

Egg Economics Update # 274

U.S. Farm and Retail Egg Price Relationships - 1982 to 2005
Changing Share of the Consumer's Egg Dollar

This review of U.S. farm and retail egg prices represents the period from 1982 through 2005. We chose to use the USDA Farm Egg Price series reported in the NASS publication Agricultural Prices published in the USDA Poultry Yearbook on the Department's web page. Retail prices are based upon the U.S. Department of Labor reports on prices sampled in U.S. cities for Grade A large eggs (per dozen prices).

Farm prices are generally not reported in the traditional market reporting systems. An intermediate quotation includes processing costs and profits, packaging materials, transportation, discounts and other miscellaneous costs. In many regions, "first sale" prices define cartoned sales.

During the 24 years in question, monthly prices to the farmer ranged from 23 cents to \$1.00 per dozen. Prices to the consumer ranged from 68 cents to \$1.57 cents per dozen. Both series of prices are assumed to represent the entire nation. Actual ranges in prices may be slightly more than this due to weekly variations within the month.

Tables 1 and 2 provide the basic data for calculating the remaining tables and figures in this article. Averages for each year and month are calculated. Overall monthly prices averaged 51.8 cents/dozen at the farm level and 96.7 cents/dozen at the retail level. Approximately 5 cents/dozen should be added to the farm price to represent large eggs (as quoted at the retail level).

Figures 1 and 2 illustrate the 24-year averages for monthly prices at the farm and retail levels respectively. As indicated, farm prices varied from a low of 43.7 cents/dozen in May to 58.9 cents/dozen in December - a 15.2 cent spread within the average year. Retail prices, on the other hand ranged from a low of 90.6 cents/dozen in June to \$1.035 in December - a 12.9 cent/dozen spread. This rather close agreement between the changes in price between the two series indicates that retailers are generally responding to changes in the market place with comparable shelf-price changes.

Figure 3 illustrates the variation in retail prices during the 24 years of this review. In general, as indicated by the trend line, retail prices have increased at the rate of 1.38 cents/dozen per year for a total calculated change of about 32 cents/dozen (\$0.82 to \$1.14 per dozen).

Table 3 lists the actual monthly retail prices compared with the projected price determined by regression analyses. The projected prices assume there is a "natural" annual change in price associated with the year alone. In reality, variation in supplies and demand along with price reporting errors contribute to the variations that exist between the individual years. In some cases these factors resulted in price differences of up to 20 cents/dozen (in 2004 for example).

