

Price Behavior Of Purchased Farm Inputs, 1970-1976

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This report traces the pattern of prices paid by farmers for production items and services during the 1970 to 1976 time period. All major groups of expense items are included from data obtained from annual summaries of agricultural prices reported by the Statistical Reporting Service. Price levels are reported as index numbers for the United States (Table 1). Certain specific items within the major groups have been selected to show the various patterns actual prices have taken in North Dakota during the 1970's. The North Dakota prices are reported as annual averages or as of a certain date in the year.

The relative increases in the costs of three off-farm services provided to farmers; interest, wages, and taxes, are illustrated in Figure 1. The Index of Prices Paid By Farmers (PPF) is also included for sake of comparison. The PPF is a measurement of price changes for all services and production items (excluding living expenses) purchased by farmers. All measures are based on 1970 = 100.

Prices paid by farmers as measured by the PPF increased 78 per cent from 1970 to 1976. Prices rose about 6 per cent per year in 1970 and 1971, but since 1972 have risen at an annual average rate of 16 per cent, or about 13 per cent per year between 1970 and 1974. This is the figure (13%) to which all other price changes will be compared.

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Interest Expense On Real Estate

Interest costs have risen more rapidly and higher than most other farm expenses, rising at an annual rate of 21 per cent since 1970. This increase in costs is due to increased interest rates paid and increased farm indebtedness. Increasing interest rates combined with the widely publicized increases in land prices compound the problem of farm ownership costs. Unlike many other farm expense items, interest is a continuing cost that is usually not renegotiated during the loan period, so the farmer is locked in for years to come, and has committed future earnings with scanty assurance and knowledge of size or existence of those earnings. Decisions regarding many other expenses can be reversed the following year or as conditions change, but not so with interest. This causes genuine concern to farm managers.

Wage Rates On Hired Labor

Wage rates have increased at an annual average of 11 per cent during the 1970's. Although increased wage costs have contributed to the increase in prices paid, the increase has been well below the average increase in prices. Farmers compensate for higher wages by substituting equipment for workers.

Taxes On Real Estate

Taxes have increased at an annual rate of six per cent since 1970. Taxes on real estate are a unique expense item since the farmer cannot pinpoint the benefit gained from a dollar paid in taxes. Contributions to education, highways, law and fire protection, and similar social goods are difficult to measure and evaluate. Furthermore, no bargaining

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Table 1. Indexes of Prices Paid and Prices Received by Farmers, United States, 1970-1976.

Year	PPF Index	Index of prices Paid by Farmers For								Index of Prices Received by Farmers For			
		Feed	Fertilizer	Fuels	Motor	Building	Interest	Taxes	Wages	Seed	Crops	Livestock	All
(1970 = 100)													
1970	100	100	100	100	100	100	100	100	100	100	100	100	100
1971	104	104	103	103	103	107	106	105	105	111	108	100	103
1972	112	105	107	104	106	116	119	110	111	121	114	115	114
1973	133	158	116	112	111	130	140	112	121	149	175	155	163
1974	152	192	190	153	136	160	171	119	139	192	224	140	175
1975	167	185	247	170	156	187	202	129	150	219	201	146	168
1976	178	189	210	180	152	190	226	136	164	215	197	150	169
Annual Average Increase,													
1970-76	13%	15%	18%	13%	9%	15%	21%	6%	11%	19%	16%	8%	12%

Source: United States Department of Agriculture, Agricultural Prices, Annual Summaries, Crop Reporting Board, Statistical Reporting Service, Washington, D.C., 1970-1976.

Table 2. Prices Paid for Production Items, North Dakota, 1970-1976.

