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FARM EQUIPMENT PRICES, MARGINS, AND RELATED MARKETING COSTS

Leland Southard

U.S. Department of Agriculture
Economics, Statistics, and Cooperatives Service

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Farm equipment prices rose 83 percent compared to 65 percent for all production items during 1972-77. Increases in dealer costs, the largest component of prices paid, accounted for 81 percent of the increase, according to data collected from farm equipment dealers. Price increases were particularly sharp during 1973-75, with sale prices increasing 42 percent. Dealer margins were the seccnd largest component of prices paid, accounting for another 12 percent. Dealer margins averaged 14.3 percent of the sale price.

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Washington, D.C. 20250 October 1978

SUMMARY

Farm equipment prices rose 83 percent compared to 65 percent for all production items during 1972-77. Moreover, farm equipment prices increased twice as much as the general price level as measured by the GNP implicit price deflator. This report examines farm equipment dealer costs and profit margins to help understand these rapidly rising prices.

Price increases for farm machinery were particularly sharp during 1973-75, with sale prices increasing 42 percent. About 83 percent of the price increase reflected a 44-percent jump in wholesale prices paid by farm equipment dealers to manufacturers. The sharp increase in manufacturers' prices reflected a surge in demand for equipment and a subsequent shortage of critical materials and certain component parts. Increased sales and prices of farm machinery during 1973-75 suggest a high correlation between levels of farm income and farm equipment demand. Longer range inflationary forces, however, have continued to push prices of farm machinery higher in spite of the decline in farm income and demand since 1974.

Dealer margins, which increased 39 percent during 1973-75, accounted for 12 percent of the rise in farm equipment prices, and reflected increases in the cost of doing business. Dealer margins also appeared to be affected by changes in supply and demand conditions, increasing as a percentage of sales prices from 14.1 percent in 1973 to 14.9 percent in 1974, but declining to 13.8 percent in 1975 as supply increased.

Increases in freight, setup, and delivery charges accounted for the remaining 5 percent of the price increases. Freight charges increased 45 percent due to higher rates, increased weights, and distances hauled; setup and delivery costs went up 34 percent during the period.

Prices paid by dealers to manufacturers (dealer cost) made up the largest component of sales prices, averaging 81 percent for all equipment during the 3-year period, 1973-75. Margins of equipment dealers were the second largest component, averaging 14 percent of the sales price. Freight charges and setup and delivery cost accounted for 3 percent and 2 percent of the selling price, respectively.

Optional equipment was purchased more frequently on large than on small units. In 1975, optional equipment as a percentage of sales price ranged from 13 percent for large tractors to 4 percent for small tractors.

FARM EQUIPMENT PRICES, MARGINS, AND RELATED MARKETING COSTS

by Leland Southard*

INTRODUCTION

Prices paid for farm equipment have been increasing faster than for all farm production items. During 1972-77, farm equipment prices rose 83 percent, while prices for all production items rose 65 percent (table 1). Moreover, farm equipment prices increased twice as much as the general price level as measured by the GNP implicit price deflator (fig. 1).

The rapid rise in farm equipment prices followed sharp increases in farm prices and incomes in 1973 and 1974. Farm prices for all agricultural products rose 54 percent during 1972-74, but have declined slightly since that time, while farm equipment prices continued to rise.

Largely as the result of rising prices, farm equipment expenditures rose from $4.6 billion in 1972 to $7.8 billion in 1977. These expenditures have averaged 10 percent of total production costs. For farm operations such as wheat farming, however, equipment ownership charges account for about one-third of total production costs.

Farm equipment dealer costs and margins were examined to better understand these rapidly rising prices and expenditures. This information may be useful to farmers in discussing purchases with farm machinery dealers, and to the farm equipment industry in developing production and marketing plans. The findings will aid government and university researchers in analyses of the factors associated with higher farm machinery prices.

Data for the study were obtained by surveying 230 farm equipment dealers in 25 leading agricultural States during April-May of 1974, 1975, and 1976 (table 2). These States accounted for about 75 percent of unit sales of tractors over 35 horsepower. The number of dealers surveyed per State was based on the distribution of tractor sales among the 25 States. The respondents were chosen randomly from a commercial list of all farm machinery dealers.