Table 1: U.S. Farm Egg Prices - 1982 to 2005

Source: U.S.D.A. - Agricultural Prices

All table eggs (mixed sizes) - non-processed
Month

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Av
1982	0.591	0.617	0.628	0.579	0.488	0.458	0.492	0.446	0.514	0.528	0.521	0.496	0.530
1983	0.465	0.489	0.516	0.512	0.550	0.534	0.518	0.578	0.606	0.637	0.724	0.802	0.578
1984	0.928	0.876	0.737	0.874	0.620	0.538	0.529	0.515	0.512	0.479	0.554	0.523	0.640
1985	0.432	0.445	0.505	0.449	0.419	0.456	0.453	0.505	0.555	0.572	0.603	0.598	0.499
1986	0.583	0.540	0.614	0.492	0.488	0.421	0.519	0.553	0.554	0.503	0.600	0.579	0.537
1987	0.517	0.501	0.460	0.458	0.395	0.403	0.408	0.405	0.497	0.409	0.454	0.387	0.441
1988	0.391	0.369	0.400	0.358	0.330	0.383	0.495	0.501	0.560	0.506	0.517	0.532	0.445
1989	0.558	0.538	0.733	0.580	0.541	0.555	0.587	0.645	0.642	0.642	0.731	0.771	0.627
1990	0.780	0.623	0.716	0.639	0.509	0.537	0.472	0.581	0.609	0.654	0.659	0.661	0.620
1991	0.716	0.604	0.703	0.565	0.477	0.477	0.550	0.536	0.515	0.520	0.530	0.605	0.567
1992	0.485	0.438	0.423	0.430	0.385	0.407	0.398	0.417	0.490	0.457	0.546	0.544	0.452
1993	0.530	0.513	0.603	0.559	0.483	0.517	0.468	0.510	0.447	0.491	0.521	0.523	0.514
1994	0.505	0.522	0.547	0.487	0.454	0.439	0.445	0.470	0.477	0.444	0.503	0.508	0.483
1995	0.491	0.486	0.485	0.486	0.419	0.436	0.479	0.505	0.545	0.544	0.658	0.692	0.519
1996	0.681	0.647	0.692	0.649	0.569	0.583	0.577	0.626	0.651	0.627	0.726	0.798	0.652
1997	0.661	0.654	0.608	0.530	0.507	0.449	0.525	0.498	0.575	0.531	0.711	0.680	0.577
1998	0.626	0.511	0.572	0.495	0.387	0.448	0.434	0.516	0.496	0.532	0.610	0.614	0.520
1999	0.575	0.497	0.527	0.426	0.369	0.374	0.406	0.421	0.398	0.335	0.482	0.435	0.437
2000	0.401	0.517	0.385	0.476	0.321	0.439	0.377	0.500	0.418	0.509	0.572	0.674	0.466
2001	0.507	0.501	0.516	0.484	0.385	0.362	0.354	0.388	0.377	0.431	0.486	0.410	0.433
2002	0.450	0.366	0.515	0.321	0.297	0.445	0.381	0.439	0.390	0.348	0.563	0.519	0.420
2003	0.529	0.466	0.518	0.520	0.397	0.499	0.524	0.669	0.634	0.703	0.926	0.739	0.594
2004	0.806	0.745	1.000	0.614	0.468	0.496	0.399	0.334	0.351	0.303	0.436	0.488	0.537
2005	0.373	0.358	0.327	0.261	0.236	0.231	0.326	0.257	0.465	0.314	0.482	0.564	0.350
Av	0.566	0.534	0.572	0.510	0.437	0.454	0.463	0.492	0.512	0.501	0.588	0.589	0.518

Table 2: Retail Egg Prices - 1982 to 2005

Source: U.S. Department of Labor, Bureau of Labor Statistics

Eggs: Grade A, Large, per dozen

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Av
1982	0.925	1.007	0.952	0.896	0.842	0.783	0.851	0.778	0.852	0.854	0.849	0.813	0.867
1983	0.831	0.794	0.836	0.825	0.865	0.825	0.847	0.884	0.938	0.962	0.996	1.131	0.895
1984	1.301	1.324	1.153	1.199	1.054	0.903	0.876	0.860	0.854	0.842	0.823	0.867	1.005
1985	0.746	0.784	0.790	0.783	0.745	0.724	0.787	0.789	0.857	0.860	0.872	0.906	0.804
1986	0.901	0.866	0.887	0.890	0.820	0.795	0.833	0.913	0.868	0.855	0.897	0.910	0.870
1987	0.862	0.823	0.800	0.786	0.763	0.711	0.763	0.730	0.837	0.778	0.805	0.733	0.783
1988	0.760	0.718	0.740	0.719	0.678	0.705	0.803	0.909	0.874	0.896	0.839	0.833	0.790
1989	0.941	0.890	1.031	0.997	0.956	0.937	0.961	0.983	1.038	1.023	1.080	1.137	0.998
1990	1.223	1.041	1.111	1.092	0.940	0.930	0.899	0.954	0.946	1.012	1.018	1.001	1.014
1991	1.106	0.987	1.069	1.002	0.908	0.884	0.966	1.024	0.987	0.976	0.950	1.012	0.989
1992	0.933	0.881	0.850	0.829	0.836	0.801	0.827	0.809	0.873	0.858	0.897	0.928	0.860
1993	0.898	0.895	0.927	0.997	0.895	0.921	0.900	0.929	0.890	0.897	0.917	0.871	0.911
1994	0.917	0.903	0.926	0.861	0.801	0.841	0.815	0.895	0.855	0.810	0.857	0.870	0.863
1995	0.882	0.863	0.875	0.833	0.819	0.825	0.879	0.984	0.956	0.981	1.037	1.160	0.925
1996	1.155	1.091	1.138	1.086	1.021	0.945	1.042	1.072	1.150	1.129	1.139	1.308	1.106
1997	1.148	1.132	1.056	1.081	1.002	0.952	0.979	1.061	1.009	1.018	1.090	1.172	1.058
1998	1.120	1.073	1.043	1.061	0.960	0.932	0.971	1.053	1.022	1.048	1.077	1.089	1.037
1999	1.053	1.078	1.005	0.942	0.900	0.949	0.880	1.020	0.956	0.888	0.920	0.920	0.959
2000	0.975	0.962	0.931	0.939	0.852	0.838	0.868	0.893	0.920	0.923	0.902	0.959	0.914
2001	1.011	0.943	0.886	1.028	0.881	0.920	0.862	0.929	0.916	0.916	0.935	0.925	0.929
2002	0.973	0.996	1.003	1.047	0.997	0.975	0.990	1.053	1.055	1.039	1.080	1.176	1.032
2003	1.175	1.189	1.209	1.131	1.009	1.199	1.150	1.277	1.257	1.330	1.448	1.559	1.244
2004	1.573	1.583	1.625	1.562	1.372	1.311	1.253	1.277	1.145	1.089	1.085	1.199	1.340
2005	1.211	1.284	1.132	1.164	1.185	1.139	1.165	1.166	1.279	1.264	1.279	1.350	1.218
Av	1.026	1.004	0.999	0.990	0.921	0.906	0.924	0.968	0.972	0.969	0.991	1.035	0.967

