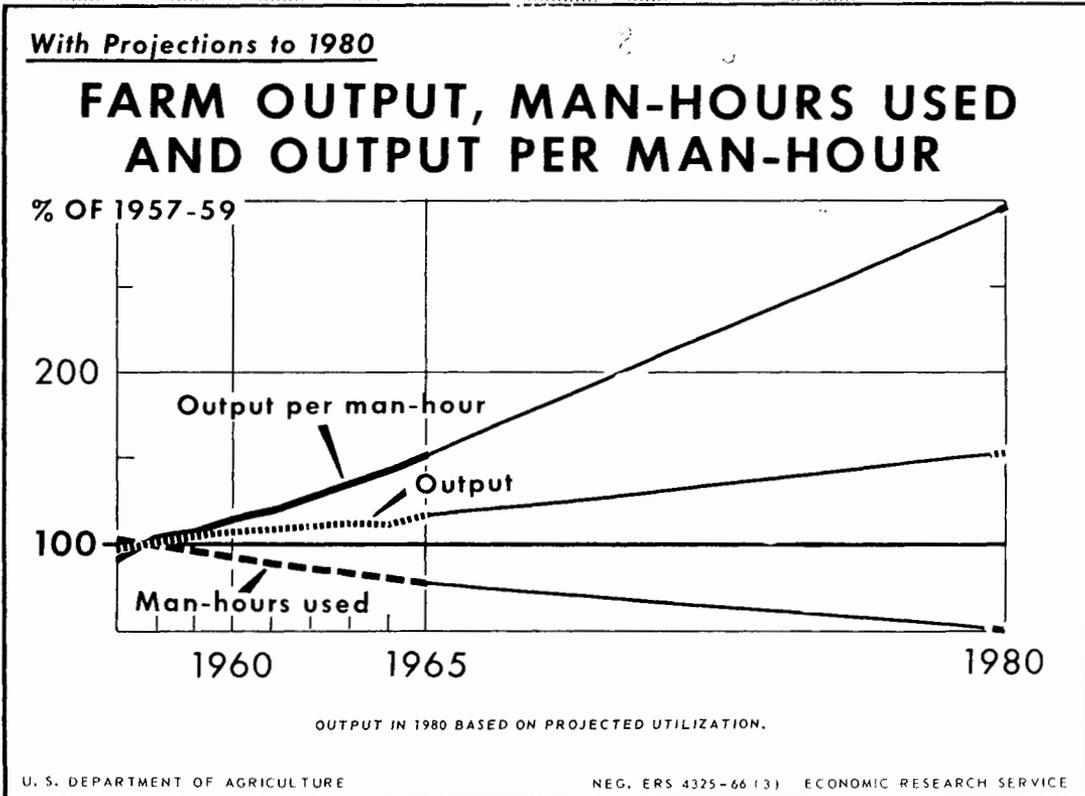


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The FARM COST SITUATION

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One of the outstanding features of U.S. farming in recent years has been the increase in output per man-hour. This increased productivity results from farmers' adoption of new technology and the substitution of other inputs for labor. This trend is likely to continue. One possibility for the future is shown above, based on reasonable assumptions as to population, diets, exports, farm progress, overall economic conditions, and other pertinent factors. If these assumptions materialize, output per man-hour in farming by 1980 would be about three times that of 1957-59.

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Commodities and services used in production: Index numbers of cost rates and prices paid by farmers,
United States, 1950-66

(1957-59=100)

Period	Commodities, interest, taxes, and wage rates	Commodities only	Feed	Live- stock	Motor supplies	Motor vehicles	Farm machinery	Farm supplies	Building and fencing materials	Fertil- izer	Seed	Wage rates
1950-----	89	94	105	113	86	78	78	94	81	94	109	73
1951-----	98	104	118	137	90	83	83	100	89	100	111	81
1952-----	100	104	126	115	91	87	86	106	90	102	125	87
1953-----	95	97	114	83	93	86	87	104	91	103	114	88
1954-----	95	97	113	85	94	86	87	100	90	102	107	88
1955-----	94	96	106	83	95	87	87	98	92	102	114	89
1956-----	95	95	103	77	97	89	91	99	96	100	99	92
1957-----	97	98	101	86	100	96	96	100	99	100	103	96
1958-----	101	101	99	107	100	100	100	100	99	100	101	99
1959-----	102	101	100	107	100	104	104	100	102	100	96	105
1960-----	103	101	97	100	101	102	107	100	102	100	101	109
1961-----	104	101	98	100	102	102	110	101	101	100	100	110
1962-----	106	103	100	104	101	105	111	101	101	100	103	114
1963-----	108	104	104	98	101	109	113	101	101	100	110	116
1964-----	108	103	103	87	101	111	116	102	100	99	109	119
1965-----	111	105	104	96	102	113	119	103	101	100	113	125
Aug.----	112	106	104	98	---	---	---	---	---	---	---	125
Sept.---	112	106	104	99	102	112	121	103	101	100	113	125
Oct.----	112	105	102	99	---	113	---	---	---	---	---	128
Nov.----	112	105	102	98	---	113	---	---	---	---	---	128
Dec.----	112	106	103	101	102	115	121	103	101	100	113	128
1966:												
Jan.----	114	107	105	107	---	---	---	---	---	---	---	127
Feb.----	115	108	107	111	---	---	---	---	---	---	109	127
Mar.----	115	108	105	116	102	117	122	103	102	100	110	127
Apr.----	116	108	105	112	---	---	---	---	---	100	110	138
May----	116	108	106	110	---	---	---	---	---	---	110	138
June----	116	108	106	106	102	118	124	104	103	100	110	138
July---	116	109	110	102	---	---	---	---	---	---	---	135
Aug.----	117	109	111	107	---	---	---	---	---	---	---	135
Sept.---	118	110	113	109	103	117	126	104	103	100	111	135
Oct.----	118	109	112	105	---	118	---	---	---	---	---	140

Source: Statistical Reporting Service, USDA.

THE FARM COST SITUATION

Approved by the Outlook and Situation Board, November 8, 1966

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GENERAL SITUATION

Farm Costs Continue to Increase

The costs of farming, as measured by overall farm production expenses, continued their long-term upward trend in 1966 and probably will be close to 8.0 percent above the \$30.7 billion in 1965 (table 1). This is associated with a decrease in production of about 2 percent. Expenses in 1966 for commodities and services of nonfarm origin are almost 5 percent above 1965, while outlays for farm-produced items--feed, seed, and livestock--are about 14 percent higher. Overhead costs have continued a persistent rise. These higher expenses, however, are being more than offset by sharply increased cash receipts from farming, and realized net farm income for 1966 is estimated to be about \$2.0 billion above the \$14.2 billion of 1965.

The increase in expenses results in part from higher prices for certain production inputs--particularly feeder livestock and feed. Prices paid by farmers moved up slightly for motor and other supplies, and building and fencing materials. Then too, more purchased inputs were used in 1966, contributing to the increase in total farm expenses.

Farm production expenses probably will rise further in 1967 but likely not as much as the increase for 1966. Increases are highly probable in 1967 for taxes, interest, and insurance. Higher expenditures due to increased use are likely for several important production items, including fertilizer and pesticides.

While costs of farm inputs have generally been rising in recent years, at least a part--and in some cases a significant part--of this rise may be attributed to increasing use of, and payment for, production services that formerly were rendered by the farmer or were not available. Farmers may have feed delivered directly into their hog, poultry, or beef feeders. They may have buildings constructed, fences installed, fertilizer applied, and soils tested by the supplier. In addition, these services, as well as the supplies themselves, may be financed by the supplier, who will normally add a financing charge.

Table 1.--Gross farm income, production expenses, net income, and related indexes, specified years, 1950 to 1966 1/

Item	1950-54			1960-64			1966 <u>2/</u>			
	average	average	average	1965	First quarter	Second quarter	Third quarter	Average <u>3/</u>		
	Billion dollars	Billion dollars	Billion dollars	Billion dollars	Billion dollars	Billion dollars	Billion dollars	Billion dollars	Billion dollars	
Cash receipts from farm marketings-----	31.0	35.9	39.2	42.2	42.2	43.0	42.5			
Nonmoney income and Government payments-----	4.2	4.7	5.7	6.2	6.5	6.8	6.5			
Realized gross farm income-----	35.2	40.6	44.9	48.4	48.7	49.8	49.0			
Farm production expenses-----	21.4	28.1	30.7	31.9	32.5	33.8	32.8			
Farmers' realized net income-----	13.8	12.5	14.2	16.5	16.2	16.0	16.2			
Net change in farm inventories-----	.5	.2	1.0	.6	.2	-.5	.1			
Farmers' total net income-----	14.3	12.7	15.2	17.1	16.4	15.5	16.3			
	Index numbers (1957-59=100)									
Volume of farm marketings:										
Livestock and livestock products-----	86	111	118	112	119	121	120			
Crops-----	87	114	120	96	62	121	119			
All farm products-----	86	112	119	105	95	121	120			
Volume of purchased inputs-----	94	108	113	---	---	---	117			
Productivity, or output per unit of total input-----	88	107	112	---	---	---	109			
Prices received by farmers:										
Livestock and livestock products-----	112	96	101	117	111	114	114			
Crops-----	112	104	104	103	107	108	106			
All farm products-----	112	99	102	110	109	112	110			
Prices paid by farmers for commodities used in production, interest, taxes, and wage rates-----	95	106	111	115	116	117	116			
Ratio of prices received to prices paid for production items (including interest, taxes, and wage rates) <u>4/</u> -----	118	93	92	96	94	96	95			

1/ 48-State data.

2/ Dollar figures are seasonally adjusted at annual rates.

3/ Preliminary. Averages of first three quarters for dollar figures and price indexes.

4/ Not to be confused with Parity Ratio, which includes prices paid for items used in family living, and has a 1910-14 base.

For example, if a farmer buys on credit bagged fertilizer, delivered in small amounts as needed during the planting season, he pays more for it than he would if he bought a year's supply for cash off-season in bulk. Similar observations could be made concerning feed, pesticides, or seed. Thus, in measuring the cost of farm inputs, differences in the services received must be considered--both between farmers in any given year and for all farmers over time. Measured in value received, some production supply items--together with the related services--may actually show a relative price decline in recent years.

HIGHLIGHTS

Farm Labor

The national average of all types of cash farm wage rates will average about \$1.03 per hour in 1966. This constitutes a rise of 8 cents from last year--about the same as in 1964-65 but almost 4 times the 1960-64 annual increase. Higher rates can be expected for 1967, partly due to coverage of some farmworkers under the general minimum wage law. Other factors contributing to recent and anticipated increases in farm wage rates include the generally tight labor market and competition from better-paying nonfarm employment opportunities. Higher wage rates have encouraged, and will continue to encourage substitution of capital for labor to reduce both the cost and amount of labor used in farming. Lower acreages of some high labor-using crops this year, particularly cotton, have also helped in this direction. The decline in numbers of farmworkers is expected to continue in 1967 and following years.

Farm Power and Machinery

Increases in prices of farm machinery have ranged from 1 to 4 percent annually over the past 15 years, averaging about 3 percent. During this period, the average annual increase in farm output per man-hour was about 10 percent, and machinery price increases were quite large relative to prices received by farmers for farm products. However, the contribution of mechanical advances to productivity and reduction of labor costs tends to overcome this disparity. Prices of, and demand for, machinery are both likely to increase over the next 4 or 5 years. Suspension of the 7 percent investment tax credit will probably not materially affect farm purchases of machinery.

Fertilizer

Total fertilizer plant nutrient consumption in 1965 amounted to about 8.5 million tons of N,P,K, or about 11 million tons of N, P_2O_5 , and K_2O . This was up about 5 percent over 1964. It appears that 1966 gains will be greater. During the first 7 months of 1966 ammonia nitrogen production was up 24 percent and phosphate fertilizer production was 18 percent over the same period of 1965. Potash supplies were also up. Production capacities for all 3 basic fertilizer materials are increasing. The capacity for anhydrous ammonia (the primary nitrogen source) increased 25 percent in 1965, and is expected to increase about 30 percent in 1966. The outlook is for further substantial increases in fertilizer consumption. For the immediate future increased crop acreages planned for 1967 should give a substantial boost to fertilizer consumption.

Pesticides

The upward trend in the farm use of pesticides continued in 1966. The 1966 increase will probably be somewhat less, however, than in previous years. More pesticides were used for the larger acreages of crops such as soybeans and rice; but this was largely offset by the decrease in cotton acreage, where large amounts of pesticides are used. The use of herbicides, desiccants, and defoliants continues to increase at a more rapid rate than insecticides and fungicides. A large share of the herbicides is being used in areas where pesticides have previously not been used extensively, especially in the Corn Belt. The form in which pesticides are produced continues toward more liquids and granules. For the next several years farm use of pesticides is likely to increase at about the current rate of 15-16 percent annually.