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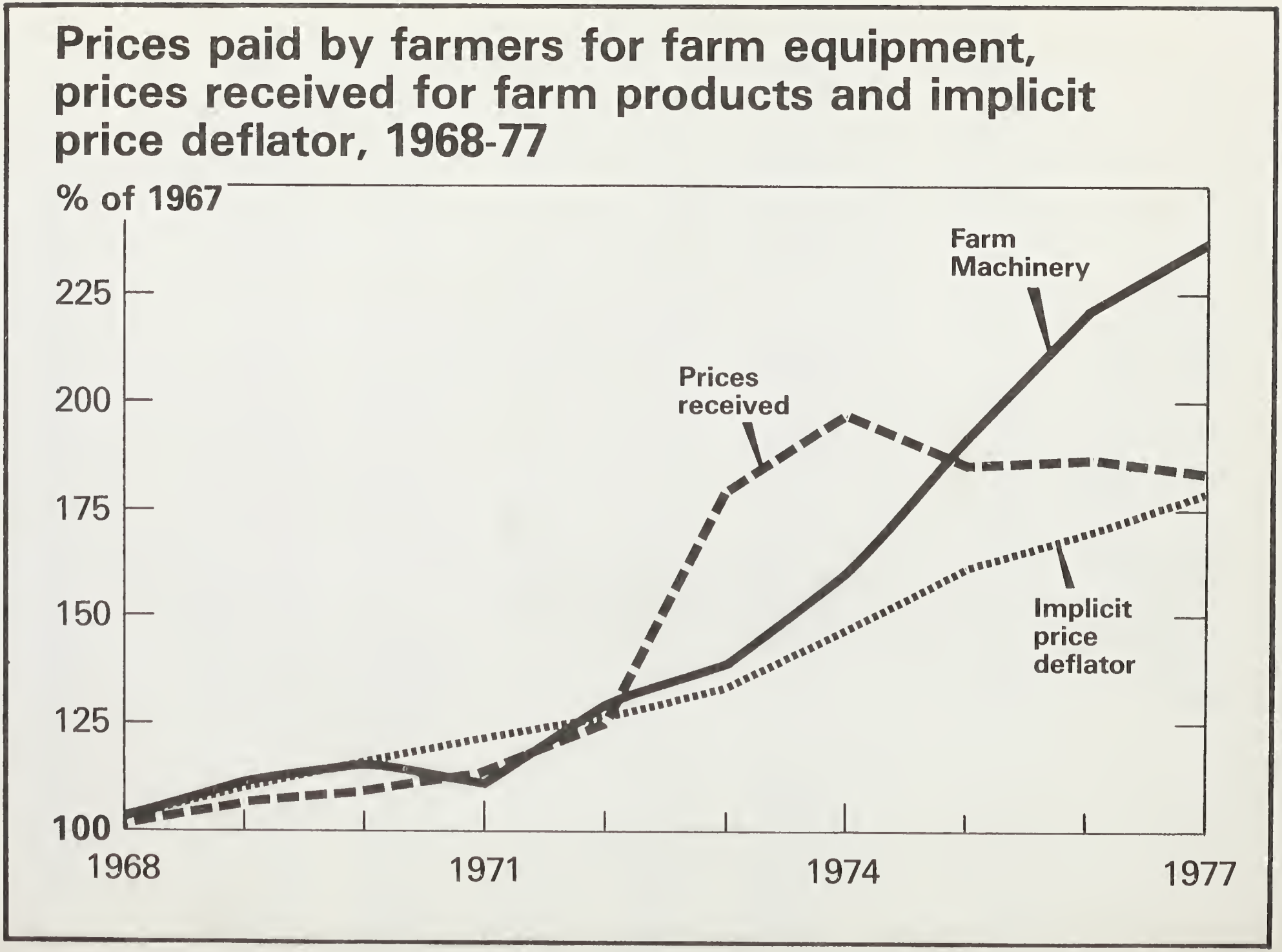
Prices paid by farmers for farm equipment, prices received for farm products and implicit price deflator, 1968-77
% of 1967
225
200
175
150
125
100
1968
1971
1974
1977
Farm Machinery
Prices received
Implicit price deflator

Figure 1.

Table 1--Expenditures for farm equipment and price indexes of farm equipment and all production items, 1972-77

Year	Expenditures			Prices		
	Tractors	Other farm equipment	Total	Tractors and self-propelled equipment	Other equipment	All production items
	Million dollars			1967 = 100		
1972	1,418	3,231	4,649	128	130	121
1973	1,923	4,581	6,504	137	139	146
1974	2,236	4,790	7,026	161	159	166
1975	2,460	4,820	7,280	195	197	182
1976	2,720	4,930	7,650	217	225	193
1977	2,883p	4,880p	1/ 7,763	234	238	200

1/ Preliminary.

