction. Other Midwestern states with reductions are Nebraska (down 4%) and Wisconsin (down 17%). Indiana's breeding herd was reported as unchanged.

The number of market hogs that were over 180 pounds on September 1 was up five percent and the actual head count in September was very close to that. This provides an early indication that the USDA report was reasonably on track with their hog count. Pigs that will come to market in roughly October and November (60 to 179 pounds on September 1) were about one percent less than the year-ago levels. Pigs less than 60 pounds on September 1 were up one percent. These pigs will come to market in roughly December through February of 2005, (see Table 1).

Producers reached a new milestone this summer as the national pigs per litter achieved 9.0 for the first time. Ten years ago, in 1994, this number stood at 8.22 pigs, and 20 year

ago, in 1984, producers achieved just 7.6 pigs per litter. Most of this improvement however, was gained by the late 1990's and in the past five years, only modest improvements have been posted.

Pork Supplies Rise with Higher Weights

Over the coming 12 months, pork supplies are expected to be about 1.5 percent higher than in the previous 12 months. This fall, supplies will be nearly unchanged from the same quarter one year ago. A rise near one percent is expected in the winter, before moving upward by nearly three percent in the second and third quarters of 2005. The three percent increase by next spring and summer is due to the one percent increase in farrowings, to larger anticipated live hog imports from Canada, and to heavier marketing weights.

Marketing weights bear a special mention. Carcass weights have been trending higher by about 7/10ths of one percent since 1990. In the next 12 months, carcass weights are expected to rise by one percent as producers respond to extremely positive margins and the lowest corn and meal prices since the 2000 crop for corn, and the 2001 crop for meal. However this fall hog, weights may be little changed from year-previous levels. The reason is the market factors that are driving large inverses in lean hog futures prices through next May. As of this writing, the October lean futures were over \$7 per lean hundredweight premium to the December. This means there is a nearby excess demand in relation to the available supply, but that this extra-demand may wane as the fall progresses. With strong inverses such as these, producers are well advised to send hogs to market as soon as they reach reasonable weights. Thus weights will stay modest as long as the large inverse exists.

Demand Holds Key to Prices

For those of us trying to evaluate prices over the next year we need to be reminded, "It's Demand—Stupid." And so it is. The demand side of price seems to hold all of the keys to the extremely strong prices since last spring. Thus, demand is probably the key to how long the price level can persist. So, let's break down some of the key components of demand and begin the evaluation of its staying power.

The first demand component is increased pork exports and reduced pork imports. In 2004 (trade data is available for January through July), pork exports have been up 24 percent composed of: Japan (+6%); Mexico (70%); and Canada (+28%). The growth in Japan is actually very modest compared to the loss of beef exports there. Mexico on the other hand does seem to be buying much more pork as a substitute for reduced beef purchases. Canadians, on the other hand, are eating more domestic beef, sending more live hogs to the U.S., and buying more pork cuts from the U.S. Clearly, the increased export demand is related to the reductions (or loss) of beef exports. Imports are down nine percent. Thus in total, net trade has reduced supplies for domestic consumers by about 2.7 percent of commercial production so far in 2004 (data through July).

How big is this impact? Pork production for 2004 through September is up 4.3 percent, subtracting 2.7 percent for net trade leaves domestic pork supplies up by about 1.6 percent. Then subtracting one percent for population growth leaves per capita available domestic pork supplies at up only .6 percent. So, available domestic pork supplies per capita are only modestly higher, but live hog prices have averaged \$51.74 so far this year compared to \$39.45 for 2003. Prices over \$12 per live hundredweight seem to say domestic demand is much better. But read on!

Breaking down the \$12 per live hundredweight shows that about one-half of this increase is related to higher retail pork prices (better demand), but the other half is due to smaller retail and packer margins. The higher retail price is partially accounted for by record high beef prices and the substitution of pork for beef. Lower marketing margins at the retail level appear to be partially related to very high marketing margins on beef. In essence, it appears that retailers are enjoying extraordinary margins on beef and are thus willing to take smaller margins on pork. Pork is also likely being strongly featured by retailers as a more moderate priced alternative to beef. These features tend to move much larger volumes. (Note: The marketing margins I am using here are calculated from retail meat prices collected by the Bureau of Labor Statistics. There is concern that these meat prices do not adequately reflect actual prices. USDA is providing scanner data that may help better understand actual retail prices. Their data and a discussion is available at: <http://www.ers.usda.gov/Data/Meatscanner/>