Feed

The feed concentrate supply for the 1966-67 feeding year is estimated at 235 million tons--some 16 million tons below the previous year. With estimated utilization continuing at about 209 million tons stocks are expected to decline further. A tighter supply situation will likely lead to higher average feed prices during the 1966-67 feeding year.

Seed

Prices of seed for 1967 use are expected to average 8 to 10 percent higher than in 1966. Price increases will reflect lower production in 1966 and increasing use of newer varieties which are in short supply.

Feeder and Replacement Livestock

In recent months, prices paid, as well as prices received, for meat animals have been trending downward. However prices paid for feeder and replacement livestock were about 5 percent higher in October 1966, than a year earlier; prices of milk cows were up fully 20 percent. Average prices paid for feeder livestock are expected to continue in the next few months above year-earlier levels and to average higher next year than in 1966.

Taxes

Preliminary estimates of farm real estate tax levies for 1965 totaled \$1,650 million, an increase of 7 percent from 1964. Total farm personal property taxes are estimated at about \$295 million for 1965, up from 1964, but about the same as 1963. The upward trend in real property taxes is a result of increasing revenue requirements of State and local governments. With people demanding more and better governmental services and with rising costs to provide such services, the property tax bill will most likely continue to increase.

Interest

Farmers will pay a record \$2.5 billion in interest for 1966. The increase from 1965 is greater than recent year-to-year changes. Record farm indebtedness and increasing rates of interest charged by lenders combined to push total interest charges to new highs. Non-real-estate and farm mortgage debt each increased about \$2-1/2 billion (about 12 percent) during 1966. Interest rates charged on new loans by institutional

lenders started edging up during the first half of the year. By early fall, rates had increased from 1/2 to 1 percentage point. Funds for farm lending--especially for long-term loans--began to diminish sharply during the summer months. The relative shortage of farm mortgage loan money and higher rates are expected to continue into 1967.

Insurance

Insurance and social security costs (including Medicare) for both farm and family purposes in 1966 will be \$2.3 billion--8 percent above 1965. Higher insurance costs result from larger investments, an increasing awareness of more risks, the ability to pay for more insurance, and rising rates of several types of liability and property insurance and for social security. For the next several years insurance costs will be upward--but perhaps not so sharply as in 1966. A further increase of about 5 percent is projected for 1967.

Farm Real Estate

Farm real estate prices advanced again in 1966, pushing the total value to \$171.1 billion as of March 1, 1966--8 percent above a year earlier. Farm enlargement purchases account for more than half of the purchase of farmland, while complete unit purchases were 9 percent below the 1965 level. Tight credit and higher interest rates have reduced the volume of real estate transferred. Land prices are expected to continue to increase in 1967 although at a less rapid rate.

Farm Service Buildings

Farm service building values in 1966 reached \$15.0 billion, accounting for 8.8 percent of the value of farm real estate. Farm consolidation and technological changes in production have caused rapid obsolescence in farm buildings. Although expenditures per farm for building repair and construction have been increasing, the total of such expenditures has declined since 1952 and probably will continue to decline during the next 3 to 4 years.

Costs by Type of Farm

Preliminary estimates of costs and returns for 1960 on each of 7 types of farms and ranches analyzed indicate that the upward trend in operating expenses and in prices paid for items and services used in farm production generally are continuing. Operating expenses and prices paid in 1966 averaged higher than a year earlier on these 7 types of farms.

FARM LABOR

The sharp drop in number of workers on farms (including operators) that started in 1964 continued in 1966. Employment is expected to average about 5.2 million this year--a decrease of 400,000 workers or about 7 percent from 1965 (table 2). This is about the same size of decrease as in 1964 and 1965, but is significantly greater than the decline for the preceding years. The annual decrease from 1959 to 1963 was about 182,000 workers or 2.8 percent per year. A significant 1966 feature is the fact that hired workers declined proportionately more than family workers.

Table 2.--Labor used on farms, wage rates, and related data, United States, 1940-66 ^{1/}

Year	Farm employment			Man-hours of farmwork	Farm output index (1957-59=100)		Average hourly wage rates	
	Total <u>2/</u>	Family <u>2/</u>	Hired		Total <u>3/</u>	Per man- hour	Farm workers <u>4/</u>	Industrial workers <u>5/</u>
	Thou- sands	Thou- sands	Thou- sands	Millions			Dollars	Dollars
1940-----	10,979	8,300	2,679	20,472	70	36	0.17	0.66
1945-----	10,000	7,881	2,119	18,838	81	46	.48	1.02
1950-----	9,926	7,597	2,329	15,137	86	61	.56	1.44
1951-----	9,546	7,310	2,236	15,222	89	62	.62	1.56
1952-----	9,149	7,005	2,144	14,504	92	68	.66	1.65
1953-----	8,864	6,775	2,089	13,966	93	71	.67	1.74
1954-----	8,651	6,570	2,081	13,310	93	74	.66	1.78
1955-----	8,381	6,345	2,036	12,808	96	80	.68	1.86
1956-----	7,852	5,900	1,952	12,028	97	86	.70	1.95
1957-----	7,600	5,660	1,940	11,059	95	91	.73	2.05
1958-----	7,503	5,521	1,982	10,548	102	103	.76	2.11
1959-----	7,342	5,390	1,952	10,301	103	106	.80	2.19
1960-----	7,057	5,172	1,885	9,825	106	115	.82	2.26
1961-----	6,919	5,029	1,890	9,473	107	120	.83	2.32
1962-----	6,700	4,873	1,827	9,060	108	127	.86	2.39
1963-----	6,518	4,738	1,780	8,820	112	135	.88	2.46
1964-----	6,110	4,506	1,604	8,441	112	142	.90	2.53
1965-----	5,610	4,128	1,482	7,976	115	153	.95	2.61
1966 ^{6/} -----	5,200	3,900	1,300	7,641	113	157	1.03	2.69

^{1/} Data on farm employment and farm wage rates are from the Statistical Reporting Service, USDA.

^{2/} Includes farm operators and members of their families.

^{3/} Net calendar-year production for eventual human use.

^{4/} Composite or hourly equivalent of all types of rates, excluding perquisites.

^{5/} Average hourly earnings of production workers in manufacturing. From the Bureau of Labor Statistics, U.S. Dept. of Labor. Figure for 1966 is average of first 8 months.

^{6/} Preliminary. Estimates of farm output and man-hours based on October 1966 "Crop Production" report and other releases of the Statistical Reporting Service, USDA.

Many things contributed to the reduction in farmworkers this year. Foremost was the greatly reduced acreage of cotton--lowest in nearly 100 years. It resulted chiefly from heavy grower participation in the 35-percent diversion option in the 1966 Upland Cotton Program. In addition, in all parts of the country there was continued consolidation of farms into fewer and larger units that reduced labor needs, particularly for family workers. Greater use of chemical pest controls reduced demand for workers for some operations. Mechanization and other labor-saving methods expanded. Around two-thirds of the tomatoes for processing in California, for example, were mechanically harvested in 1966 compared with a minor proportion 2 years ago.

Changes in farm wage rates also have accelerated. The hourly equivalent of all types of wage rates will average \$1.03 per hour in 1966--8 cents higher than a year earlier (table 3). In 1965, the composite cash rate was \$0.95 per hour which was 5 cents higher than in 1964. From 1960 to 1964, however, the annual growth amounted to only 2 cents per hour.

Table 3.--Farm wage rates: United States, 1950-66^{1/}

Period	Per month		Per week,	Per day,	Per hour		Composite rate per hour ^{3/}
	With	With	without	without	With	Without	
	house	board and room	board or room ^{2/}	board or room ^{2/}	house	board or room	
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
1950-----	121	99	31.00	4.50	0.62	0.69	0.56
1955-----	154	123	38.00	5.30	.74	.82	.68
1960-----	192	149	45.75	6.60	.88	.97	.82
1961-----	195	151	46.50	6.60	.90	.99	.83
1962-----	200	155	47.75	6.90	.92	1.01	.86
1963-----	206	159	48.50	7.10	.94	1.05	.88
1964-----	212	162	49.50	7.30	.97	1.08	.90
1965-----	223	171	51.50	7.60	1.03	1.14	.95
Jan.-----	221	172	50.00	7.30	.97	1.19	1.01
Apr.-----	215	164	50.75	7.30	.93	1.18	.86
July-----	232	171	55.00	7.50	1.07	1.17	.93
Oct.-----	220	172	50.25	8.00	1.16	1.09	.98
1966-----							^{4/} 1.03
Jan.-----	228	178	51.25	7.70	.97	1.24	1.06
Apr.-----	237	180	55.25	8.00	1.01	1.28	.94
July-----	253	184	59.25	8.10	1.15	1.26	1.01
Oct.-----	242	187	55.25	8.80	1.25	1.18	1.07

^{1/} Data from Statistical Reporting Service, USDA. Annual data are weighted average of five quarters.

^{2/} Other rates with house or board and room are omitted but are included in computing composite rates.

^{3/} Hourly equivalent of all types of rates.

^{4/} Estimated.

The greater-than-average increase in 1965-66 resulted from a combination of many interrelated factors.

Farm employers are increasingly in direct competition for workers with nonfarm businesses where hourly earnings are higher. Production workers in manufacturing earned an average of \$2.69 per hour during the first 8 months of 1966--an increase of 8 cents per hour over 1965. Unlike the rapid rise in farm wage rates, this is slightly above the average increase for the last few years.

The farm-nonfarm competition for workers is particularly keen during tight labor market periods such as the present. The overall unemployment rate during the first 3 quarters of this year was lower than in 1965 when it averaged 4.6 percent--lowest since 1957.

Part of the sharp increase in farm wage rates during 1965-66 was associated with the change in public policy which materially restricted the use of foreign workers for seasonal farm jobs. Public Law 78, that provided for the "Mexican Bracero Program," expired at the end of 1964. During that program "adverse effect" wage rates were set for States that

used foreign workers. This was required so that use of foreign workers would not "adversely affect" the wages of domestic workers. These rates remain in effect in 28 States in connection with the admission of workers for seasonal farm jobs under the Immigration and Nationality Act (Public Law 414). They are not minimum rates in the usual sense, but are rates that must be offered and paid to domestic workers by an employer requesting certification for foreign workers. In most of the 28 States, the adverse-effect rates are higher than the 1964 rate per hour without board and room; in 8 States, they are more than 20 cents higher than the 1964 rate. Foreign workers have been admitted to comparatively few States in 1965 and 1966 under the new policy. But in the States where they were imported or their possible use anticipated, the adverse-effect wage rates contributed to the increase in actual rates paid to domestic workers.

The Sugar Act, administered by the Department of Agriculture, provides that "fair and reasonable" minimum wage rates shall be determined by the Secretary for workers employed in producing sugarcane and sugarbeets. Several criteria are used in setting rates, including changes in the cost of living and in the producers' ability to pay. Hourly and piecework minimum rates have increased; thus contributing to the general increase in farm wage rates. The time rates for sugarbeet workers, for example, rose 10 cents per hour in 1966 to \$1.35.

Wage rates for hired farm labor will be higher in 1967. A new factor in the upward pressure is the 1966 amendments to the general minimum wage law (Fair Labor Standards Act). The amendments are complex and for the first time include farmworkers.

Highlights relating to farmworkers are: The minimum wage for covered farmworkers will be \$1.00 per hour beginning February 1, 1967. It will increase to \$1.15 and \$1.30 per hour on February 1, 1968 and February 1, 1969, respectively. The reasonable value of perquisites furnished, as determined by the Secretary of Labor, is included in the computation of minimum wages.

Coverage is extended to most hired farmworkers on farms utilizing 500 or more man-days of hired labor in any calendar quarter of the preceding year. Excluded from the count of man-days and minimum wage coverage are hand-harvest workers employed on an operation customarily paid on a piece rate basis, and who commute daily from a permanent residence to the farm where employed, and who were employed in agriculture less than 13 weeks during the preceding calendar year. Also excluded from minimum wage coverage are workers principally engaged in range production of livestock; their days of work, however, are included in the 500 man-day count. Special provisions are made for the hiring of youth, the handicapped, and full-time students.