Source: Farm Income Statistics, ESCS, 1973-77, for expenditures for farm equipment; Agricultural Prices for indexes. (Both published by the Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture.)

Table 2--Number of respondents per State, farm tractor and equipment price survey, 1973-75

State	Number of respondents
Alabama	6
Arkansas	7
California	6
Georgia	7
Illinois	16
Indiana	11
Iowa	17
Kansas	10
Kentucky	7
Louisiana	5
Michigan	8
Minnesota	14
Mississippi	7
Missouri	11
Nebraska	11
New York	8
North Carolina	9
North Dakota	6
Ohio	11
Oklahoma	6
Pennsylvania	8
Tennessee	7
Texas	17
Virginia	5
Wisconsin	10
25-State total	230

Data were obtained on 5 sizes of tractors, 2 sizes of combines, and 19 other equipment items. Although the enumerators collected data on the last three transactions from the time of the visit, the data probably reflect prices and margins charged during the latter part of calendar years 1973, 1974, and 1975; there may have been a time lag of up to 6 months between the ordering of a tractor or combine and the delivery of the machine to the farm. Data for only 12 other equipment items are reported due to their small incidence of purchases. Dealers were asked to give the following information on the last three transactions:

1. Dealer cost--price paid by the dealer to the manufacturer or wholesaler for the item, including all optional equipment installed at the factory.

2. Suggested retail price--the list price set by the manufacturer, or the manufacturer's suggested retail price, including all factory-installed options but excluding dealer-installed options.

3. Freight charges--transportation charges for moving the item from manufacturer or wholesaler to the dealer.

4. Setup and delivery charges--charges made by dealer to set up and deliver the item to the farm, sometimes known as a dealer preparation charge.

5. Actual sales price--the amount of money paid by the farmer for the item including freight and setup and delivery charges but excluding State sales taxes. If a trade-in were involved, the actual sales price was determined by reducing the suggested retail price by any net overallowance--the difference between the trade-in allowance and the net sales value of the item after it was reconditioned. Following is an example illustrating how the actual sales price was derived when a trade-in was involved.

a.	Retail price of a tractor including all options, freight, and dealer preparation	$15,000
b.	Trade-in allowance	$ 5,000
c.	Purchaser's cash outlay	$10,000
d.	Cost of reconditioning or repair of trade-in	$ 300
e.	Actual or expected sale price of trade-in	$ 3,300
f.	Net expected sale of trade-in (item e minus item d)	$ 3,000
g.	Dealer's net overallowance on trade-in (item b minus item f)	$ 2,000
h.	Actual sale price (item a minus item g)	$13,000

COMPONENTS OF FARM EQUIPMENT PRICE INCREASES

Actual prices paid for farm equipment were broken down into dealer costs, freight charges, setup and delivery charges, and dealer margins to determine the factors responsible for increases in farm machinery prices. Dealer margin equals the difference between the dealer price (what the dealer pays to the manufacturer) and sale price.

Dealer costs, or prices paid to the manufacturer, averaged 81 percent of total retail sales prices for all equipment over the 3-year period. Margins of equipment dealers were the second largest cost component, averaging 14 percent of retail sales prices. Between the two other costs, freight charges averaged 3 percent of selling price, and setup and delivery charges averaged 2 percent over the 3-year period.

Based on the cost data collected from dealers, most of the increase in the selling prices of farm equipment during 1973-75 reflected rising dealer costs. Of the 42-percent increase in actual sales prices, dealer costs accounted for 35 percentage points of the increase; dealer margins, 5 percentage points; and freight and setup and delivery charges for 2 percentage points. Dealer costs for farm equipment increased an average of 44 percent during 1973-75, slightly more than retail sales prices (table 3). Costs for nonpowered equipment rose 51 percent compared to 40 percent for powered equipment. Among equipment purchased, increases in dealer costs ranged from 33 percent for medium tractors to 62 percent for tillage implements.

Dealer margins, representing salaries and commissions of salespersons and other costs of operating a dealership, rose 39 percent during 1973-75--also slightly less than farm equipment prices. Margins on powered equipment rose 43 percent, compared with 34 percent for nonpowered equipment. Increases in margins varied widely among groups ranging from 6 percent for forage equipment to 73 percent for combines.