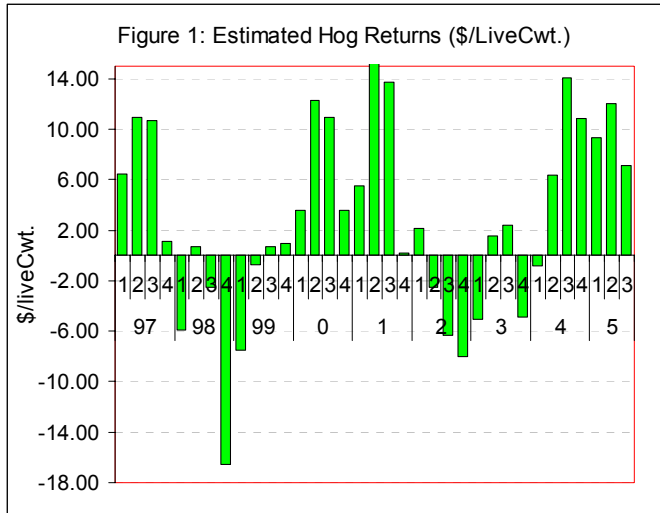
Granted, it's complicated, but will demand hold over the next year? An agreement with Japan on BSE testing standards and how to determine the age of animals would be the first step in widely opening beef exports. Even when this is done, it is not clear how quickly live cattle will be allowed to come in from Canada. If Japan begins to import U.S. beef with the Canadian border remaining closed, cattle and beef prices will move sharply higher, pork exports will drop. Under this scenario, live hog prices might be \$1 to \$3 lower. Alternatively, say the Japanese agreement is completed and the Canadian border is opened at the same time. Increased beef exports may be fairly closely offset by increased supplies of Canadian live cattle. If so, cattle and beef prices would be little changed and the impact on live hog prices would be negligible.

On the domestic demand front, beef prices will remain high over the coming year barring another case of BSE in the U.S. This should provide strong support for high retail pork prices. However, there is a question of whether the current narrow pork marketing margins will be maintained. Some widening probably can be expected, but my guess is that they will remain overall favorable over most of the next year. So, I think this continues to support hog prices staying stronger than most would anticipate.

High Hog Prices and Lower Costs

Hog prices seem to be getting increasingly difficult to accurately predict. So as you consider my predictions, keep a "grain of salt" handy. Hog prices as measured by 51% to 52% lean hog carcasses on a live weight basis are expected to average in the higher \$40 for the final quarter of 2004. Winter prices are expected to be about \$1 less. Spring prices

are expected to rally to average in the very low \$50s, before summer average prices are once again in the higher \$40s, (See Table 5) . Spring and early summer prices are expected to be strong, but growing pork supplies could begin to trim prices by late summer and especially into the fall of 2005 and 2006.



While pork demand is the primary reason for stronger than expected hog prices, it is the large U.S. crops that producers can also thank for a rosy profit outlook. My estimates of costs of production reached \$48.50 per live hundredweight in the second quarter of 2004 when U.S. average corn prices were \$2.85 and Decatur, Illinois hi-protein meal averaged \$333 per ton. This fall, costs estimates are about \$38 with estimated last quarter corn prices at \$1.90 per bushel and meal at \$160

per ton. Over the next 12 months costs are estimated at \$39 compared to \$44.50 over the past 12 months.

Given estimates for hog prices in Table 5. The period from the spring of 2004 through the summer of 2005 will be a very profitable period. Last spring, high hog prices carried the industry to profits of about \$6 per live hundredweight. In the summer, high hog prices and moderating costs resulted in an estimated profit of \$14 per live hundredweight. This fall those profits are expected to be around \$9, followed by \$10 in the winter, \$12 next spring, and \$7 next summer. A chart of these estimated returns is shown in **Figure 1**.

Implications for the Industry and the Coming Expansion

It has been a while since pork producers had to worry about income tax liability, but 2004 and 2005 are two of those years. Estimated profits above all costs for 2004 are estimated at \$7.60 per live hundredweight, or about \$20,000 of net income per 1,000 hogs produced. For 2005, those profits are estimated at \$8.25 per live hundredweight or about \$22,000 per 1,000 hogs produced. Who receives these returns will of course depend upon which phase of production each individual is involved in, and which party bears most of the price risk.