It is estimated that the amendments provide coverage for 390,000 hired workers on about 33,000 farms. About 43 percent of the covered farms are in the South, 33 percent in the West, and 24 percent in the North. The impact will vary greatly among States. In 1965, the cash rate for workers paid by the hour, and not receiving board or room, averaged less than \$1.00 per hour in 13 States, all in the South (fig. 1). They ranged from \$1.00 to \$1.14 per hour in 4 States, and from \$1.15 to \$1.29 in 21 States. The latter group forms a belt from northern New England to the 3 northeastern Mountain States. Cash hourly rates averaged \$1.30 or more in 10 States--4 in the Northeast and the other 6 in the western part of the country. These average rates indicate that, in

HOURLY FARM WAGE RATES, 1965*

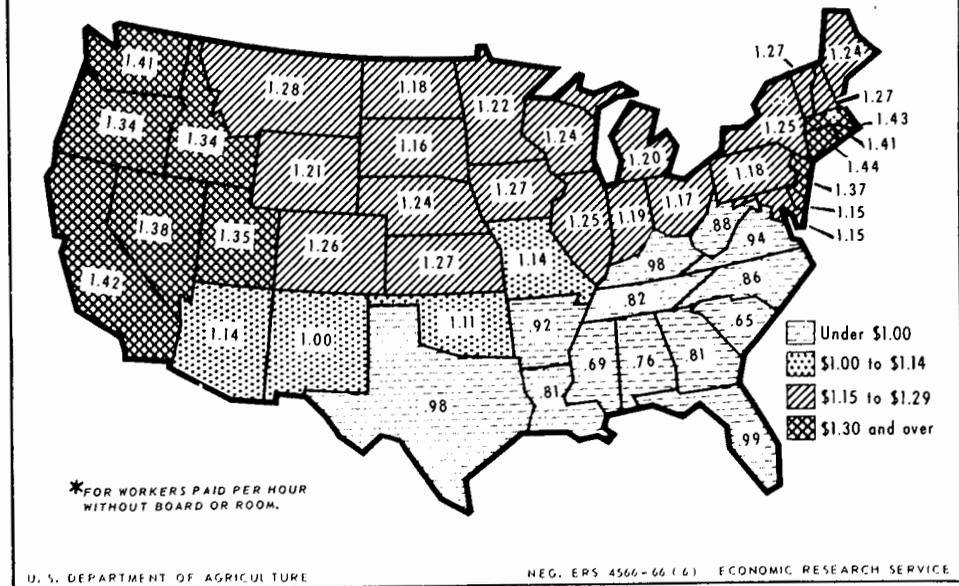


Figure 1

some States, few covered workers are now paid as much as the new minimum. In other States, however, the impact of farmworker coverage will be small.

A relatively minor contributing factor to increased costs of labor in 1967 is the higher Social Security tax on wages. The new rate, including both old-age, survivor and disability insurance, and the hospital insurance feature of "Medicare" is 4.4 percent each for employers and employees. In 1966 the rate was 4.2 percent each.

Because of rising labor costs and limited supply of qualified workers, farmers will continue to substitute labor-saving methods, machines, and other capital inputs for labor. For some mechanized operations, use of rented machines or custom operators is a feasible alternative--particularly on farms too small to justify ownership of machines.

NONFARM INPUTS

Farm Power and Machinery

Since 1950, wholesale prices for farm machines and equipment have increased at an average annual rate of about 3 percent, generally ranging from 1 to 4 percent (table 4). Trends in prices paid by farmers for machinery and motor vehicles have followed a similar pattern. Increases in farm machinery prices have been quite large in relation to prices received by farmers for farm products. However, some of the increase in machinery prices has been due to improvements which make the machines more efficient.

Table 4.--Factors related to costs of farm power and equipment, United States, selected years, 1940-1965 ^{1/}

Year	Index of wholesale prices of machinery and equipment (1957-59=100) ^{2/}	Repairs and operation of motor vehicles and machinery ^{3/}	Total gross farm income, including Government payments ^{3/}	Gross capital expenditures for motor vehicles and other farm machinery ^{3/}	Depreciation of vehicles and equipment ^{3/}	Net investment in motor vehicles and other machinery ^{3/}
	<u>Index</u>	<u>Mil. dols.</u>	<u>Mil. dols.</u>	<u>Mil. dols.</u>	<u>Mil. dols.</u>	<u>Mil. dols.</u>
1940-----	49.7	656	11,340	625	517	108
1945-----	52.6	1,304	25,374	1,198	831	367
1950-----	79.8	2,335	33,083	3,152	1,883	1,269
1951-----	86.6	2,577	38,239	3,321	2,203	1,118
1952-----	87.7	2,760	37,681	2,966	2,421	545
1953-----	88.2	2,801	34,363	3,201	2,517	684
1954-----	88.1	2,782	34,080	2,739	2,575	164
1955-----	88.8	2,861	33,353	2,760	2,625	135
1956-----	92.0	3,042	33,818	2,406	2,710	-304
1957-----	96.3	3,163	34,619	2,512	2,825	-313
1958-----	100.3	3,197	38,736	3,150	2,928	222
1959-----	103.4	3,327	37,560	3,184	3,093	91
1960-----	105.3	3,256	38,257	2,707	3,086	-379
1961-----	107.4	3,158	39,927	2,928	3,049	-121
1962-----	109.5	3,249	41,664	3,054	3,098	-44
1963-----	111.1	3,264	42,683	3,609	3,117	492
1964-----	112.9	3,251	41,491	3,907	3,289	618
1965-----	115.1	3,310	45,893	4,295	3,502	793
1966-----	118.1	---	---	---	---	---

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^{1/} Alaska and Hawaii not included.

^{2/} Bureau of Labor Statistics, U.S. Dept. of Labor. 1966 is average of first 8 months.

^{3/} Farm Income Situation, FIS 203, Economic Research Service, USDA, July 1966, revised.

Farm output per man-hour has increased at a remarkable rate in recent years. Machines have played an important part in this progress. It is taken for granted that field work on farms has been highly mechanized for years. But the degree of mechanization on commercial farms is constantly increasing although the total machinery input on all farms has increased only slightly since 1955. Power inputs, equivalent to those directed by 3, 4, or more men only a few years ago, are now often directed by one man. This team of men and machines, along with other technology, is turning out high quality products in huge volume.

The volume of farm machinery purchases in a particular year is influenced by farm income. But in addition, other factors such as the number and condition of machines on hand are involved.

The inventory of farm equipment (tractors and other machinery) is valued at nearly \$20 billion. It requires extensive maintenance, along with fuel, to operate. Although conclusive information is not available, prices of repair parts may have increased at a slightly faster rate than those of complete machines. Also, as with machines, quality changes in parts make price comparisons difficult. Annual surveys (by the National Farm and Power Equipment Dealers Association) indicate that dealers' margins on machinery parts have declined slightly since 1960. Prices paid by farmers for motor supplies (petroleum fuel, tires, batteries, etc.) have remained almost unchanged, increasing only about 2 percent since 1957.

Prices of, and demand for, power and machinery in the future will continue to be influenced by movements of the general economy. Expanding agricultural production, rising wages and larger farm units are factors which tend to sustain demand for farm machinery. Farm machinery prices for the next 4 or 5 years may continue to rise--perhaps at a little faster rate than during the past 5 years. Manufacturers' labor and materials costs, following general industrial patterns, will be passed on to buyers. Quality and extra features (such as air-conditioned operator's cabs) will have some influence toward higher prices for machinery, but along with other improvements, should lead to greater efficiency in use of manpower.

Another element in the outlook is the suspension of the 7-percent investment tax credit. This will increase farmers' tax liability in 1967 and will reduce after-tax income. However, with higher farm income in 1966 and prospects for another good year in 1967, suspension of the investment tax credit is not expected to materially affect farm purchases of machinery and equipment. However, after 3 years of large capital outlays, machinery and equipment purchases may rise somewhat more slowly in 1967. It is possible, too, that the not-so-urgent needs later in 1967 would be deferred until after the cut-off date for the suspension, January 1968.

Fertilizer

The use of fertilizer continued its upward trend in the United States in 1965, increasing 5 percent over 1964. Total plant nutrient consumption in 1965 was 8.5 million tons of nitrogen (N), phosphorus (P), and potassium (K).^{1/} Of this total, 4.6 million tons were N, 1.5 million

^{1/} Note $P(2.29137)=P_2O_5$ and $K(1.20459)=K_2O$; thus 1965 plant nutrient consumption amounted to about 11 million tons if the units N, P_2O_5 and K_2O are used.

tons were P and 2.4 million tons were K. Preliminary reports indicate that 1966 gains in plant nutrient use will be greater than in 1965. Between 1957-59 and 1965 total plant nutrient consumption was up 67 percent. Nitrogen consumption increased at a faster rate than phosphate or potash. Nitrogen use in 1965 was 6 percent over 1964 and 94 percent over the 1957-59 period.

Supplies of fertilizer were considerably greater in 1966 than in 1965. Ammonia nitrogen production during the first 7 months of 1966 was up about 25 percent, and phosphate fertilizer production was 18 percent over the same period in 1965. Potash supplies were also up. Sulfur, a basic raw material in manufacturing wet-process phosphate fertilizer, was in short supply in 1966. This may slow the trend toward the manufacture of the more concentrated phosphate materials because sulfur requirements per ton of P in the higher analysis ammonium phosphates are more than in normal superphosphate.

While fertilizer consumption is increasing at a moderate rate, capacity for producing the major plant food item (nitrogen) has been expanding at a faster rate in 1965 and 1966. Production capacity for anhydrous ammonia, which accounts for about 90 percent of all nitrogen fertilizer increased 25 percent in 1965 and was expected to go up more than 30 percent in 1966. Early 1966 plans indicated that by 1968 ammonia capacity would double the capacity in existence at the start of 1965. Early 1966 plans expected that by 1968 concentrated superphosphate capacity would be up 30 percent and ammonium phosphate capacity up 25 percent over 1966. However, some of these expansion programs are now behind schedule.

Potash capacity in the U.S. increased more than 15 percent in the last year. However, most new potash capacity is being developed in Canada. Capacity planned or under construction in Canada is 2.5 times the capacity now in operation. About 40 percent of the 1966 U.S. potash supply was expected to come from Canada.

Farm prices of nitrogenous materials in the spring of 1966 were down slightly from the preceding year. Anhydrous ammonia was off \$3 a ton and ammonium nitrate \$2 a ton. Concentrated superphosphate was up about \$2 a ton and normal superphosphate about \$1 a ton. Muriate of potash increased somewhat more than \$1 a ton.

These changes reflect a continuation of the general downward trend in nitrogen prices over the last 10 years. Farm prices of anhydrous ammonia have dropped more than \$50 a ton in the last 10 or 12 years. Potash prices edged higher during the last 5 years.

The increased capacity now under construction for nitrogen fertilizer could exert a downward pressure on prices. This may be partly offset, however, because (1) more fertilizer is being purchased for export under U.S. AID programs, (2) some construction programs are behind schedule, (3) many dealers are offering increased services with fertilizer purchases, and (4) increased crop acreages anticipated for 1967. Current shortages of sulfur probably will continue to boost phosphate prices. Potash prices are likely to remain firm in the immediate future, but may tend to decline in the long run as more of the vast deposits in Canada are developed.

Many farmers are shifting to higher analysis and lower cost fertilizer products. However, more farmers could realize substantial savings

by selecting lower cost materials. For example, in the spring of 1966 anhydrous ammonia was the best nitrogen buy in terms of cost per pound of plant nutrients even after allowing for the fact that custom application is usually required for ammonia. One pound of plant-nutrient nitrogen cost 2.5 times as much if purchased as sodium nitrate rather than as ammonia and 55 percent more if purchased as ammonium nitrate or urea. Farmers buy higher cost plant nutrient products for several reasons including ease of handling, adaptability to certain crop operations, and for agronomic reasons. However, an incomplete understanding of the primary value-determining factor (plant nutrient content) and traditionalism are probably other major reasons why some farmers continue to purchase higher cost products.

As higher rates are applied, other things equal, the return per dollar spent for fertilizer diminishes. Some recent research indicates that it would still be profitable for many individual farmers to increase substantially their current rates of fertilizer application. However, rates used by some farmers, and the average rates for some crops, now approach the economic maximum where the added return per added dollar spent for fertilizer is only \$1.00.

The future outlook is for substantial increases in fertilizer consumption. For the immediate future increased crop acreages anticipated for 1967 should give a substantial boost to fertilizer consumption next year.

Pesticides

Farmers' annual outlays for pesticides increased nearly twice as fast in 1964 and 1965 as during the previous 5-year period. From 1958 to 1963, pesticide expenditures increased at the rate of about 8 percent per year. In 1964 and 1965 they increased at the rate of about 16 percent a year. Expenditures for herbicides alone were up 29 percent in 1965, and accounted for most of the increased use of pesticides. However, herbicides in 1965 still accounted for less than half of all pesticide sales.

The upward trend in the farm use of pesticides continued in 1966. The 1966 increase will probably be somewhat less, however, than in recent years. The use of herbicides, desiccants and defoliant continues to increase at a more rapid rate than insecticides and fungicides. While total expenditures for insect and disease control chemicals are still greater than for herbicides, more acres are now being treated with herbicides than with insecticides. In contrast, only 6 years ago the acreage treated with herbicides was about 60 percent of the acreage treated with insecticides.

A large share of the herbicides is being used in areas where pesticides have previously not been used extensively, especially in the Corn Belt. In the cotton, tobacco, and fruit areas--such as Appalachia, the Southeast, Delta, Southern Plains, and Pacific States--the acreage treated with insecticides still exceeds that treated with herbicides. So far as total use of pesticides is concerned, some increase in 1966 was associated with increased acreage of crops such as soybeans and rice. This was largely offset, however, by decreases in cotton acreages, where large amounts of pesticides are traditionally used.