Table 3--Increase in farm machinery prices, dealer costs, margins, and other charges, 1973-75

Item	Actual sale prices	Dealer costs	Freight charges	Setup and delivery charges	Dealer margins
			Percent		
All farm equipment	41.8	44.2	45.0	33.8	39.3
Powered equipment	40.1	39.9	45.3	30.5	42.7
Small tractors	37.0	41.8	44.7	24.0	11.2
Medium tractors	33.1	33.2	32.5	29.4	32.4
Large tractors	45.2	46.0	67.9	25.5	39.4
Combines	47.4	43.5	52.9	36.6	72.9
Nonpowered equipment	44.6	51.3	44.4	39.2	33.7
Forage equipment	31.5	36.0	47.9	29.3	6.0
Tillage equipment	58.2	62.1	51.7	50.9	42.1
Other equipment	39.6	38.9	32.0	33.7	48.7

Dealer margins for farm equipment declined slightly as a percentage of actual sale prices. In 1975, margins averaged 13.8 percent of sale prices, compared with 14.9 percent in 1974 and 14.1 percent in 1973. Margins on all three tractor sizes and most equipment were slightly lower in 1975 than in 1973 or 1974 (table 4).

Over the 3 years, freight charges for farm equipment increased 44 percent. Increases occurred uniformly on all equipment types (table 5).

Dealer charges for setup and delivery increased 34 percent during 1973-75, the smallest cost increase. Most of the increase occurred during 1973-74 (table 5). Dealer charges for powered equipment increased 31 percent in the 3-year period, compared with 39 percent for nonpowered equipment.

PRICES AND MARKETING COSTS

The survey covered prices and costs for 19 items of powered and nonpowered equipment. The powered equipment included small, medium, and large tractors and combines including cornheads for combines, while the nonpowered equipment included forage, tillage, and other equipment.

Tractors

During 1973-75, tractor prices rose 36 percent, compared to 42 percent for all farm equipment. Price increases ranged from 33 percent for medium tractors to 52 percent for the largest sized tractors (table 6). Stronger demand and a tighter supply along with improved quality largely explain why prices increased more for the largest sized tractors than for others.

Table 4--Farm equipment dealer margins for equipment by group and item, 1973-75

Item	Weight 1/	1973	1974	1975	3-year average
			Percent		
All farm equipment	100	14.1	14.9	13.8	14.3
Powered equipment	62	13.8	14.7	14.0	14.2
Small tractor	15	14.9	12.4	12.2	13.2
35-49 hp	8	14.7	12.9	11.5	13.0
50-69 hp	7	15.2	11.9	13.0	13.4
Medium tractor 70-99 hp	20	13.5	14.1	13.4	13.7
Large tractors	4	14.1	16.8	13.5	14.8
100-129 hp	2	14.8	16.8	13.7	15.1
130 and over hp	2	13.3	16.8	13.3	14.5
Combines	23	13.5	16.3	15.7	15.2
Medium capacity	14	13.2	16.3	15.9	15.1
Large capacity	4	13.4	16.2	15.4	15.0
Cornhead	5	14.2	16.3	15.6	15.4
Nonpowered equipment	38	14.5	15.2	13.4	14.4
Forage equipment	11	16.4	14.2	13.2	14.6
Forage harvester	4	15.8	14.9	14.6	15.1
Haybaler	3	17.8	14.2	12.5	14.8
Mounted mower	3	15.7	13.4	12.6	13.9
Hay rake	1	16.3	14.2	11.6	14.0
Tillage equipment	15	14.8	15.7	13.3	14.6
Moldboard plow	4	14.9	14.7	13.5	14.4
Gang harrow	4	15.4	14.5	12.7	14.2
Corn planter	5	15.2	17.9	13.7	15.6
Cultivator	2	12.3	14.6	12.9	13.3
Other equipment	12	12.8	15.4	13.7	14.0
Manure spreader	2	13.6	16.8	12.6	14.3
Front-end loader	5	13.0	15.3	13.6	14.0
Power forage wagon	5	12.3	15.0	14.1	13.8

1/ Weights were taken from the Indexes of Prices Paid by Farmers, ESCS, with some changes.

Table 5--Indexes of freight charges and setup and delivery charges for farm equipment, by major categories, 1974-75

Item	Freight charges		Setup and delivery charges	
	1974	1975	1974	1975
	1973 = 100			
All farm equipment	122	145	126	134
Powered	120	145	125	131
Nonpowered	125	144	128	139

Most of the increases in tractor prices reflected increases in the manufacturers' prices. Dealer cost increases were about the same as the increases in sales prices. Increases in dealer costs accounted for about 87 percent of tractor price increases.