Figure 1: Monthly Farm Egg Prices 1982 to 2005

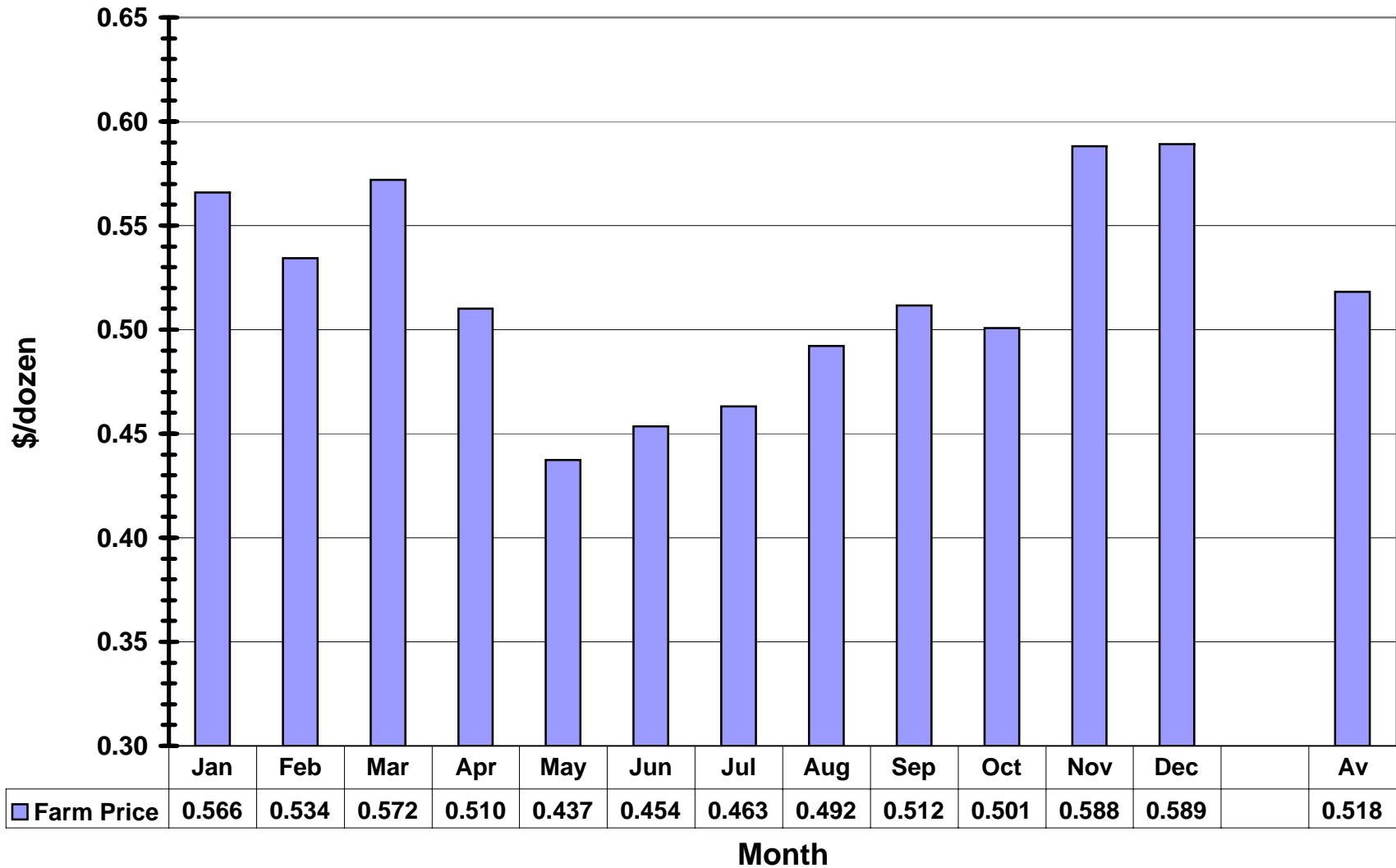