The form in which pesticides are produced continues toward more liquids and granules. While less than 10 years ago dusts and wettable powders accounted for well over half of all pesticide formulations, today, liquids are the largest single formulation type. Granules, a relatively recent development, now account for about 10 percent of the pesticide market.

Manufacturers' pesticide inventory carryover from 1965 averaged about 10 percent more than in the preceding year. There was considerable variation in the amount of carryover for different chemicals. For example, stocks of the aldrin-toxaphene group in the fall of 1965 were up about 40 percent from the previous year, while DDT stocks were down more than 60 percent. In recent years, manufacturers have produced an average of about 10 percent more than they sold.

Prices of pesticides to farmers have generally been increasing. The prices of several important pesticides, that is, DDT and 2,4,5-T, have increased in the last year. Most increases have, however, been small and the prices of some products that are used widely have remained the same or declined. For example, the price of 2,4-D was less in mid-1966 than it was in 1963. The prices of aldrin, chlordane, dieldrin, endrin, heptachlor, malathion, methyl parathion, methyl bromide and toxaphene remained about the same for the last 4 years. Some of the pesticides which are decreasing in relative importance have increased in price since 1965. Among these are inorganics such as copper sulphate (up 10 percent) and lead arsenate (up 4 percent).

Synthetic organic pesticides (mostly chlorinated hydro-carbons and more recently organic phosphates) now account for around 90 percent of the pesticide production in terms of quantity. These organic chemicals are generally more costly than inorganics. The inorganics such as copper sulfate, calcium arsenate, and lead arsenate were the major weapons for controlling insects and diseases until about 20 years ago. Inorganic chemicals now account for less than 10 percent of the pesticides used in agriculture.

Currently, there are several important innovations in production, distribution, and application of pesticides that should affect future cost to farmers. Mixing pesticides with fertilizer for controlling insects is "catching on" and will likely continue to increase. This innovation should reduce the cost of application because it will require less labor and reduce the machine cost. Pesticide-fertilizer combinations are largely confined to custom mixing because few farmers would apply exactly the same combination of plant nutrients and pesticides per acre.

The increase in the use of granular materials suggest some shifting from liquids, but the primary shift has been and continues to be from dusts to liquids. Both liquid and granular pesticides are generally easier and more pleasant to handle than dusts. Granular forms have the additional advantage for some purposes of not clinging to the foliage; their use reduces residue on edible parts of crops.

Almost certainly farm use of pesticidal materials will continue to increase in the foreseeable future. Recent increases in farm expenditures of 15 to 16 percent a year probably can be maintained for several more years. This is especially so with the increased crop acreages planned for 1967.

Much of the strength in the aggregate demand for pesticides arises from the sharply increasing usage of herbicides. Shortages of labor coupled with high costs of farm operation will no doubt continue to stimulate demand for chemicals that can reduce the costs of cultivating or harvesting. Herbicide sales have been increasing at the rate of 25 to 35 percent a year for several years, and probably will continue at or near this rate for several more years. Insecticide sales have been going up at a much slower rate and an anticipated rate of increase of from 2 to 5 percent a year may be realistic.

Prices of some of the newer pesticides may soften at the manufacturers' level when supply exceeds demand. However, price competition is more likely to take place at the local level as custom operators vie for business.

FARM PRODUCED INPUTS

Feed

During the calendar year 1965 farmers bought an estimated \$5.9 billion of feed. This represented nearly 27 percent of total farm operating expenses. Regionally a larger share of each input dollar was used for feed in the North Atlantic States, but feed purchases in that region were less than 12 percent of the total U.S. farm feed expenditures as shown below.

Region	Feed purchases as percentage of--	
	Farm operating expenses	U.S. total feed purchases
	<u>Percent</u>	<u>Percent</u>
North Atlantic-----	38	11
East North Central----	28	15
West North Central----	27	24
South Central-----	26	18
South Atlantic-----	30	12
Western-----	24	20
United States----	27	100

The feed concentrate supply for the October-September feeding year 1966-67, is estimated at about 235 million tons, some 16 million tons less than a year earlier and 10 million tons less than the 1962-65 average (table 5). The supply includes about 201 million tons of feed grains, 7 percent less than a year ago. Wheat and rye used for feed is expected to total around 2.3 million tons, down about 1.5 million tons from the heavy feeding for the preceding 2 years. Byproduct feed supplies may total 31.5 million tons, up slightly from last year. With grain-consuming animal units up about 3 or 4 percent in 1966-67, the supply of feed concentrates per animal unit is 10 percent below a year earlier.

Table 5.--Supply and utilization of feed concentrates, and livestock fed, United States, 1937-66^{1/}

Year beginning Oct. 1	Supply				Utilization			Stocks of feed of grains, end of year ^{4/}	Number of grain-consuming animal units	Per grain-consuming animal unit		
	Stocks of feed grains beginning of year	Production of feed grains ^{2/}	Other feed concentrates ^{3/}	Total supply	Seed, human food, industry, and export	Concentrates fed to live stock ^{2/}	Mil. tons			Millions	Tons	Supply of feed grains
	Mil. tons	Mil. tons	Mil. tons	Mil. tons	Mil. tons	Mil. tons	Mil. tons	Millions	Tons	Tons	Tons	
Average:												
1937-41----	16.9	92.2	19.9	129.0	12.1	97.9	19.9	153.1	0.60	0.84	0.64	
1942-46----	14.7	109.2	29.4	153.3	14.8	124.9	13.5	176.9	.62	.89	.71	
1947-51----	22.2	108.8	25.5	156.5	17.1	115.9	23.5	162.2	.67	.96	.71	
1952-56----	32.2	114.7	27.1	174.0	18.4	117.7	38.0	160.7	.71	1.08	.73	
1957-61----	66.9	144.5	29.7	241.1	26.1	143.3	71.5	166.0	.87	1.45	.86	
1962-65----	60.7	151.2	33.5	245.4	37.6	156.2	53.0	171.6	.88	1.43	.91	
1952-----	20.1	111.0	27.9	159.0	16.9	114.0	27.0	158.9	.70	1.00	.72	
1953-----	27.0	108.3	27.8	163.1	16.0	116.6	31.7	156.9	.69	1.04	.74	
1954-----	31.7	114.1	26.0	171.8	18.5	116.2	39.1	161.6	.71	1.06	.72	
1955-----	39.1	120.8	26.9	186.8	20.6	121.9	43.2	165.3	.73	1.13	.74	
1956-----	43.2	119.3	27.0	189.5	19.9	119.7	48.8	160.9	.74	1.18	.74	
1957-----	48.8	132.4	28.4	209.6	22.9	129.0	59.0	159.9	.83	1.31	.81	
1958-----	59.0	144.1	29.2	232.3	25.8	139.5	67.5	167.7	.86	1.39	.83	
1959-----	67.5	149.6	29.4	246.5	25.2	144.7	74.6	165.7	.90	1.49	.87	
1960-----	74.6	155.6	30.2	260.4	25.4	150.3	84.7	167.6	.93	1.55	.90	
1961-----	84.7	140.6	31.1	256.4	31.1	152.9	71.8	169.0	.83	1.52	.90	
1962-----	71.8	142.9	31.4	246.1	30.3	152.0	63.9	172.8	.83	1.42	.88	
1963-----	63.9	156.4	32.3	252.6	32.9	151.2	69.2	172.3	.91	1.47	.88	
1964-----	69.2	137.9	34.2	241.3	36.4	148.6	55.6	167.7	.82	1.44	.89	
1965 ^{5/} -----	55.6	160.7	35.1	251.4	43.8	164.5	43.0	169.2	.95	1.49	.97	
1966 ^{6/} -----	43.0	157.9	34.3	235.2	44.5	164.6	26.0	176.0	.90	1.34	.94	

^{1/} Grain and Feed Statistics, U.S. Department of Agriculture, Economic Research Service.

^{2/} Includes corn for grain. Omits seeds and corn for silage and other forage purposes.

^{3/} Includes byproduct feeds, imported grains, and domestic wheat and rye fed.

^{4/} Stocks do not necessarily equal supply less feed and other utilization because of a difference in the crop year for different feed grains.

^{5/} Preliminary.

^{6/} Preliminary estimates based on indications in October 1966.

Prices for feed grains are being influenced by a strong domestic and export demand. With feed grain supplies 7 percent below the 1965-66 level, feed grain prices during the coming year are expected to be higher. About 164.6 million tons of concentrates may be fed in 1966-67, about the same as last year. Carryover of feed grains into 1967-68 will be influenced by the present high level of domestic and foreign demand. Indications in October 1966 are that the carryover into 1967-68 may be the smallest since the early 1950's.

Current production of the 4 feed grains, based on October 1 indications, is expected to be nearly 158 million tons, about 3 million less than a year ago. Production of corn was down 2 percent, oats were off 12 percent, and barley 5 percent. Sorghum grains increased 9 percent.

Estimated supplies for 1966-67 of each of the 4 feed grains compared with a year earlier are as follows: Corn about 139 million tons, 7 percent less; sorghum grains at 31 million tons, or 11 percent less; oats at 19 million tons or 5 percent less; barley 12 million tons or 1 percent less.

Hay supplies in 1966 will total 117 million tons, 8 million tons below the previous years but 1 percent above average. Drought conditions in the New England and the Mid-Atlantic States have cut hay production for the third consecutive year. Other areas maintained production levels nearly equal to, or slightly in excess of, the previous year.

About 17.5 million tons of high protein feed (in terms of 44 percent soybean meal equivalent) were fed to livestock and poultry in the feeding year 1965-66, about 1 million tons more than were fed in each of the 2 preceding years. With the harvesting of a record soybean crop now predicted, the amount of soybean meal available for livestock is likely to be somewhat greater than a year earlier. About 18 million tons of high protein feed is estimated to be available for the 1966-67 feeding year. With the reduced cotton acreage for 1966, supplies of cottonseed meal during 1966-67 will be considerably below the previous year. However, soybean meal production should be sufficient to offset the reduced cottonseed meal supplies.

High protein corn is one of the currently most promising developments in livestock feed. Researchers have identified genes that raise the level of lysine and other essential amino acids in corn. They have then developed corn that contains its own high quality protein. Full evolution of high-protein corn as a factor in the feed supply will require further testing, but it may become as significant an advance as hybrid corn was in the 1930's.

Use of urea as a feed supplement to replace high protein feeds, and thus to reduce costs for cattle and sheep feeds is now quite general. Preliminary analysis of data from surveys conducted by the USDA would indicate that from one-fourth to one-third of a million tons of synthetic urea--equivalent to about 1-1/3 to 1-3/4 million tons of soybean meal--were fed during the feeding year 1965-66.

Prices received by farmers for feed grains in 1966-67 probably will average well above a year earlier, given continued strong domestic demand and our current international commitments. On October 15, 1966, sorghum grain prices averaged \$1.77 per hundredweight, 2 percent above a year earlier, while corn was \$1.29 per bushel, about 22 percent more than last

year (table 6). Oat prices were 6 percent above last year and barley prices were up 7 percent.

Farmers paid \$5.73 per hundredweight for 44 percent soybean meal on October 15, 1966, compared with \$5.01 a year ago and \$4.86 2 years ago. On October 15, 1966, prices paid by farmers for commercial formula feeds were 7 percent above a year earlier. Prices of cottonseed meal were up 20 percent from the same period of a year ago. Bran prices were 10 percent over a year earlier and middlings about 12 percent. The price of baled alfalfa hay was \$34.00 per ton or 7 percent above last year.

The number of high protein animal units--animal units weighted by consumption of high protein feeds--in 1966-67 is currently estimated to be 153.6 million, up nearly 4.4 percent from the last year. Based on these early prospects the quantity of protein feeds available per animal unit would total about 233 pounds, 1 percent below the quantity available in 1965-66.

Feed inputs per unit of livestock production for the feeding years 1940-65 are shown in figure 2. These estimates show increases from 1964-65 to 1965-66 in feed inputs per production unit for grain-fed cattle, hogs, turkeys, chickens raised, and broilers. The feed input per unit remained about the same for sheep, milk, and "other" cattle. Feed input for eggs declined significantly. Although feed conversion ratios are sometimes used as measures of efficiency in livestock enterprises, the costs of many other inputs are also important in determining the most profitable combination of resources in each feeding operation.