Dealer margins varied widely among tractor sizes. Margins for small tractors rose an average of 11 percent during 1973-75, which was considerably less than tractor prices and other costs. Dealers may thus have been trying to increase sales of these tractors.

In contrast, dealer margins for the largest sized tractor rose 51 percent during 1973-75, which in part accounted for the relatively large increase in the prices of these tractors. Dealers, faced with strong demand and a tight supply of these tractors, increased their margin by the same percentage that the manufacturers increased their prices.

Increases in freight charges also varied widely among tractor sizes, ranging from 32 percent for medium tractors to 98 percent for the largest size. The relatively large increase for large tractors was due to increases in the weights of these tractors and the average distances shipped from manufacturers to dealers.

Setup and delivery charges increased the most uniform amount among tractor sizes during 1973-75. Increases averaged 27 percent, the smallest rise among the components of sale prices, and only three-fourths as much as tractor prices.

Combines

Sale prices of medium and large combines increased an average of 52 percent during this period (table 7). Dealer costs accounted for about three-fourths the increase, a slightly smaller contribution than to price increases of tractors. An increase of over 80 percent in dealer margins accounted for a fifth of the sale price increase. Dealer margins for combines and cornheads averaged 15.2 percent of sales prices over the 3-year period, or about 2 percentage points higher than for tractors.

Table 6--Average prices and marketing charges for small, medium, and large tractors, 1973-75

Item	1973	1974	1975	Change 1973-75
	Dollars			Percent
Small tractors: 35-49 hp:				
Actual sale price	4,934	5,770	6,808	38
Freight	124	147	180	45
Setup and delivery charges	81	83	99	22
Dealer cost	4,002	4,792	5,749	44
Dealer margin	727	745	780	7
Small tractors: 50-69 hp:				
Actual sale price	7,044	8,346	9,572	36
Freight	143	178	206	44
Setup and delivery charges	92	103	116	26
Dealer cost	5,735	7,070	8,007	40
Dealer margin	1,074	995	1,243	16
Medium tractors: 70-99 hp:				
Actual sale price	10,099	12,162	13,437	33
Freight	194	209	257	32
Setup and delivery charges	109	130	141	29
Dealer cost	8,435	10,107	11,237	33
Dealer margin	1,361	1,716	1,802	32
Large tractors: 100-129 hp:				
Actual sale price	13,289	17,058	18,443	39
Freight	240	271	331	38
Setup and delivery charges	130	148	161	24
Dealer cost	10,951	13,774	15,432	41
Dealer margin	1,968	2,865	2,519	28
Large tractors: 130 and over hp:				
Actual sale price	17,445	23,709	26,444	52
Freight	291	356	576	98
Setup and delivery charges	154	185	196	27
Dealer cost	14,676	19,196	22,167	51
Dealer margin	2,324	3,972	3,505	51

Table 7--Average prices and marketing charges for combines and cornheads, 1973-75

Item	1973	1974	1975	Change 1973-75
	Dollars			Percent
Medium combines:				
Actual sale price	17,420	23,424	25,884	49
Freight	313	391	434	39
Setup and delivery charges	255	365	345	35
Dealer cost	14,531	18,858	20,987	44
Dealer margin	2,303	3,810	4,118	79
Large combines:				
Actual sale price	22,425	31,045	36,676	64
Freight	366	500	601	64
Setup and delivery charges	267	427	406	52
Dealer cost	18,796	25,095	30,005	60
Dealer margin	2,996	5,023	5,664	89
Cornhead:				
Actual sale price	4,866	6,002	6,369	31
Freight	91	132	149	64
Setup and delivery charges	82	103	105	28
Dealer cost	4,001	4,787	5,121	28
Dealer margin	692	980	994	44

Forage Equipment

Prices paid by farmers for forage equipment increased an average of 32 percent during 1973-75, the smallest price increase among subgroups of farm equipment (table 8). Price increases were largest for hay rakes and lowest for forage harvesters. Rising dealer costs accounted for 89 percent of the price increase for forage equipment. Freight, setup, and delivery charges accounted for 7 percent of the increase, and dealer margins for the remaining 4 percent.

Dealer margins for hay balers and hay rakes declined during this period. Margins for forage equipment averaged 14.6 percent of sale prices for the 3 years.

Tillage Equipment

Sales prices of tillage equipment increased an average of 58 percent during 1973-75 (table 9). Dealer costs increased 62 percent and accounted for 83 percent of the price increases. Increases in dealer margins accounted for 11 percent of the sales price increase and other charges for the remaining 6 percent.