Figure 2: Monthly Retail Egg Prices 1982 to 2005

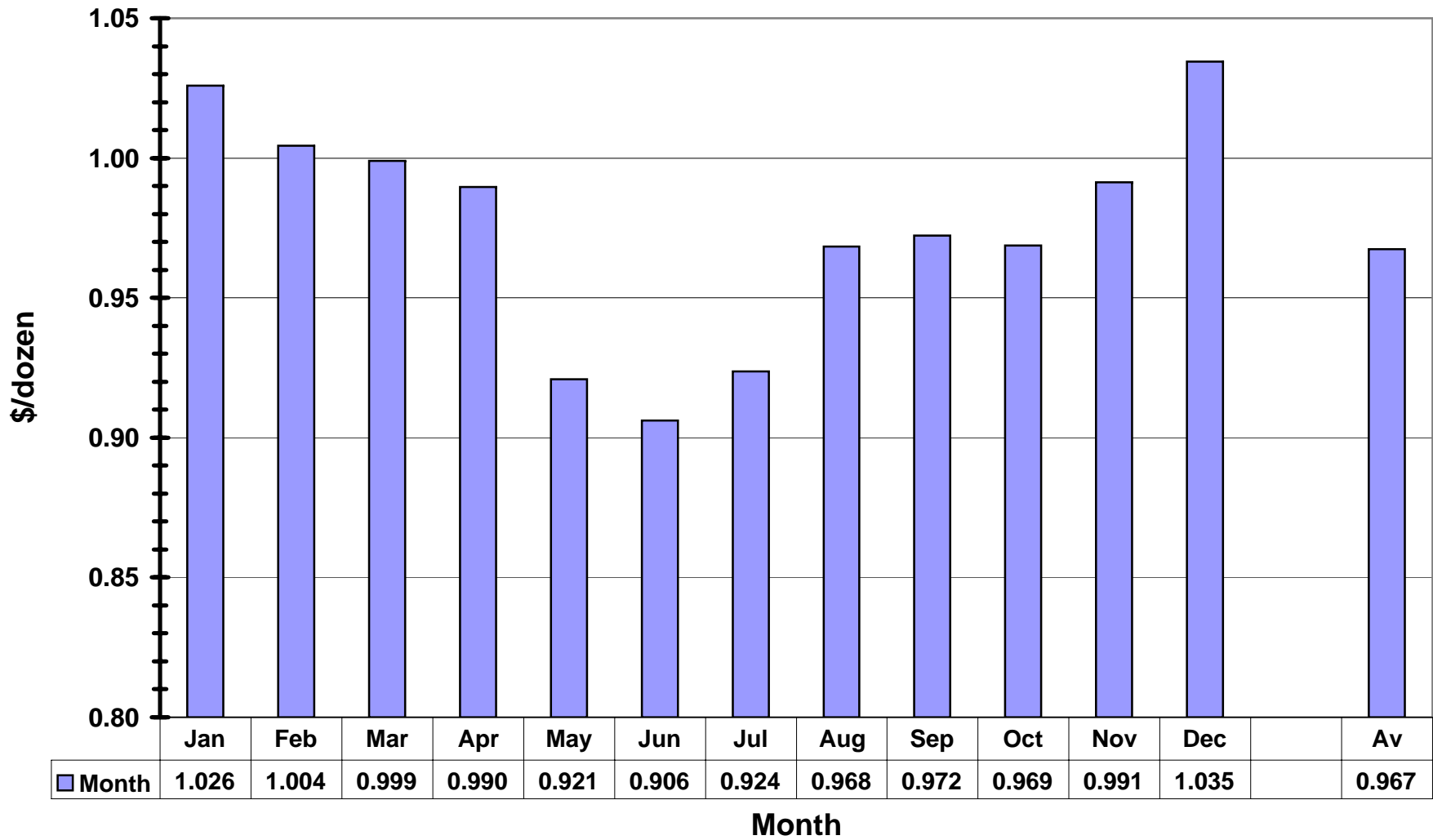
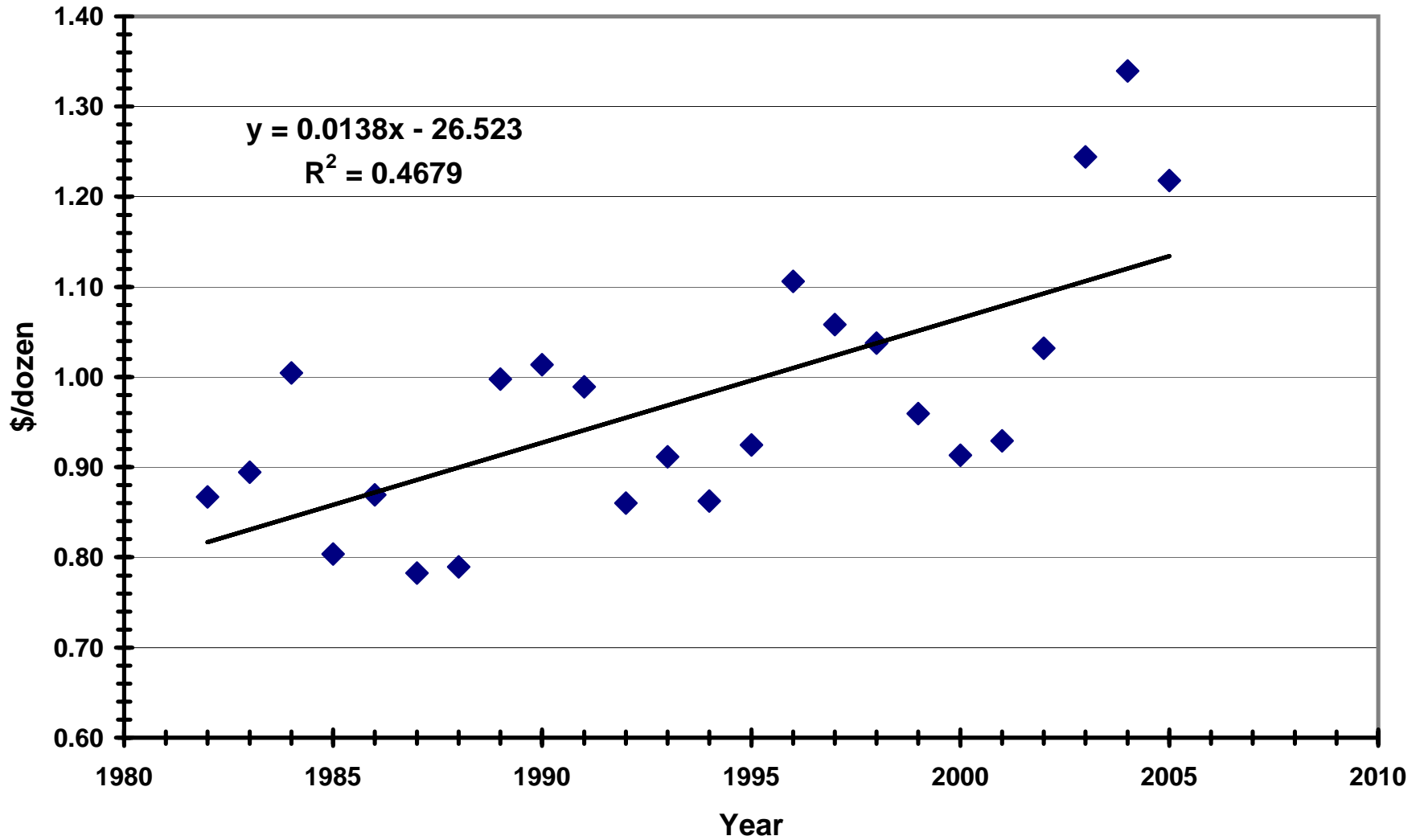