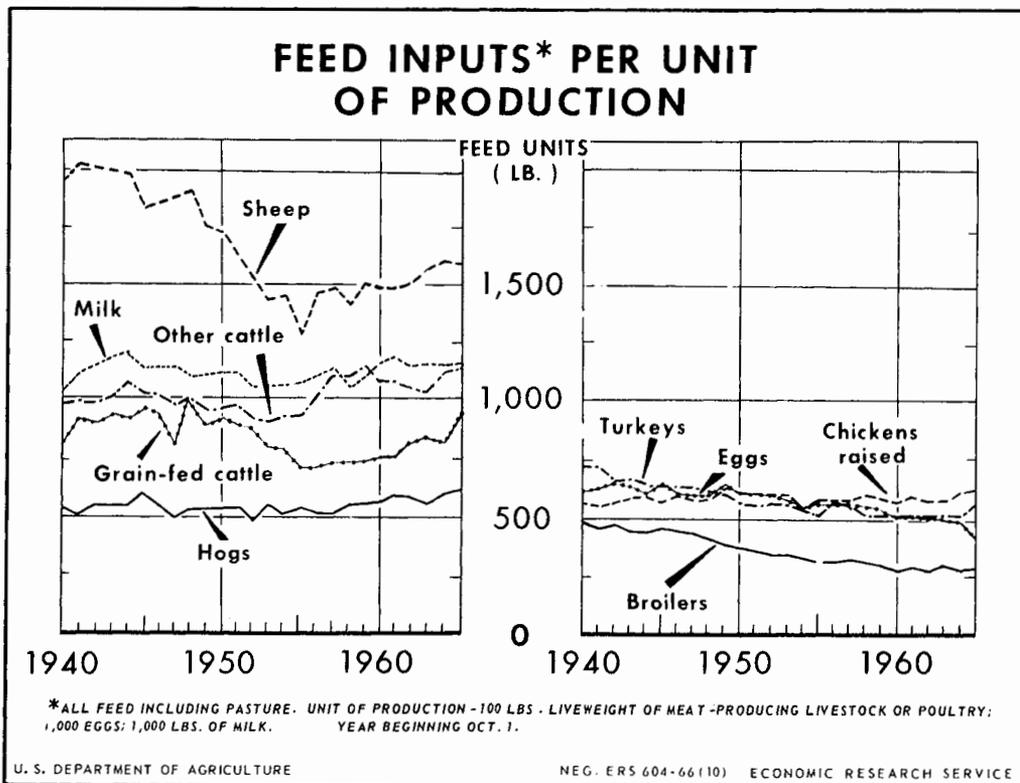


Figure 2

Table 6.--Average prices of selected feeds, United States, Oct. 15, 1964-66

Item	Unit	1964	1965	1966 <u>1/</u>	Percentage change from 1965 to 1966
		Dollars	Dollars	Dollars	Percent
Prices received by farmers:					
Corn-----	Bushel	1.10	1.06	1.29	22
Oats-----	do.	.62	.62	.66	6
Barley-----	do.	.94	.99	1.06	7
Sorghum grain-----	Cwt.	1.86	1.74	1.77	2
Hay, baled-----	Ton	22.90	22.80	24.10	6
Prices paid by farmers:					
Mixed dairy feed, 16 percent protein-----	Cwt.	3.70	3.71	3.96	7
Laying feed-----	do.	4.37	4.40	4.70	7
Broiler grower feed-----	do.	4.79	4.83	5.16	7
Cottonseed meal, 41 percent protein-----	do.	4.41	4.41	5.31	20
Soybean meal, 44 percent protein-----	do.	4.86	5.01	5.73	14
Bran-----	do.	3.08	3.19	3.51	10
Middlings-----	do.	3.16	3.27	3.66	12
Alfalfa hay, baled-----	Ton	32.20	31.80	34.00	7
Average value of concentrate ration fed to poultry and milk cows: <u>2/</u>					
Fed to poultry-----	Cwt.	3.43	3.39	3.68	9
Fed to milk cows, in milk-selling areas--	do.	3.01	3.02	3.21	6
Fed to milk cows, cream-selling areas----	do.	2.52	2.57	2.80	9

1/ Preliminary.

2/ Value of corn, oats, oilmeal, millfeed, commercial mixed feed, and so on, which makes up 100 pounds of "grain" ration.

Source: Statistical Reporting Service, USDA.

Calculated returns from livestock enterprises per dollar of feed cost, based on October 15 prices, show that from 1965 to 1966 returns from eggs, milk, and butterfat increased 2, 12, and 17 percent, respectively (table 7). Gross returns per dollar of feed costs for broilers were down 12.5 percent; hogs down 23 percent; and sheep raising down 4 percent. Beef-raising returns declined 2 percent from a year earlier.

Seed

Farm expenditures for seed are estimated at \$600 million in 1965. As they have for some years, they continue to represent about 3 percent of current farm operating expenses. Seed purchases were up \$50 million, or 9 percent in 1965 over the preceding year. This compares with a 4-percent increase in all operating expenses. Increased seed expenditures accounted for about 8 percent of the total increase in operating expenses.

Prices paid by farmers for most seeds used in fall planting of grain, winter cover crops, legumes, and grasses were higher in September 1966 than a year earlier (table 8).

The total 1966 inventories of field seeds (as of June 30) declined 3 percent from the level of a year earlier and about 1 percent from the 1959-63 average. Stocks of winter cover crop seeds were 21 percent below 1965 while those of grass seeds (excluding ryegrass) were 19 percent larger. Field seed carryover this year was smaller for 20 crops, larger for 20 crops, and the same for 1 crop. The largest gains were reported for lespediza, other vetch, and red fescue. Increases were also reported for alsike clover, birdsfoot trefoil, timothy, redtop, chewings fescue, meadow fescue, wheatgrass, and sudangrass. The largest declines in carryover stocks (exceeding 30 percent) were for some alfalfa varieties, crimson clover, common vetch, Austrian winter peas, smooth brome grass, mixed ryegrass, and dallisgrass.

With carryover stocks and production for many field seeds below last year's levels--available supplies will be considerably lower and prices will be generally strong for the crop year, 1966-67. Exceptions to the reduced seed supply situation are hairy vetch, timothy, some of the fescues, and bluegrass because of increased production in 1966.

Feeder and Replacement Livestock

During the 12 months ending October 1966, the index of prices paid for feeder and replacement livestock rose 18 percent from a low point last November to its highest level in March (table 9); since then, prices have receded about 9 percent. Prices paid for feeder cattle and calves traced a similar pattern. Prices paid for milk cows have risen consistently since last October, and in October 1966, they were up 21 percent from a year earlier. Prices paid for feeder lambs also rose nearly 25 percent from a low point last October to a January-February high of \$25.80 per hundredweight, but since then they have declined almost to the level of a year ago. Prices paid for feeder pigs rose to an average of \$46.40 per hundredweight last January-February; by October they declined about 19 percent, but still were 5 percent higher than a year earlier. Prices of baby chicks and turkey poults were at their seasonal highs in the spring, and at their seasonal lows in the fall with little change from a year earlier. Prices of started pullets changed very little during the year.

Table 7.--Gross returns from livestock enterprises per \$1.00 of feed costs, United States, based on Oct. 15 prices, 1957-59 average and 1964-66 1/

Livestock enterprise or product	Gross return per \$1.00 of feed cost				Percentage change from 1965 to 1966
	Average 1957-59	1964	1965	1966	
	Dollars	Dollars	Dollars	Dollars	Percent
Eggs-----	1.64	1.45	1.56	1.59	2
Broilers-----	1.18	1.20	1.17	1.03	-12
Turkeys-----	1.43	1.32	1.39	1.37	-1
Milk-----	2.34	2.05	2.08	2.33	12
Butterfat-----	1.55	1.28	1.25	1.46	17
Hogs-----	1.87	1.64	2.56	1.96	-23
Sheep raising----	1.54	1.39	1.45	1.39	-4
Beef raising----	2.33	1.75	2.01	1.97	-2
	Index numbers (1957-59=100)				
Eggs-----	100	88	95	97	---
Broilers-----	100	102	99	87	---
Turkeys-----	100	92	97	96	---
Milk-----	100	88	89	100	---
Butterfat-----	100	83	81	94	---
Hogs-----	100	88	137	105	---
Sheep raising----	100	90	94	90	---
Beef raising----	100	75	86	85	---

1/ The following quantities of feed were used to calculate the cost of feed:

Eggs (per dozen)----- 7 lbs. poultry ration
 Broilers (per lb.)----- 2.5 lbs. broiler mash
 Turkeys (per lb.)----- 4.5 lbs. poultry ration
 Milk (per cwt.)----- 31 lbs. concentrates and 110 lbs. hay
 Butterfat (per lb.)----- 7.75 lbs. concentrates and 27 lbs. hay
 Hogs (per cwt.)----- 7.5 bu. corn and 20 lbs. soybean meal
 Sheep raising (per cwt.)-- 2 bu. corn and 1,500 lbs. hay
 Beef raising (per cwt.)--- 3 bu. corn and 600 lbs. hay

To estimate costs of all harvested forages and pasture in the above quantities of feed, feeds from these sources were converted into hay equivalent and the price received by farmers for "all hay" was applied. Feed nutrients from pasture were assumed to cost one-fourth as much as the nutrients in hay. About one-third of the feed consumed by sheep is used in the production of wool. During the period 1957-65, the quantities of broiler mash used to calculate the broiler feed costs were: 1957-60, 2.8 pounds; 1961, 2.6 pounds; 1962-65, 2.5 pounds. During the same period, the quantities of poultry ration used to calculate turkey feed costs were: 1957-60, 4.75 pounds; 1961-65, 4.5 pounds.

Table 8.--Prices paid by farmers for field seeds, United States, Sept. 15, 1966, with percentage comparisons for selected years

Item and unit	Prices paid Sept. 15 ^{1/}			Prices paid Sept. 15, 1966 as a percentage of--	
	1966	1965	1959-63	1965	1959-63
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Percent</u>	<u>Percent</u>
Alfalfa, uncertified varieties, per 100 pounds--	47.70	40.80	43.40	117	110
Alfalfa, certified varieties, per 100 pounds--	57.80	54.80	52.70	105	110
Clover, red, per 100 pounds	40.70	39.90	44.40	102	92
Clover, alsike, per 100 pounds-----	33.70	36.00	33.70	94	100
Clover, white, per pound---	.817	.754	.931	108	88
Clover, Ladino, per pound---	.831	.856	.892	---	---
Clover, crimson, Common per 100 pounds-----	31.20	27.00	26.90	116	116
Clover, crimson, Reseeding, per 100 pounds-----	32.90	30.60	29.70	108	111
Timothy, per 100 pounds----	27.30	30.90	20.90	88	131
Orchardgrass, per 100 pounds-----	36.00	36.70	37.60	98	96
Redtop, per pound-----	.729	.723	.496	101	147
Bluegrass, Kentucky, per pound-----	.655	.620	.628	106	104
Bromegrass, smooth, per 100 pounds-----	28.10	24.90	26.60	113	106
Wheatgrass, crested, per 100 pounds-----	42.50	30.40	34.90	140	122
Fescue, tall, per 100 pounds-----	18.70	20.00	26.60	94	70
Ryegrass, annual, per 100 pounds-----	9.82	9.81	10.50	100	94
Ryegrass, perennial, per 100 pounds-----	23.10	19.20	18.60	120	124
Peas, Austrian winter, per 100 pounds-----	7.72	7.64	7.50	101	103
Peas, wild winter, per 100 pounds-----	10.50	12.50	12.30	84	85
Vetch, hairy, per 100 pounds-----	20.00	23.60	18.20	85	110
Vetch, common, per 100 pounds-----	11.30	11.90	11.70	95	97
Lupine, blue, per 100 pounds-----	8.12	6.06	6.32	134	128
Lupine, sweet, per 100 pounds-----	11.00	7.55	8.84	146	124
Seed wheat, per bushel-----	2.93	2.36	2.87	124	102
Seed oats, per bushel-----	1.63	1.58	1.54	103	106
Seed barley, per bushel----	2.12	2.00	2.00	106	106
Seed rye, per bushel-----	2.51	2.26	2.28	111	110

^{1/} Data from Statistical Reporting Service, USDA.

Table 9.--Feeder and replacement livestock: Prices paid by farmers, United States, high and low months in year ending October 1966

Commodity and unit	High month		Low month		October 1966
	Month	Price	Month	Price	
		<u>Dollars</u>		<u>Dollars</u>	<u>Dollars</u>
Cattle and calves, per cwt.-----	March '66	26.90	November '65	22.90	24.70
Lambs, per cwt.-----	Jan.-Feb. '66	25.80	July '66	20.30	21.80
Feeder pigs, per cwt.-----	Jan.-Feb. '66	46.40	October '65	35.80	37.60
Baby chicks, per 100-----	April '66	14.50	December '65	11.40	11.90
Turkey, poults, per 100-----	June '66	61.60	October '66	52.00	52.00
Started pullets, each-----	Oct.-Dec. '65	1.70	May-Oct. '66	1.67	1.67
Milk cows, per head-----	October '66	260.00	October '65	214.00	260.00
All livestock, index (1910-14=100)-----	March '66	413	November '65	351	375

Source: Agricultural Prices, Statistical Reporting Service, USDA.

Prices farmers will pay for feeder cattle are expected to continue strong and to average well above year-earlier levels.

The number of feeder cattle available this fall probably will be somewhat smaller than a year ago. The number of steers, calves, and heifers, other than those kept for milk, on farms January 1, 1966, was about 2 percent larger than a year earlier. However, this larger supply was about offset by a decrease in the number of calves born this year. Furthermore, the number of cattle slaughtered under Federal inspection in the first 8 months this year was 3 percent larger than a year earlier.