Increases in sales prices of corn planters and disk harrows, 1-1/2 times greater than the increases for cultivators and moldboard plows, reflected the relatively greater increases in dealer costs for these first two types of tillage equipment.

Table 8--Average prices and marketing charges for forage equipment, 1973-75

Item	1973	1974	1975	Change 1973-75
	Dollars			Percent
Forage harvester:				
Actual sale price	4,585	5,007	5,716	25
Freight	102	125	140	37
Setup and delivery charges	85	98	107	26
Dealer cost	3,672	4,036	4,637	26
Dealer margin	726	748	832	15
Hay baler:				
Actual sale price	2,898	3,482	3,956	37
Freight	86	116	125	45
Setup and delivery charges	69	79	90	30
Dealer cost	2,227	2,793	3,245	46
Dealer margin	516	494	496	-4
Mounted mower:				
Actual sale price	784	992	1,042	33
Freight	27	39	45	67
Setup and delivery charges	29	37	38	31
Dealer cost	605	783	828	37
Dealer margin	123	133	131	7
Hay rake:				
Actual sale price	826	1,007	1,153	40
Freight	34	42	48	41
Setup and delivery charges	32	34	43	34
Dealer cost	650	788	928	43
Dealer margin	135	143	134	-1

Other Equipment

Sales prices of manure spreaders, front-end loaders, and forage wagons rose an average of 40 percent during 1973-75 (table 10). Increases in dealer costs accounted for 77 percent of the price increase. Margins contributed 16 percent, and other charges the remaining 7 percent.

OPTIONAL EQUIPMENT PURCHASES AND COSTS

The optional equipment bought on tractors and combines varies widely due to weather, crop, and field conditions where the machine will be operated. There are many options and accessories available on these machines to improve performance, protect the operator, and improve working conditions. These include weights, roll bars (a frame to protect the operator), cabs, heaters, and air conditioners.

Table 9--Average prices and marketing charges for tillage equipment, 1973-75

Item	1973	1974	1975	Change 1973-75
	Dollars			Percent
11-13 ft. 3-gang disk harrow:				
Actual sale price	1,749	2,424	2,820	61
Freight	75	86	111	48
Setup and delivery charges	67	98	106	58
Dealer cost	1,337	1,889	2,244	68
Dealer margin	270	351	359	33
5-bottom moldboard plow:				
Actual sale price	2,140	2,859	3,008	41
Freight	74	96	107	45
Setup and delivery charges	71	89	96	35
Dealer cost	1,676	2,254	2,399	43
Dealer margin	319	421	406	27
6-row cultivator:				
Actual sale price	1,465	1,950	2,168	48
Freight	50	72	73	46
Setup and delivery charges	56	92	84	50
Dealer cost	1,179	1,502	1,732	47
Dealer margin	180	284	279	55
6-row corn planter:				
Actual sale price	2,784	4,329	4,848	74
Freight	72	100	117	63
Setup and delivery charges	95	137	150	58
Dealer cost	2,193	3,316	3,919	79
Dealer margin	424	776	662	56

Frequency of Purchase

Overall, survey data show that major options were purchased more frequently on large tractors than on small ones (table 11). Over one-half the large tractors were purchased with weights, compared with a third of the small tractors. Similarly in 1975, three-fourths of the large tractors were purchased with air conditioners as were most large combines, but very few small tractors were purchased with this option.

Purchases of most optional equipment, particularly air conditioners, heaters, cabs for large tractors and combines, and roll bars on the smaller tractors, increased during 1973-75. Auxiliary hydraulic control purchases increased for small tractors but declined for others.

Table 10--Average prices and marketing charges for other equipment, 1973-75

Item	1973	1974	1975	Change 1973-75
	Dollars			Percent
Manure spreader:				
Actual sale price	1,399	1,736	1,999	43
Freight	60	67	88	47
Setup and delivery charges	52	60	68	31
Dealer cost	1,097	1,318	1,592	45
Dealer margin	190	291	251	32
Front-end loader:				
Actual sale price	1,233	1,532	1,765	43
Freight	49	57	65	33
Setup and delivery charges	60	79	82	37
Dealer cost	964	1,161	1,378	43
Dealer margin	160	234	240	50
Power forage wagon:				
Actual sale price	2,298	2,596	3,098	35
Freight	87	92	109	25
Setup and delivery charges	94	87	124	32
Dealer cost	1,834	2,027	2,429	32
Dealer margin	283	390	436	54

Costs

Dealer costs for optional equipment presented here represent average costs of major optional equipment purchased during the survey (table 12). While the combined cost of major optional equipment may account for 15 to 20 percent of a tractor or combine's purchase price, this equipment is not necessarily purchased for all units. Costs of options may also vary, depending on the number and combination of options ordered.