Figure 3: Retail Egg Prices - 1982 to 2005



**Table 3: Annual Retail Prices vs Projected Prices
1982 to 2005**

Year	Actual Price	Projected Price *	Difference
1982	0.867	0.829	-0.038
1983	0.895	0.842	-0.052
1984	1.005	0.856	-0.148
1985	0.804	0.870	0.066
1986	0.870	0.884	0.014
1987	0.783	0.898	0.115
1988	0.790	0.911	0.122
1989	0.998	0.925	-0.073
1990	1.014	0.939	-0.075
1991	0.989	0.953	-0.036
1992	0.860	0.967	0.106
1993	0.911	0.980	0.069
1994	0.863	0.994	0.132
1995	0.925	1.008	0.083
1996	1.106	1.022	-0.085
1997	1.058	1.036	-0.023
1998	1.037	1.049	0.012
1999	0.959	1.063	0.104
2000	0.914	1.077	0.163
2001	0.929	1.091	0.161
2002	1.032	1.105	0.073
2003	1.244	1.118	-0.126
2004	1.340	1.132	-0.207
2005	1.218	1.146	-0.072

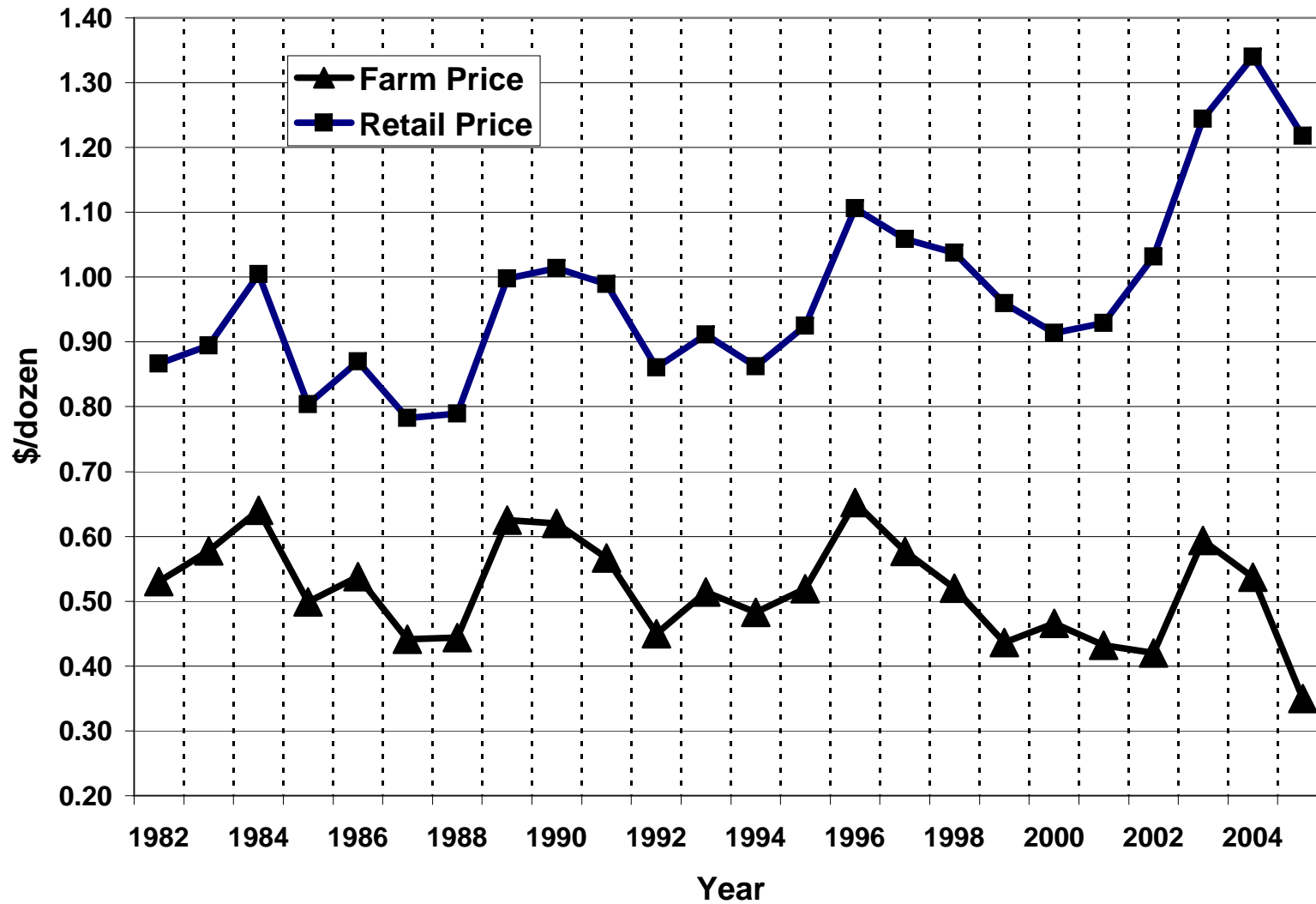
* The projected price is based upon the following straight line regression formula:

$$\text{Projected price} = 0.0138 \times (\text{the year}) \text{ minus } 26.523$$