Cattle placed on feed in the first 9 months of 1966 numbered 12 percent greater than a year earlier in the 32 major feeding States. Shipments of stocker and feeder cattle into the 8 North Central States in the first 9 months this year were 19 percent higher than in the comparable period of 1965; during September, however, they were about the same as a year earlier.

Demand for cattle to put on pasture this fall may not be as strong as a year ago. Range conditions in the 17 Western States on October 1 averaged somewhat poorer than a year earlier. Also the acreage of volunteer wheat pasture from 1966 harvested wheat is lower than a year ago. However, most of the Southern Plains area received good rains, and with favorable fall weather, the condition of wheat pasture in the area has improved; and more of the wheat acreage was being used for pasture in the middle of October compared with a year earlier.

Prices paid for all feeder steers at Kansas City in October averaged about \$2 per hundredweight higher than a year earlier. At the same time prices received for choice fed steers in Chicago averaged about \$1 per hundredweight lower, thus cutting the spread between current prices received for fat cattle and those paid for feeders from about \$4 per hundredweight a year ago to less than \$1 in October this year (fig. 3).

Another measure of the price margin is the price received for choice fed steers at Chicago compared with the price paid for feeder steers in Kansas City 7 months earlier. On this basis, the margin has narrowed from about \$5.50 per hundredweight in October 1965 to a negative value of about \$2.00 in October this year. That margin was reduced sharply from September 1965 to January 1966, but then widened to \$6.25 with the sharp rise in fed cattle prices in March. Last spring's higher prices for fed cattle also pulled up prices of feeders, and these higher priced feeders will be coming to market this fall. This squeeze will put downward pressure on the prices of feeder cattle. Higher prices for feed this fall also will cause feeders to be restrained in their bidding for feeder cattle.

Supplies of feeder pigs are larger this fall than a year ago. According to farmers' intentions in June, the number of sows to farrow from June to November 1966, will be 10 percent larger than a year earlier. However, data for the 10 North Central States indicate that this increase may not be attained. In June, the 10 States reported intentions of an 8 percent increase; by September 1 the increase for the June-August period was reported as 8 percent, but the increase in intentions for the September-November period was only 6 percent.

However, supplies of feeder pigs will be larger than last fall and prices probably will stay near present levels.

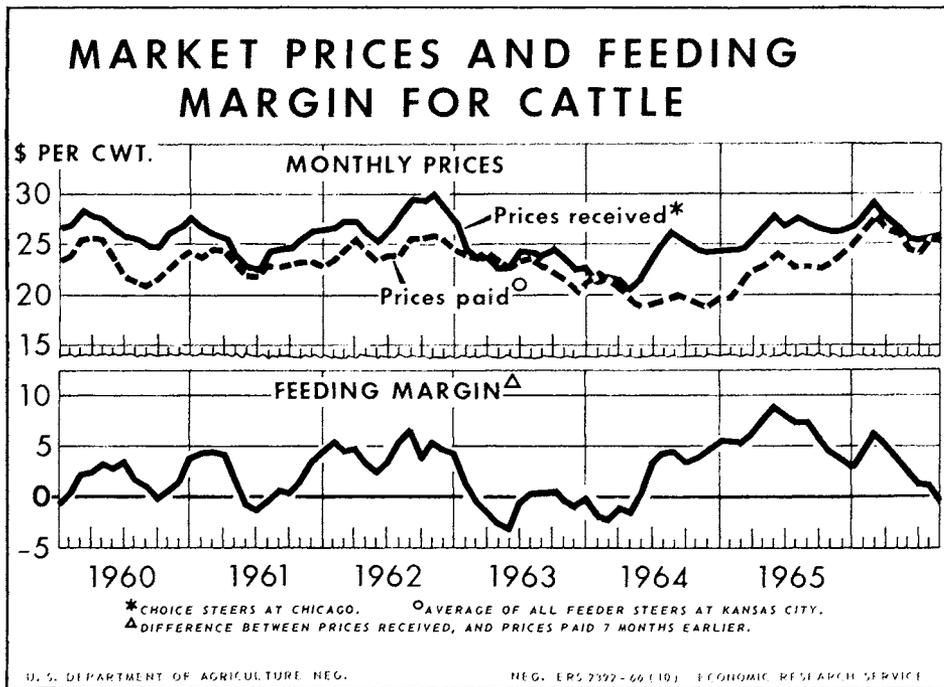


Figure 3

The 1966 lamb crop is about 1 percent smaller than a year earlier, and the number of sheep and lambs slaughtered under Federal inspection from January through October this year is down about 1 percent from a year earlier. Unless farmers and ranchers hold back more ewe lambs to add to their breeding flocks, the number available for feeding will be about the same this fall compared with a year ago. Thus prices of feeder lambs are expected to average near year-earlier levels.

OVERHEAD COSTS

Taxes

Farm real estate tax levies in 1964 totaled \$1,546 million--an increase of 5.3 percent from 1963. Preliminary estimates for 1965 indicate a total tax levy on farm real estate of \$1,650 million--up almost 7 percent from 1964. Tax levies have increased every year since 1942. The estimated 1965 levy is more than double the 1952 tax levy.

Total farm personal property taxes are estimated at about \$295 million in 1965--up from 1964 (primarily because of increased motor vehicle and farm machinery values) but equal to the 1963 level. In 1966, the total personal property tax bill will probably increase because of increased values of livestock, poultry, motor vehicles, and farm machinery.

Farm real estate taxes amounted to slightly less than 3.5 percent of gross farm income in 1965--down slightly from 1964. They ranged from less than 2 percent in the Appalachian, Southeast, and Delta States regions to about 5 percent for the Pacific region.

Although the total farm real estate tax bill has been going up for 23 consecutive years, the value of farm real estate has also been increasing. In 1942, farm real estate taxes were \$0.97 per \$100 value; in 1965, they were estimated to be \$1.03 per \$100. The 1965 figure was slightly higher than that prevalent for the 1950's because real property tax levies in the 1950's lagged behind the upsurge in real estate values.

The upward trend in total real property taxes is a result of the increasing revenue requirements of State and local governments. People desire more and better governmental services--such as schools, roads, welfare programs, and others. Rising salary levels for public employees and increasing construction costs are also increasing revenue requirements. To satisfy these revenue needs, State and local governments collected \$22.9 billion in property taxes (farm and nonfarm) in fiscal 1965. Approximately 97 percent of this total was collected by local governments. Property taxes supplied 87 percent of local tax revenues.

The average increase in total farm real estate taxes has been approximately 6 percent a year. Because tax rates are determined by the revenue needs of State and local (mostly local) governments to meet the public's demands for services, and since there is no indication that the demand for services is going to diminish, there is no reason to believe that the rate of increase will change significantly in the near future.

Interest

Farmers will pay almost \$2.5 billion in interest in 1966 for money they borrowed to use in their farming businesses. This is about \$300 million, or 14 percent, more than they paid in 1965; and nearly \$1,040 million, or 72 percent, more than it cost them 5 years earlier (table 10). For several years prior to 1966, interest costs to farmers increased about 11 percent a year. The increase in 1966 represents a larger-than-usual upward move, stemming from a sharp rise in the amount of money borrowed and the rate of interest charged on new loans.

It is estimated that total farm debt by the end of the year will be about \$45 billion--nearly \$5.0 billion, or over 12 percent, more than it was at the beginning of the year. By January 1, 1967, debt not secured by real estate is expected to be up \$2.4 billion (about 12.5 percent) and debt secured by real estate may be up \$2.5 billion, or almost 12.0 percent, higher than it was a year earlier.

The increase in farm debt has been brought about by a number of factors. Higher prices for livestock, the bumper crop year of 1965, and the higher farm prices in 1966 created an optimistic outlook which encouraged borrowing. Farmers continued to make major improvements and purchase additional land to expand their farms into more economical units. They were willing to finance such expenditures, if necessary, with long-term real estate loans.

Farmers also increased their use of non-real estate loans for production purposes, including purchases of livestock and machinery. Increased purchases of feeder cattle during the latter part of 1965 and into 1966, and the increase in production of hogs in 1966 strengthened the demand for credit. Increases in purchases of machinery, fertilizer, and higher labor costs also contributed to the increase in the use of production credit. Important, also, is the fact that more and more farm production input items are purchased with cash or credit and not produced on the farm itself. All these factors contribute to the increase in the demand for credit by farmers.

Table 10.--Annual interest charges on the farm debt, United States, selected years, 1950-1966

Year	Charges on short-term debt owed to ^{1/} --						
	Total	Charges on mortgage debt	All lenders	Commercial banks	Production credit associations ^{2/}	Farmers Home Administration	Merchants, dealers, and miscellaneous creditors
	Million dollars	Million dollars	Million dollars	Million dollars	Million dollars	Million dollars	Million dollars
1950----	585	264	321	134	32	17	138
1955----	838	402	436	186	47	21	182
1959----	1,217	572	645	277	98	21	249
1960----	1,342	627	715	307	120	20	268
1961----	1,431	685	746	324	117	24	281
1962----	1,582	758	824	363	125	27	309
1963----	1,771	845	926	407	142	31	346
1964----	1,964	951	1,013	440	161	33	379
1965----	2,161	1,074	1,087	464	179	36	408
1966 ^{3/} --	2,467	1,226	1,241	530	215	40	456

^{1/} Includes service fees. Excludes interest charges on Commodity Credit Corporation price support loans and interest charges on debt for family living purposes.

^{2/} In addition to production credit associations, includes Federal intermediate credit bank loans to, and discounts for, livestock loan companies and agricultural credit corporations.

^{3/} Preliminary.

The major underlying factor affecting the rate of interest farmers pay on loans has been the unusually strong demand for credit throughout all sectors of the economy. In early fall, for example, long-term rates in the money market were the highest in 40 years. Short-term rates are at the highest levels since the early 1930's. Farmers must bid along with everyone else for the credit they need.

Farm mortgage (real estate) loan interest rates, which had remained fairly stable for several years, began to move upward during the latter part of 1965. The upward trend has continued. Farm mortgage loan commitments of life insurance companies during the second quarter of 1965 carried an average interest rate of 5.7 percent. During the second quarter of 1966 the average rate was 6.2 percent. Interest rates charged by Federal land banks also increased during 1966. As of January 1, 10 of the 12 banks charged 5.5 percent on new farm mortgage loans; the others charged 5.2 percent and 5.0 percent. By October 1 all 12 banks were charging 6.0 percent on new loans. Life insurance companies and Federal land banks are the largest institutional lenders of farm mortgage money.

Interest rates on non-real estate loans appear to have increased substantially during the year. Scattered reports concerning commercial banks--which are the largest source of farm non-real estate credit--indicate that the trend in their farm loan rates is slightly upward. Rates

on loans from production credit associations (PCA's)--another important source of farm credit--have increased during the year, as is indicated in the following tabulation. More than half of the associations were charging 7 percent or more on September 1, 1966.

Interest rate charged <u>1/</u>	Percentage of associations charging specified rates, as of--				
	July 1				Sept. 1
	1963	1964	1965	1966	1966
	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
Less than 6 percent---	14	7	5	2	1
6 percent-----	60	46	42	25	22
6-1/8 percent to 6-7/8:	23	40	43	36	24
7 percent and over----	3	7	10	37	53
All rates-----	100	100	100	100	100

1/ Rates shown exclude loan fees.

The increase in interest rates charged by PCA's results from the increased cost of borrowed money in the open market. Most of the funds loaned by PCA's are obtained through discounting notes with the Federal intermediate credit banks (FICB's). The FICB's get their money through sale of debentures (usually short term) in the open money market. The \$2.6 billion FICB debentures outstanding as of September 1, 1965, carried an average rate of 4.26 percent. On September 1, 1966, there were \$3.0 billion in FICB debentures outstanding at an average rate of 5.40 percent. The rate of FICB debentures issued September 1, 1965 was 4.35 percent. Those issued September 1, 1966 carried a rate of 6.00--the highest allowed by law. Later in September 1966, the law was amended to eliminate the 6.00 percent ceiling on the FICB debentures.

The rates charged by PCA's and probably by banks on farm loans will tend to fluctuate with the rates charged in other sectors of the economy. Indications at present are that the rates on farm loans will probably remain near current high levels during the expected heavy period of lending in late 1966 and the first quarter of 1967.

Besides the amount of money borrowed and the rate of interest charged, the length of time the money is used is an important contributing factor in the total cost of credit. Farming and the use of borrowed money are not as seasonal as they were as recently as 10 years ago. Loans to buy machinery, livestock, and to make farm and home improvements usually take longer than 1 year to repay. This causes loans to remain outstanding longer, and thereby make the total cost of the credit higher.

Farm debt has been increasing rapidly the last several years. Farmers will continue to use larger amounts of credit for production purposes even though the cost of the credit is relatively high. The trend toward the use of more purchased production inputs such as machinery, chemicals, fertilizer and higher priced labor will cause costs to increase further in farming land now in production. Any additional

land placed in production due to increased crop allotments or other causes will result in even higher expenses. The demand for farm credit will likely follow these expense trends. However, farmers may decide to postpone borrowing for such things as new equipment, additional land, and farm and home improvements until interest rates are lower.