Actual sale prices for this survey were estimated by applying the average markup for each tractor or combine to the dealer cost, since dealer margins on options were not available.

Estimated costs of major options as a percentage of actual sales prices, based on the frequency of purchase and cost of the options, were higher for large tractors than for small tractors. In 1975, these costs averaged 13 percent for large tractors and 4 percent for small tractors.

Optional equipment purchases as a percentage of sale prices averaged 4 percent for large combines and 6 percent for medium combines. During 1973-75, optional equipment purchases as a percentage of purchase prices increased slightly for tractors and combines.

Table 11--Tractor and combine optional equipment purchased as a percentage of units sold, 1973-75

Item and optional equipment	1973	1974	1975
		Percent	
Small tractors: 35-49 hp:			
Power adjusted wheels	27	31	37
Rear weights	21	15	27
Front weights	26	21	29
Auxiliary hydraulic controls	44	55	64
Roll bar	6	11	18
Small tractors: 50-69 hp:			
Power adjusted wheels	41	42	34
Rear weights	34	36	42
Front weights	40	46	49
Auxiliary hydraulic controls	71	74	79
Roll bar	5	12	19
Medium tractors: 70-99 hp:			
Power adjusted wheels	28	36	38
Rear weights	53	49	43
Front weights	72	64	66
Auxiliary hydraulic controls	84	87	79
Roll bar	10	16	22
Cab	33	35	35
Heater	29	32	30
Air conditioner	21	21	21
Dual wheels	15	13	16
Large tractors: 120-129 hp:			
Rear weights	59	59	53
Front weights	78	73	77
Auxiliary hydraulic controls	89	73	77
Cab	60	66	75
Heater	54	66	68
Air conditioner	42	62	64
Dual wheels	33	41	47
Large tractors: 130 and over hp:			
Rear weights	36	49	51
Front weights	65	60	66
Auxiliary hydraulic controls	94	93	79
Cab	81	85	90
Heater	73	82	85
Air conditioner	65	82	85
Dual wheels	51	57	69

Continued--

Table 11--Tractor and combine optional equipment purchased as a percentage of units sold, 1973-75--Continued

Item and optional equipment	1973	1974	1975
		Percent	
Medium combines:			
Floating cutter bar	24	53	50
Automatic header height-control	69	74	60
Heater	69	80	84
Air conditioner	27	47	57
Large combines:			
Floating cutter bar	33	46	52
Automatic header height control	61	64	66
Heater	75	97	88
Air conditioner	50	79	82

Table 12--Dealer costs and actual sale prices of selected optional equipment purchased for tractors and combines, 1973-75

Item and optional equipment	1973		1974		1975	
	Dealer cost	Actual sale price 1/	Dealer cost	Actual sale price 1/	Dealer cost	Actual sale price 1/
	Dollars					
Small tractors: 35-49 hp:						
Power adjusted wheels	103	120	117	134	111	126
Rear weights	76	89	103	118	111	126
Front weights	80	93	103	118	101	114
Auxiliary hydraulic controls	127	148	143	164	164	186
Roll bar	162	189	215	246	235	266
Small tractors: 50-69 hp:						
Power adjusted wheels	105	124	151	171	158	182
Rear weights	91	107	124	141	127	146
Front weights	97	114	127	144	127	146
Auxiliary hydraulic controls	139	164	162	184	173	199
Roll bar	182	215	237	269	237	272
Medium tractors: 70-99 hp:						
Power adjusted wheels	114	132	153	178	169	195
Rear weights	112	129	135	157	154	178
Front weights	126	146	177	206	179	206
Auxiliary hydraulic controls	151	175	183	213	188	217
Roll bar	318	368	289	336	333	384
Cab 2/	1,226	1,417	1,495	1,740	1,680	1,941
Air conditioner	492	569	644	750	661	763
Large tractors: 100-129 hp:						
Rear weights	115	135	183	220	207	240
Front weights	151	177	204	245	221	256
Dual wheels	674	791	801	963	877	1,016
Auxiliary hydraulic controls	170	200	229	275	207	240
Cab 2/	1,308	1,536	1,695	2,037	1,852	2,146
Air conditioner	501	588	639	768	660	765
Large tractors: 130 and over:						
Rear weights	127	146	187	225	238	275
Front weights	161	186	218	262	248	286
Dual wheels	784	904	1,017	1,222	1,102	1,271
Auxiliary hydraulic controls	175	202	235	282	212	245
Cab 2/	1,374	1,584	1,746	2,099	1,908	2,200
Air conditioner	520	600	648	779	658	758
Medium combine:						
Floating cutter bar	704	812	742	887	889	1,057
Automatic header height control	266	307	297	355	341	405
Air conditioner	547	631	688	822	767	912
Large combine:						
Floating cutter bar	640	739	759	905	949	1,122
Automatic header height control	259	299	303	361	359	424
Air conditioner	535	618	648	773	744	879