Item	1970	1971	1972	1973	1974	1975	1976	% change 70-76
	----- Dollars ----- %							
Fertilizer, \$/ton, April 15								
Anhydrous Ammonia	85.00	85.00	85.00	92.00	175.00	265.00	190.00	124%
11-48-0	85.00	88.00	91.00	105.00	170.00	250.00	180.00	112%
18-46-0	90.00	91.00	97.00	105.00	175.00	255.00	185.00	106%
Seed, \$/bu., April 15								
Spring Wheat Seed	2.25	2.30	2.50	2.85	8.30	7.40	6.20	176%
Feed, \$/cwt, annual average								
Soybean Oil Meal, 44% protein	5.80	5.96	6.48	14.79	11.96	9.98	10.99	90%
Building and Fencing, annual average								
Plywood, 1/4" A-D, \$/M sq. ft.	137.25	154.00	172.25	234.50	247.25	255.00	285.00	108%
Asphalt shingles, 240 lb., \$/sq.	13.12	14.58	15.45	16.25	21.95	25.68	25.75	96%
Barbed Wire, 2 point, 12 1/2 guage, \$/80 rod spool	11.85	12.48	13.90	15.48	26.33	33.55	28.43	140%
Fuels and Energy, annual average								
Diesel Fuel, \$/gal.	.184	.183	.185	.223	.354	.367	.404	120%
Pesticides, April 15								
Atrazine, wettable powder, 80%/pound, \$/lb.	2.50	2.50	2.60	2.25	2.55	2.95	3.10	24%
Malathion, 5 lbs/gal, \$/gal.	9.30	9.30	8.50	8.20	8.30	13.00	15.00	61%
Farm and Motor Supplies, annual average								
Storage batteries, 12v., 66 plates	31.18	32.03	32.75	34.20	40.00	41.03	41.05	32%
Truck tires, 7.00-15, 6 ply	33.98	35.43	35.28	36.13	41.55	42.25	43.15	27%
Baler Twine, May 15, \$/40 lb. bale	7.60	8.00	7.60	8.30	28.00	32.50	16.50	117%

Source: Agricultural Prices, Annual Summaries, Crop Reporting Board, Statistical Reporting Service, United States Department of Agriculture, Washington, D.C.

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is involved in the determination of the amount of payment. The rate of increase is below the average increase for farm expenses.

Other Production Costs

Figure 2 portrays the behavior of prices paid for groups of production items in comparison with PPF. Nearly all of these groups exhibited gradual price increases during 1970 and 1971, then rose rapidly during 1972 to 1974, and since then have leveled off. Many of the expenses are tied to the general energy situation, and others (feed, seed) are tied to the general increase in prices farmers received in 1973 and 1974.

Fertilizer and fertilizing materials made rapid price increases in 1974 and 1975, before declining to lower levels in 1976. Prices of fertilizer increased at an average annual rate of 18 per cent from 1970 to 1976. Favorable crop prices induced large purchases in 1974 and 1975 which had a bullish effect on the price of fertilizer.

Prices paid for seed followed the same general pattern as fertilizer. In North Dakota, for example, spring wheat seed sold for \$2.85 in 1973 and for \$8.30 in 1974. Such prices are easily justified when market prices are relatively high, as was the case. High prices for seed grain are less difficult to cope with, since they are often tied closely to grain prices, and when grown on the same farm are not an actual out-of-pocket expense.

Price increases for several other groups of pro-

duction items do not diverge from the general average of prices as reflected by PPF. However, within each group certain items deviate greatly from the others (See Table 2). Baler twine is an example. The cost of a 40-pound bale in North Dakota increased 428 per cent from 1970 to 1975, increasing from \$7.60 to \$32.50. Prices of livestock feeds spiralled upwards in 1973 and 1974 as did feed grain prices generally because of the massive exports in those years. The price of soybean meal in North Dakota increased from \$126 per ton on June 15, 1972 to \$400 per ton exactly one year later. Not all prices increased that rapidly, however. Many items, including certain pesticides and motor supplies, exhibited modest increases.

Cost-Price Squeeze

A graph of prices received by farmers (PRF) for the 1970 to 1976 time period reveals the cost-price squeeze farmers faced (Figure 3). Prices received for livestock reached a peak in 1973, declined sharply in 1974, and gradually increased in 1975 and 1976. Prices received for crops continued upward until 1974 before beginning to decline. From 1972 through 1975, prices farmers received were rising faster than the general level of prices farmers paid. The index of prices paid and received were equal in 1975. This means that prices paid and received were in the same relationship in 1975 as in 1970. Since 1975, the diverging lines depict the cost-price dilemma as the general level of prices received falls while the level of prices paid rises.