Reports from various parts of the Nation indicate that farmers, in general, will be able to handle their debts satisfactorily. There are also indications that lending agencies will put more and more reliance on the borrower's management and production ability and will require more complete farm records and accounts when considering requests for farm loans. If there has to be a choice of who gets the credit that is available, lenders will tend to choose farmers who, in the lender's opinion, shows the best promise of repaying.

Insurance

Farmers will pay about \$2.3 billion in insurance premiums and social security taxes in 1966--up about 8 percent from 1965. Included are protection coverages for both the farm family and the farm business. About a third of the cost might be allocated as a business cost. The average insurance and social security payment per farm increased between 1965 and 1966 from about \$630 to \$700. Average payment projected for 1967 is \$750.

Factors generally causing the greater insurance payments are higher investment and property valuations, an increasing awareness of more risks, the financial ability to buy more insurance, and a rise in rates for social security and several types of liability and property insurance. These forces will be much the same during the next several years so that the trend of insurance expenditures is expected to continue upward but perhaps not so sharply as in 1966.

Farmers spend more for insurance on automobiles and trucks than for any other type of property insurance. Coverage (which includes liability insurance for bodily injury and property damage, as well as collision, fire, theft, and other coverage) is costing farmers \$421 million in 1966 and will likely rise to about \$440 million in 1967. Higher premium rates, and more new and expensive automobiles largely account for the increased insurance expenditures. Premium rates have been rising because of more accidents, greater automobile repair costs, and increasing medical and hospital costs. Automobile insurers in some States continue to press for higher rates and probably more increases will be approved by the State insurance commissioners during the next several years. Farmers and rural residents, however, can expect lower rates than residents of the more congested urban areas.

Fire and windstorm insurance on farm buildings also is rising in cost mainly because of higher operating expenses of insurers. Frequently the increased cost to farmers is in the form of higher minimum premiums or the use of a \$50 deductible policy at the same rate. The greatest impact has been on farmers who have low-valued buildings. Some insurance companies have raised their standards and increasingly refuse to insure low-quality structures. The tendency toward selectivity will likely continue. Most commercial farmers, however, have little difficulty in getting adequate protection for their buildings. Increased use of the so-called farmowners' policy has occurred during the last several years. The farmowners' policy is a package policy that includes fire, wind,

extended coverage, comprehensive personal liability, and a variety of other types of insurance.

The rising investment in tractors and machinery, particularly when bought on credit, has increased the insurance protection needed. Much machinery insurance is covered by the same policy that protects the farm buildings. Livestock housed in barns and feedlots is often insured but relatively little coverage is carried on range livestock.

For wheat, corn soybeans, tobacco, and cotton, substantial amounts of hail and Federal "all-risk" insurance are carried while the crop is growing. Premium costs will probably rise for many wheat and feed grain producers who are expected to expand their acreage in 1967.

Premiums paid for life and health insurance are estimated at \$980 million in 1966 and \$1,040 million for 1967. Expenditures for such types of personal insurance are mainly related to the size of the net income of farmers and with favorable incomes the current trend is expected to continue for several years. Average life insurance premium rates have been declining sharply since World War II. Farmers who have nonfarm jobs have been participating increasingly in low-premium group policies. Also, relatively more low rate term insurance, either by itself or in family and family income plans, is being purchased. Further, the mortality trend has been favorable.

The social security tax rates under the 1965 Amendments are scheduled to rise in stages until 1987. For self-employed farmers the rate in 1966 is 6.15 percent, will increase to 6.40 percent in 1967, and reach 7.80 percent by 1987. The share that farm employers pay for their wage workers increases from 4.20 percent in 1966 to 4.40 percent in 1967 and to 5.65 percent in 1987. Total social security taxes paid by farmers in 1966 are estimated at \$454 million, about 17 percent above 1965. Another increase of about 6 percent is likely for 1967. Beginning in 1966 the amount of each individual's income subject to social security taxes rose from \$4,800 to \$6,600.

FARM REAL ESTATE

Average U.S. farm real estate values increased 8 percent during the year ended March 1, 1966, reaching \$157 per acre. The total value of farmland and buildings climbed to \$171.1 billion--\$11.7 billion more than the March 1965 total. At regional levels, prices advanced most rapidly in the Corn Belt and in the Delta States with increases of 11 and 14 percent, respectively, for the year ended March 1, 1966. All regions showed increases of at least 5 percent over the same date a year earlier. Increase in value by States ranged from 3 percent in Maine, West Virginia, North Carolina, and Florida to 15 percent in Indiana.

Voluntary transfers of farm real estate occurred at the rate of 31.1 per 1,000 farms during the year ended March 1, 1966--8 percent above the previous year. The increased rate of transfer more than offset the decline in the total number of farms. Thus, the total number of voluntary transfers was estimated at 89,800, up 3.7 percent over the previous year. Total transfers by all methods were estimated at 133,400 for the year.

The number of complete farm units transferred in the year ended March 1966 was estimated at 44,100, down 9 percent from a year earlier and 44 percent below the 1959 level. Farm enlargement purchases, however, have averaged about 60,000 a year since 1959 as they continue to account for an increasing proportion of the total number of transfers each year. With about an equal number of farms increasing in size each year by renting additional land, 3.5 to 4 percent of the Nation's farms increase in size each year.

Since 1955, the percentage of real estate transfers for farm enlargement has increased from 32 percent to 54 percent of all transfers nationally (fig. 4). Grouping transfers by type-of-farming areas shows that such transfers account for a larger percentage of farm purchases in all areas since 1955, increasing from 15 percent to 34 percent in the Northeast dairy area and from 48 percent to 79 percent of all sales in the spring and winter wheat areas.

With the general tightening of the commercial credit market in 1966, farmland buyers have found it more difficult to secure credit from conventional sources. Although funds were readily available early in the year, commercial lending institutions (hard pressed for industrial and commercial loans, which yield a larger return) diverted funds from the less profitable farm mortgage market and have become more selective in making such loans. Interest rates on mortgage loans rose rapidly during the year and in the fall of 1966 most lenders were charging 6 percent or more. Thus, farmland buyers have turned more frequently to sellers as a source of credit, chiefly by the use of land installment contracts. In general, enlargement buyers have experienced less difficulty in securing loans than beginning or complete-unit buyers because they are generally able to provide better financial histories and have more certain income expectations.

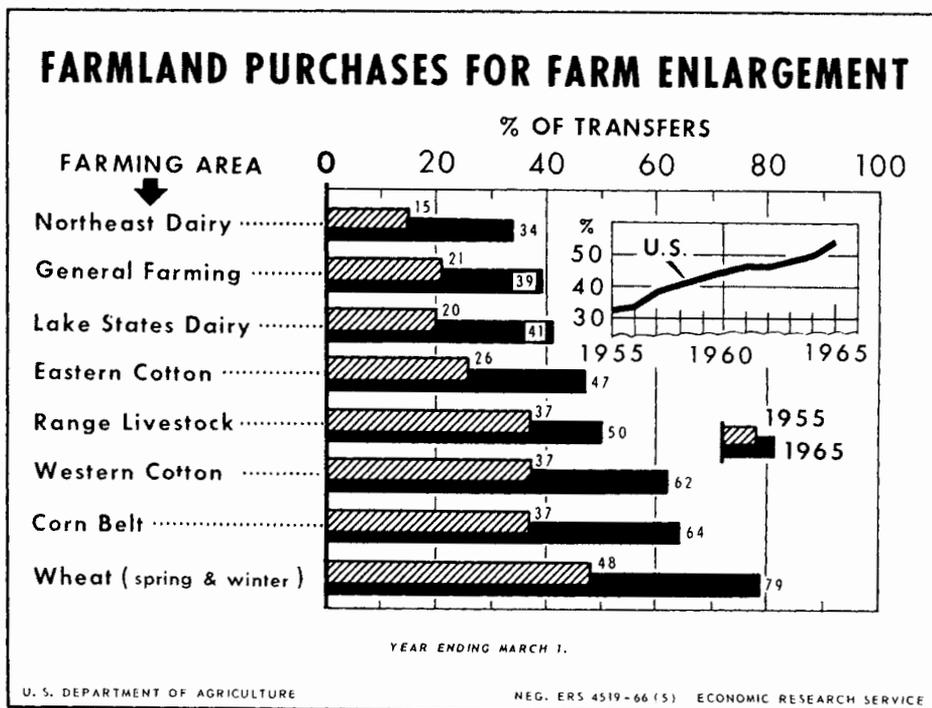


Figure 4

Gross cash rents per acre for whole farms and pastureland continued to increase at about the same rate as market values in 1966. In general, rent-to-value ratios for pastureland remained below those for whole farms rented for cash by 1 to 2 percentage points, reflecting the lower landlord cost per acre of pastureland. Cash rents per acre for whole farms in 1966 ranged from \$6.65 in South Dakota to \$27.80 in Illinois. Pasture rents ranged from \$2.60 in North Dakota to \$11.45 per acre in Iowa.

Although rising interest rates are a deterrent to additional long-term capital investment, this is at least partially offset by the general optimism of farmers concerning yield and income expectation. Real estate prices are expected to continue rising into early 1967 but at a less rapid rate than in late 1965 and early 1966. The volume of land transferred may decline, because of the general shortage of funds available for farm mortgage loans.

Farm Service Buildings

The total investment in farm service buildings is about \$15 billion--nearly equal to the value placed on farm livestock and about two-thirds of the value of all farm machinery. However, these buildings account for less than 10 percent of the total value of farm real estate and are declining in importance in relation to land as a production input. In 1950, service buildings were valued at \$10.4 billion (table 11); they accounted for 13.9 percent of farm real estate value. By 1966, service building value had increased to \$15.0 billion but accounted for only 8.8 percent of the value of all farm real estate.

At the individual farm level, building values have increased quite rapidly, rising from \$1,942 per farm in 1950 to \$5,014 per farm in 1966. However, much of this increase in value per farm is brought about by farm consolidation, where existing buildings on separate farm units are brought under the control of one operator. Such purchases increase the average investment per farm, but do not add to the total existing stock of buildings.

In many cases, the consolidation of separate farms into a single unit results in a loss of building values, because not all of the buildings on the add-on farm are needed for the new combined operation. However, farm consolidation frequently creates a need for new buildings to replace those on the combined farms, because they are not well located or are obsolete with respect to the new unit. This new construction, however, is often delayed and occurs at a much less rapid rate than actual consolidation. Thus, at least in the short run, there is a net loss in the value of farm buildings.

Although expenditures per farm for building repairs and capital improvement have been increasing rather steadily over the past 2 decades, the total of such expenditures has been declining since 1952. It will probably continue to decline over the next 3 to 4 years. This decline will continue as certain types of buildings (such as hog houses, chicken houses, and horse barns found on almost every farm a decade ago) are allowed to depreciate or are removed since they are unneeded in today's specialized agriculture. With this shifting emphasis to fewer and more specialized buildings, the changes occurring in construction methods and techniques become important. Low-cost pole and sheet metal construction will replace costly frame buildings. Typically, structures built today

Table 11.--Value of farm service buildings by farm production regions

Region	Total value					Value per farm				
	1950	1955	1960	1965	1966	1950	1955	1960	1965	1966
	Million dollars					Dollars				
Northeast-----	1,477	1,578	1,773	1,851	1,804	3,333	4,403	6,503	8,530	8,672
Lake States-----	1,535	1,810	2,274	2,158	2,194	3,050	4,077	6,035	6,375	6,644
Corn Belt-----	2,621	3,330	3,564	3,354	3,437	2,636	3,810	4,771	5,082	5,351
Northern Plains-----	1,012	1,212	1,409	1,386	1,346	2,734	3,591	4,702	5,010	5,139
Appalachian-----	1,089	1,250	1,426	1,631	1,674	1,122	1,517	2,312	3,023	3,177
Southeast-----	551	642	764	913	939	910	1,314	2,343	3,570	3,748
Delta States-----	405	499	624	665	734	726	1,136	2,147	2,951	3,420
Southern Plains-----	706	792	753	940	900	1,491	2,011	2,450	3,654	3,599
Mountain States-----	402	536	662	729	727	2,064	3,083	4,550	5,622	5,703
Pacific-----	646	917	1,104	1,302	1,263	2,423	3,938	5,869	7,830	7,915
United States-----	10,444	12,566	14,353	14,929	15,018	1,949	2,752	4,020	4,884	5,014

have shorter lifespans and are intended to be replaced more frequently, thus releasing capital from fixed assets and allowing a lower and more flexible capital structure. Recent evidence from a survey of Corn Belt farms indicates that most new construction on livestock farms is to replace existing facilities, and at the same time to develop more efficient structures for livestock production. On specialized cash grain farms new construction frequently consists of additional grain storage capacity. Thus, investment in new buildings is directly related to changes in livestock and crop production technology, and the need for crop storage and livestock housing at the individual farm level.