1/ Actual sale price is estimated by multiplying the dealer cost by the average yearly markup for the particular size of tractor or combine.

2/ Includes enclosed cab, heater, and air conditioner.

FACTORS AFFECTING PRICES AND MARGINS

Prices and margins of farm equipment are influenced by three factors: supply and demand conditions, costs of doing business, and appraisal of trade-ins. The first two factors can be measured quantitatively, while evaluating the third is more subjective.

Supply and Demand Conditions

Farm equipment sales tend to vary according to fluctuating farm income and demand for farm machinery. When farm incomes rise, demand usually increases as farmers replace old equipment (previously postponed due to lack of income) or expand production capacity. In the short run, however, manufacturers are limited in their ability to respond to increases in demand. Plant capacities and the availability of materials and component parts are fixed.

The surge in foreign demand for U.S. agricultural products in 1972 brought higher prices for U.S. farm products. These higher prices brought about a 6-percent increase in cropland acreage in 1973, which in turn required more farm equipment. With increased production, farm income rose. Net realized farm income in the United States, which had ranged between $11 billion and $14 billion in the sixties, rose to $17.8 billion in 1972, and to $29.9 billion the following year. Farm income has since declined from the 1973 record level, but has remained above $20 billion. The demand for farm machinery has likewise remained strong. Production of farm equipment in fact hit record levels in both 1973 and 1974. In 1974, demand was so strong that shipments were held down only by supply constraints. All seven major producers experienced material and component shortages, in some cases severe. Some manufacturers found it necessary to allocate equipment, particularly tractors and combines, to dealers.

The material supply constraints of 1974 inevitably resulted in production cost pressures. The largest cost increases stemmed from rising material prices, particularly for mechanical components and iron and steel parts. The prices of farm equipment increased to cover the higher costs and to provide manufacturers with higher profit margins, according to a study by the Council on Wage and Price Stability. 1/ While these higher profits have brought some expansion in capital expenditure and production capacity of the farm equipment industry, continued upward cost pressures have resulted in higher dealer costs for farm equipment. In view of the expansion in production capacity, however, cost pressures and thus price increases have been milder than those of 1974 and 1975.

Dealer Margins

Increased demand and limited supply lessened competition among dealers, and margins widened in 1974. Dealer margins were the highest in 1974 (14.9 percent) when farm equipment demand increased and the industry was operating at full capacity. Dealer margins in turn declined in 1975 as the supply increased.

Dealer margins were also related to the costs of doing business. As shown by the data obtained from the National Farm and Power Equipment Dealers Association (table 13), the rise in operating margins in 1974 accompanied an increase in operating expenses. Similarily, operating margin and expenses declined in 1975. Margins for repair parts and service labor were more than double the margin for new equipment.

1/ Executive Office of the President, Council on Wage and Price Stability, Report on Prices for Agricultural Machinery and Equipment, May 1976, p. 21.

Table 13--Selected operating averages for all dealers, 1973-75

Year	New equipment margin	Dealer margin 1/		
		Total	Expenses 1/	Net profit 1/
	Percent			
1973	11.53	16.09	12.78	3.31
1974	14.92	17.35	13.61	3.74
1975	13.43	16.22	13.29	2.92

1/ Dealer margins, expenses, and net profits reflect all operations of the firms including the parts and service departments.

Source: Farm Power and Equipment, National Farm and Power Equipment Dealers Association, May issues, 1974-76.

Appraisal of Trade-ins

Since many farm equipment purchases involve trade-ins, the appraised value of trade-ins may significantly raise or lower dealer margins. Competition within a market may largely govern trade-in allowances. If farm equipment dealers are competitive, liberal trade-in allowances may be used to attract new business. However, dealers must realize an adequate margin to maintain satisfactory service, since many farmers consider factors other than price (such as the availability and quality of parts and service) in their buying decisions.

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