Figure 4 illustrates the annual changes in farm and retail prices. Farm prices have usually fluctuated between 40 and 65 cents/dozen - a fairly consistent pattern. Retail prices, on the other hand, have fluctuated from \$0.80 to more than \$1.20 per dozen. Of particular interest are the rapidly increasing retail prices during the last three years (2003 to 2005).

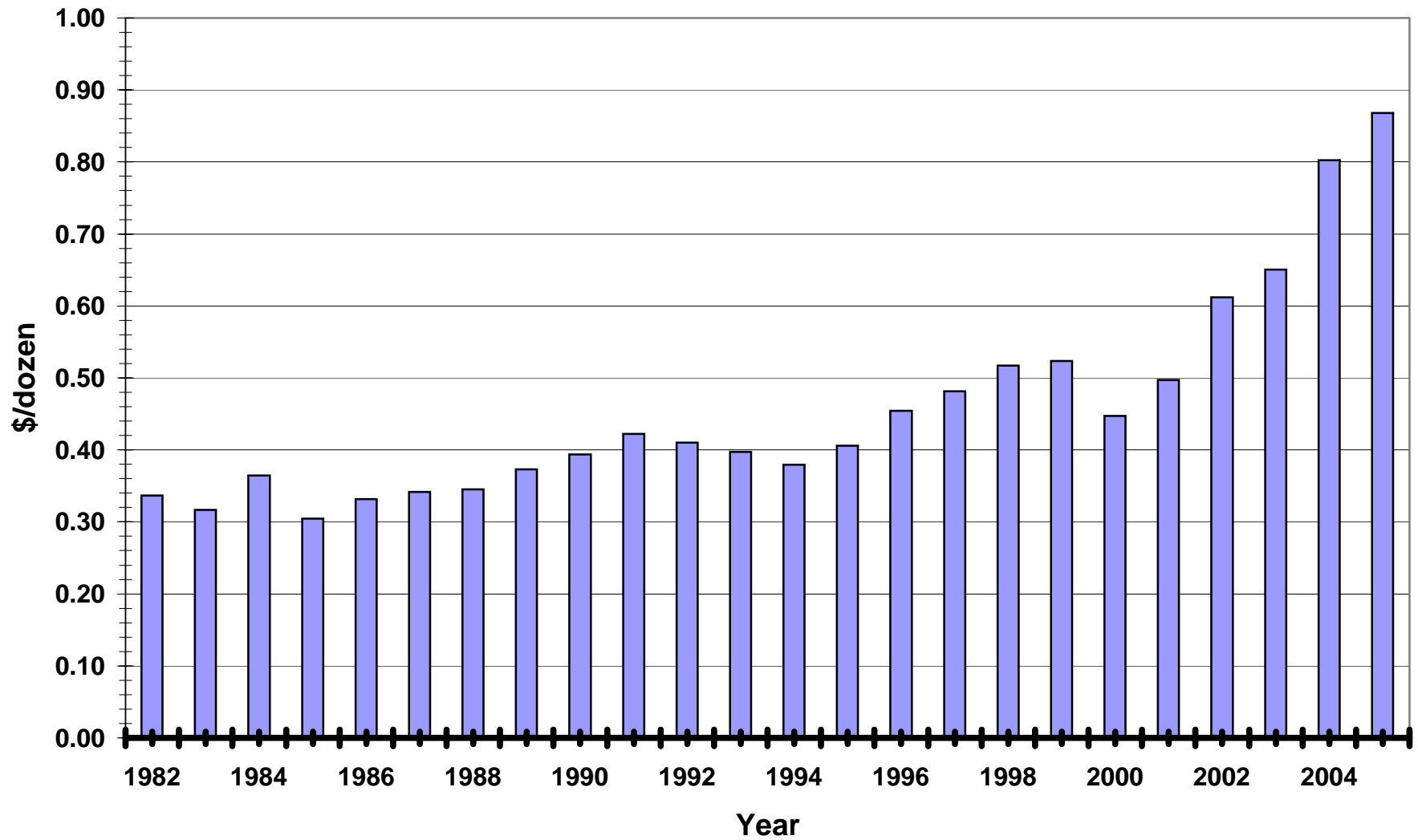
Table 4 lists the differences between prices in the two series and the percentage of the retail dollar that the farm price represents. In general differences in price have doubled from 30+ cents to 60-80 cents. Parallel to these price changes, the farm price share of the retail dollar has gone from around 60% down to 40% or less (2005). Figure 5 illustrates the progression of higher spreads beginning in about 1996.