The positive returns will help operations make progress on improving their financial position. This is especially important since during the period from October of 2001 through March of 2004 producers experienced a loss that averaged \$2.20 per live hundredweight. The most severe losses were in late 2002 and early 2003 when they averaged more than \$6.00. Some increased their debt load during this period and thus the

extended period of profits upcoming will enable them to reduce debt to more manageable levels.

The next issue is feed purchase strategies. Soybean meal futures are currently \$150 to \$160 per ton. This is cheap by historical standards. Nearby futures prices at \$150 per ton or lower have existed only about 15 percent of the time in the past 20 years. But history shows meal futures prices have moved lower, to near \$120 per ton, in three of the last 20 years. Those were 1985, 1998, and 1999. While nearby futures did go as low as \$120 per ton (only \$122.80 in 1998), the average cash price at Decatur, Illinois for the marketing year was: \$166, \$139, and \$168. For comparison, the U.S. average soybean prices in those three years averaged \$5.05, \$4.93, and \$4.63 per bushel. So, the possibility of lower prices does exist for meal, but that may not occur unless the South American crop is anticipated to be very large. A general strategy would be to purchase your entire fall meal needs and a portion of needs for January to August 2005. A follow-up decision can then be made in the winter as the size of the South American crop becomes better known.

Cash corn prices are depressed by both a large U.S. crop and by weak local basis levels in high yield areas. Owning as much cash inventory at harvest as possible appears to be the favored strategy. I would expect price recovery after harvest from a basis boost in the late-harvest period, by growing usage during the winter, and by anticipation of a much smaller crop in 2005, as well as for tightening anticipated ending stocks from the 2005 crop. Once the maximum cash inventory is purchased, then owning futures would be the preferred choice. A secondary choice that would leave downside price movement opportunity in place would be to buy at-the-money March call options for about 10 cents per bushel.

A note of caution is in order for purchases of feed ingredients. Every buyer wants to purchase at the lowest prices. However, it is very easy to overstay a position waiting for the last few cents. Keep in mind that corn and meal are both at historic levels that should be considered "good buys" so don't let meal go up \$50 per ton while you are waiting on \$5 lower prices.

Finally, how much expansion will be forthcoming in the next year. I think it is going to be fairly robust, at least the largest expansion in the U.S. since 1997 and 1998 when annual U.S. farrowings rose by eight percent. I would expect expansion in the range of four to eight percent over the coming year and one-half. That expansion should begin in earnest this fall and winter and extend through out all of 2005. If so, resulting larger farrowings would begin to show up in the spring of 2005 and extend through mid-2006. Finally, the resulting build-up in slaughter hogs would start in the fall of 2005 and reach peak production in the last-half of 2006.

By these rough cycle measures, hog prices will be strong through the summer of 2005, begin their downward spiral in the fall of 2005 through all of 2006. The worst of the prices on the next cycle could be in late 2006 and early 2007. On a calendar year notation, 2004 and 2005 will be very good price years, then 2006 and 2007 will be poor

price years. Generally it is the first of the poor price years that is the worst (2006) with improvement coming by the last-half of the second year (2007).

Historically, the hog industry has continued to revolve around the four year cycle. Below is a rough count of recent years, and also shows how low prices in 2006 and 2007 would fit the four year pattern. Keep in mind that cycles tend to show patterns over time, but that many factors can distort the exact timing such as drought, trade policies, diseases such as BSE, etc. So, studying hog cycles is of value, but should be used as a potential general indicator rather than a precise time line for management decisions.

Good Price Years		Poor Price Years	
1992	1993	1994	1995
1996	1997	1998	1999
2000	2001	2002	2003
2004	2005	2006	2007

Table 1. Hogs and Pigs in the United States, September 1, 2004

	2003	2004	2004 as % of 2003
	thousand head		percent
Inventory			
All hogs and pigs	60,859	61,384	100.9
Kept for breeding	5,918	5,983	101.1
Kept for market	54,941	55,400	100.8
Market hogs by weight			
Under 60 pounds	20,368	20,540	100.8
60-119	13,729	13,644	99.4
120-179	11,334	11,236	99.1
180 and over	9,510	9,982	105.0
Sows farrowing			
June 03 - Aug 03	2,906	2,888	99.4
Sept 04 - Nov 04 ¹	2,841	2,865	100.8
Dec 04 - Feb 05 ¹	2,827	2,855	101.0
Pigs saved per litter			
Mar 04 - May 04	8.88	8.93	100.6
June 04 - Aug 04	8.90	9.00	101.1
Pig crop			
Mar 04 - May 04	25,627	25,520	99.6
June 04 - Aug 04	25,869	26,005	100.5