Figure 4: U.S. Retail vs Farm Egg Prices - 1982 to 2005



**Table 4. U.S. Farm Egg Price and Retail Egg Price Spreads
1982 to 2005**

Year	Cents/dozen		Difference	%
	Farm Price	Retail Price		
1982	0.530	0.867	0.337	61.1
1983	0.578	0.895	0.317	64.6
1984	0.640	1.005	0.365	63.7
1985	0.499	0.804	0.305	62.1
1986	0.538	0.870	0.332	61.9
1987	0.441	0.783	0.342	56.4
1988	0.444	0.790	0.346	56.2
1989	0.625	0.998	0.373	62.6
1990	0.620	1.014	0.394	61.1
1991	0.567	0.989	0.422	57.3
1992	0.450	0.860	0.410	52.3
1993	0.514	0.911	0.397	56.4
1994	0.483	0.863	0.380	56.0
1995	0.519	0.925	0.406	56.1
1996	0.652	1.106	0.454	58.9
1997	0.577	1.058	0.481	54.5
1998	0.520	1.037	0.517	50.1
1999	0.436	0.959	0.523	45.5
2000	0.466	0.914	0.448	51.0
2001	0.432	0.929	0.497	46.5
2002	0.420	1.032	0.612	40.7
2003	0.594	1.244	0.650	47.7
2004	0.537	1.340	0.803	40.1
2005	0.350	1.218	0.868	28.7
Average	0.518	0.967	0.449	53.5

Figure 5: Retail/Farm Price Spread - 1982 to 2005 (cents/dozen)

**Table 5: Monthly Relationship of Prices to Annual Averages
Farm vs Retail 1982 to 2005**

Month	Farm \$/doz	Retail \$/doz	Farm %	Retail %
Jan	0.566	1.026	109.3	106.1
Feb	0.534	1.004	103.1	103.8
Mar	0.572	0.999	110.4	103.3
Apr	0.510	0.990	98.5	102.4
May	0.437	0.921	84.4	95.2
Jun	0.454	0.906	87.6	93.7
Jul	0.463	0.924	89.4	95.6
Aug	0.492	0.968	95.0	100.1
Sep	0.512	0.972	98.8	100.5
Oct	0.501	0.969	96.7	100.2
Nov	0.588	0.991	113.5	102.5
Dec	0.589	1.035	113.7	107.0
Av	0.518	0.967	100.0	100.0

Table 5 and Figure 6 illustrate the seasonal relationships for farm and retail prices. As was stated earlier, the absolute variation in prices by month are comparable between farm and retail systems. At higher prices (retail) the effect of this on "percentage" changes is less than it is with farm prices. For example, farm prices vary from 84.4% of the annual price in May to 113.7% in December. Retail prices, on the other hand, vary from 93.7% in June to 107.0% in December (Figure 6).

General Conclusions

- * Farm egg prices during this 24 year period have been much more constant than retail price
- * Retail prices have shown a 1.38 cent/dozen increase per year - a total of 30 cents/dozen
- * Farm to retail egg price spread has increased from 30 to 60 cents/dozen in 24 years
- * The producer share of the retail dollar spent on eggs has decreased from 60% to 40%

The increases in spread between farm prices and retail prices appears to be a permanent change. The amount of change occurring in the last four years (30 to 35 cents/dozen) appears disproportionate to the changes in costs such as processing, packaging, transportation and other marketing costs. Such trends continue throughout the nation, eggs at \$1.50 to \$2.00 per dozen will become much more prevalent than they are today.

Figure 6: Monthly Egg Price Variation - Farm vs Retail - 1982 to 2005