¹ Intentions

Table 2. U.S. Market Hogs Weighing 60 to 179 Pounds on September 1, and Commercial Slaughter in Calendar Quarter from October to December

	thousand head		percent
1990	22,350	22,628	101.2
1991	23,680	24,367	102.9
1992	24,509	25,138	102.6
1993	22,720	24,573	108.2
1994	25,130	26,322	104.7
1995	24,517	25,198	102.8
1996	23,370	23,833	102.0
1997	24,061	25,152	104.5
1998	25,587	27,584	107.8
1999	24,543	26,723	108.9
2000	23,872	25,714	107.7
2001	24,292	26,470	109.0
2002	24,745	26,715	108.0
2003	25,063	27,608	110.2
2004a	24,880	27,318	109.8b

^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 1992 to 2004

Year	Sows Farrow	Pig Crop	Ratio	Commercial		
				Year	Slaughter	Ratio
March-May				October-December		
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	26,723	101.7
2000	2,885	25,565	8.86	2000	25,714	100.6
2001	2,870	25,509	8.89	2001	26,470	103.8
2002	2,941	26,001	8.84	2002	26,715	102.7
2003	2,885	25,627	8.88	2003	27,608	107.7
2004	2,857	25,520	8.93	2004 ^a	27,431	107.5
June-August				January-March		
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	25,579	96.0
1999	2,920	25,862	8.86	2000	25,019	96.7
2000	2,889	25,548	8.84	2001	24,578	96.2
2001	2,878	25,539	8.87	2002	24,148	94.6
2002	2,883	25,725	8.92	2003	24,654	95.8
2003	2,906	25,869	8.90	2004	25,713	99.4
2004	2,888	26,005	9.00	2005 ^a	25,620	98.5
September-November				April-June		
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	23,105	92.5
2000	2,838	25,112	8.85	2001	23,280	92.7
2001	2,889	25,492	8.82	2002	24,280	95.2
2002	2,833	25,094	8.86	2003	23,922	95.3
2003	2,841	25,355	8.93	2004	24,735	97.6
2004a	2,865	25,699	8.97	2005 ^a	25,093	97.6
December-February				July-September		
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	23,635	98.6
01/02	2,835	24,857	8.77	2002	25,120	101.1
02/03	2,769	24,399	8.81	2003	24,747	101.4
03/04	2,827	25,021	8.85	2004	25,782	103.0
04/05a	2,855	25,352	8.88	2005 ^d	26,210	103.4

^a Estimates

^b Mean of previous three years including Canadian live imports (not shown).

Table 4. U.S. Commercial Slaughter, Carcass Weights, and Quarterly Pork Production 1992-2005

Year	Quarter	Commercial Slaughter (1,000 head)	Carcass Weight Per Hog	Pork Production (million #'s)	Percent Change Year-Ago
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	24,578	195.5	4,805	-0.4
	II	23,280	195.3	4,546	1.5
	III	23,635	192.4	4,548	-1.3
	IV	26,470	197.9	5,239	4.6
2002	I	24,148	197.9	4,780	-0.5
	II	24,280	197.6	4,797	5.5
	III	25,120	192.4	4,832	6.2
	IV	26,715	196.7	5,255	0.3
2003	I	24,654	198.7	4,898	2.5
	II	23,922	198.2	4,741	-1.2
	III	24,747	194.2	4,807	-0.5
	IV	27,608	199.2	5,499	4.6
2004	I	25,713	199.5	5,130	4.7
	II	24,735	198.0	4,897	3.3
	III ^P	25,745	196.0	5,045	5.0
	IV ^{ac}	27,375	200.7	5,494	-0.1
2005	I ^a	25,620	201.4	5,160	0.6
	II ^a	25,093	200.9	5,041	2.9
	III ^a	26,210	197.7	5,182	2.7

^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
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	\$34.99	\$47.28	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	\$42.64	\$57.62	262.2
	III	\$42.90	\$57.97	269.8
	IV	\$36.89	\$49.85	270.2
2004	I	\$44.18	\$59.70	269.3
	II	\$54.91	\$74.20	276.8
	III ^p	\$56.13	\$75.85	286.6
	IV ^a	\$48.73	\$65.85	
2005	I ^a	\$48.08	\$64.97	
	II ^a	\$51.39	\$69.45	
	III ^a	\$47.48	\$64.16	

^a Predicted prices for 2004 (IV) forward are made with two equations with the results averaged.

^p Preliminary