Buyers of farm real estate appear to be very selective in buying land with the particular set of buildings they want, although this is not always possible. Tabulation of real estate sales by type of buyer shows that farm enlargement buyers--those who want to consolidate the tract with their present farms--look for, and frequently buy, tracts with no buildings or with buildings in poor condition. On the other hand, buyers who intend to operate the tract as a complete farm unit tend to purchase tracts having a complete set of farm buildings in good condition.

One of the costs faced by farm operators is that of lost capital when farm units are sold with an existing set of buildings. In many cases, new buildings are constructed at a higher cost than necessary for efficient operation--either for aesthetic value or for other nonproductive reasons of the farmowner. When the entire farm unit is sold this added cost is discounted, so that 30 to 40 percent of the construction cost is lost in the sale, and only 60 to 70 percent of the building cost is reflected in the sale price of the property.

The price of farm building materials has increased less than 10 percent since 1955, with most of the increase occurring before 1960. With efficiencies developed in building design and construction, the actual cost per square foot of building area may have declined over the period.

The outlook for 1967 shows little change to slight increases in construction costs compared with recent years. Over the next 3 to 4 years, rising labor costs and moderate increases in prices of basic construction materials are probable.

COSTS BY TYPE OF FARM

The relative quantities of individual production inputs used vary greatly by enterprises and therefore by type of farm. Consequently, changes in prices paid for production inputs affect operating expenses differently on different types of farms. The annual estimates, or series, on farm costs and returns, representative of important segments of commercial agriculture (fig. 5) provide an illustration of these differences.

Total operating expenses (total farm expenses excluding charges for capital and family labor) per farm have edged up year by year, and in 1965 were the highest on record for 30 of the 42 important types of farms representative of most of the major-producing areas in the U.S. They were higher in 1965 than a year earlier on 33 of the 42 farms. Compared with 1957-59 they were higher on all of the 42 farm types. The

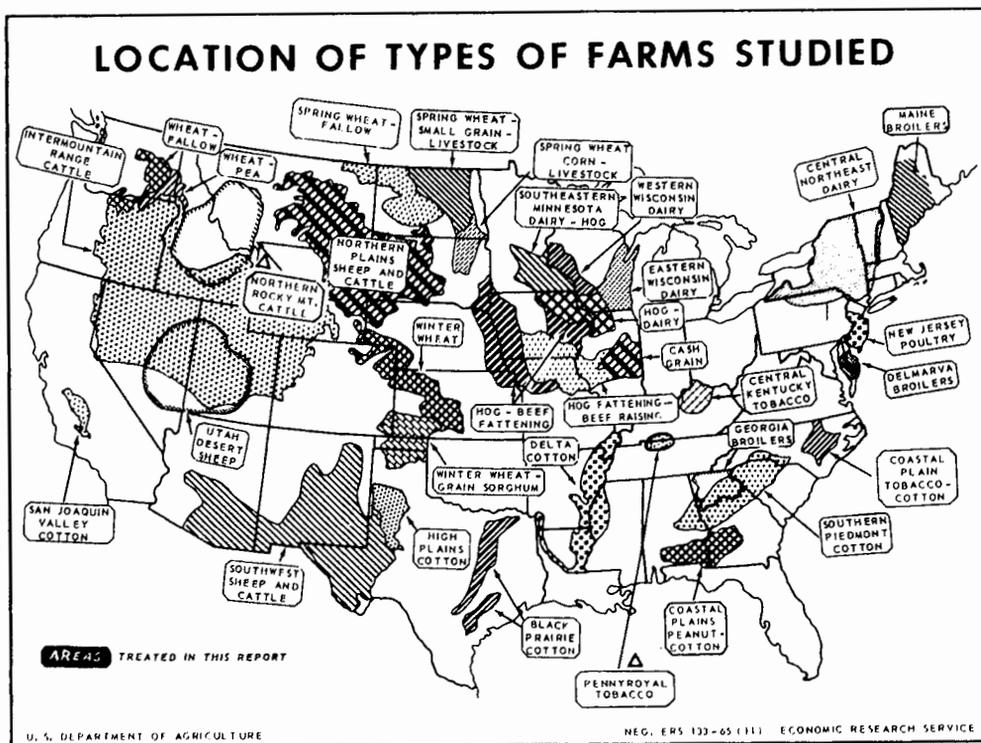


Figure 5

percentage increase from 1957-59 to 1965 ranged from around 1 percent on egg-producing farms in New Jersey to around 85 percent on hog fattening --beef raising farms in the Corn Belt. Operating expenses per farm have generally increased because prices of inputs have risen, and size of farm and production per farm have increased.

The index of operating expense per unit of production makes allowance for change in volume of production. Thus it is a summary measure of operating cost per unit of current prices. Because of wide year-to-year variations in production, averages for a period of years measure basic conditions better than year-to-year comparisons. A comparison of averages for 41 types of farms (for which estimates are available) shows that 1960-65 operating expense per unit of production averaged higher than in 1950-59 on 21 types, and lower or about the same on 20 types of farms (table 12).

Within major groups of farms there was considerable variation, with some farm types showing increases and others decreases, or little change. Only one group--tobacco farms--showed increases for all farm types.

Changes in operating expense per unit of production may stem from one or more of the following: (1) Changes in prices paid for goods and services used in production; (2) changes in the quantity of these inputs used; and (3) changes in production.

The index of input per unit of production--a summary measure of production efficiency--was lower in 1960-65 than in 1950-59 on all 41 types of farms for which estimates were made (table 12). On the 19 farm types where operating expenses per unit of production declined,

Table 12.--Operating expense and input per unit of production, selected types of farms, averages, 1950-59 and 1960-65

(1957-59=100)

Type of farm and location	Operating expense per unit of production ^{1/}		Input per unit of production ^{2/}	
	1950-59	1960-65	1950-59	1960-65
Dairy farms:				
Central Northeast-----	96	108	102	98
Eastern Wisconsin:				
Grade A-----	101	106	109	94
Grade B-----	102	101	109	93
Western Wisconsin, Grade B-----	103	103	111	93
Dairy-hog farms, Southeastern Minnesota-----	100	114	110	98
Egg-producing farms, New Jersey-----	110	88	104	95
Broiler farms:				
Maine-----	103	108	128	95
Delmarva:				
Broilers-----	3/	93	3/	92
Broiler-crop-----	105	98	117	89
Georgia-----	90	107	112	93
Corn Belt farms:				
Hog-dairy-----	102	118	115	99
Hog fattening--beef raising-----	101	116	109	96
Hog-beef fattening-----	104	112	107	98
Cash grain-----	104	97	116	84
Cotton farms				
Southern Piedmont-----	102	100	110	90
Mississippi Delta:				
Small-----	94	98	102	86
Large-scale-----	104	85	103	81
Texas:				
Black Prairie-----	107	98	113	90
High Plains (nonirrigated)-----	130	112	150	107
High Plains (irrigated)-----	108	99	108	92
San Joaquin Valley, Calif. (irrigated):				
Cotton-specialty crop-----	95	113	105	104
Cotton-general crop (medium-sized)-----	98	110	109	104
Cotton-general crop (large)-----	100	113	111	105
Peanut-cotton farms, Southern Coastal Plains-----	95	92	109	84
Tobacco farms:				
North Carolina Coastal Plain:				
Tobacco-----	92	97	102	86
Tobacco-cotton-----	93	98	103	85
Kentucky Bluegrass:				
Tobacco-livestock, Inner area-----	92	104	100	95
Tobacco-dairy, Intermediate area-----	90	103	103	91
Tobacco-dairy, Outer area-----	94	104	104	92
Spring wheat farms:				
Northern Plains:				
Wheat-small grain-livestock-----	97	92	106	88
Wheat-corn-livestock-----	114	96	123	86
Wheat-fallow-----	88	84	94	81
Winter wheat farms:				
Southern Plains:				
Wheat-----	104	100	107	90
Wheat-grain sorghum-----	117	100	129	86
Pacific Northwest:				
Wheat-pea-----	102	106	106	98
Wheat-fallow-----	115	116	121	111
Cattle ranches:				
Northern Plains-----	97	95	101	94
Intermountain Region-----	106	120	116	105
Southwest-----	123	111	114	97
Sheep ranches:				
Northern Plains-----	112	101	116	97
Utah-Nevada-----	100	112	105	101
Southwest-----	131	106	119	98

^{1/} Exclusive of charges for capital and unpaid labor.

^{2/} Constant dollars. Includes charges for capital and unpaid labor.

^{3/} Not available.

substantial gains were achieved in efficiency. Declines in input per unit of production ranged from 7 percent to 30 percent on these 19 farm types.

However, on the 21 types with higher operating expenses per unit of production, gains in efficiency were also often substantial. Reductions in input per unit of production on these farms ranged from little or no change to 26 percent--with more than half showing reductions greater than 10 percent. On these 21 farm types, the gain in efficiency was not enough to offset higher prices paid for inputs, and thus operating expenses per unit of production were higher in 1960-65.

Preliminary estimates of costs and returns for 1966 on 7 selected types of farms and ranches indicate that the upward trend in operating expenses and in prices paid for items and services used in farm production generally is continuing. Operating expenses and prices paid in 1966 averaged higher than a year earlier on these 7 types of farms (table 13).

Prices received for products sold averaged higher in 1966 than in 1965 on 6 of the 7 farm types. They averaged lower on the cotton farms in the Mississippi Delta, but lower prices were largely offset by higher Government payments. Farm production in 1966 is expected to average higher than a year earlier on tobacco, dairy, and Corn Belt farms.

As a result of the estimated changes in production, prices received and prices paid, net farm income (net returns to operator and family for their labor and management and return to capital) is expected to average higher in 1966 on 6 farm types. Lower production on wheat-small grain-livestock farms reduced 1966 net incomes on these farms.

Tobacco Farms, Coastal Plain, North Carolina

Operating expenses in 1966 probably will average around 12 percent higher than in 1965 on typical tobacco farms in the Coastal Plain of North Carolina. Expenses are estimated at a higher level for 1966 chiefly because of a larger acreage of tobacco per farm and higher prices paid for inputs. Net farm income in 1966 is expected to increase about 23 percent, due largely to greater tobacco production and a higher price received for tobacco. A substantial part of the increase in income is the result of producers recouping from under-production of tobacco-poundage quotas in 1965. Under the acreage-poundage program, producers were entitled to produce and market in 1966 the unused portion of their 1965 quota. Thus tobacco production per farm in 1966 is estimated to be around 20 percent greater.

As of October 15, 1966, prices received for flue-cured tobacco in this area averaged about \$68 per 100 pounds--around \$4.50 above the 1965 season average price. If this average holds through the remainder of the marketing season, cash receipts from tobacco per farm will exceed the previous season's return by about one-third.

Large-Scale Cotton Farms, Mississippi Delta

In response to the new cotton program, cotton acreage in 1966 on large-scale cotton farms in the Mississippi Delta was cut about 30 percent from 1965. Although the acreage of soybeans was increased about 18 percent, and wheat acreage about 5 percent, per acre costs of both of

Table 13.--Costs and returns, selected types of farms, average 1957-61, 1965, 1966 preliminary

Type of farm	Unit	Average 1957-61	1965	1966
Tobacco farms, Coastal Plain, North Carolina:				
Gross farm income-----	Dollar	10,442	11,097	13,630
Operating expenses-----	do.	5,428	5,801	6,530
Net farm income-----	do.	5,014	5,296	7,100
Tobacco harvested-----	Acre	7.9	6.8	7.8
Yield per acre-----	Pound	1,742	1,855	1,950
Total farm capital, Jan. 1-----	Dollar	23,240	43,540	45,180
Index numbers (1957-59=100):				
Net farm production-----	---	111	107	118
Prices paid-----	---	102	115	121
Prices received-----	---	104	110	124
Cotton farms (large-scale), Mississippi Delta:				
Gross farm income-----	Dollar	65,940	74,665	75,900
Operating expenses-----	do.	42,815	45,102	40,180
Net farm income-----	do.	23,125	29,563	35,720
Cotton harvested-----	Acre	235	235	164
Yield per acre-----	Pound	514	625	623
Total farm capital, Jan. 1-----	Dollar	202,100	319,880	363,390
Index numbers (1957-59=100):				
Net farm production-----	---	106	126	104
Prices paid-----	---	101	110	115
Prices received-----	---	101	97	94
Wheat-small grain-livestock farms, Northern Plains:				
Gross farm income-----	Dollar	9,583	16,071	15,760
Operating expenses-----	do.	5,875	6,219	6,270
Net farm income-----	do.	3,708	9,852	9,490
Wheat harvested-----	Acre	140.2	156.5	157.3
Yield per acre-----	Bushel	16.7	25.7	22.8
Total farm capital, Jan. 1-----	Dollar	48,590	63,660	71,190
Index numbers (1957-59=100):				
Net farm production-----	---	94	164	136
Prices paid-----	---	101	109	112
Prices received-----	---	101	86	97
Winter wheat farms, Southern Plains:				
Gross farm income-----	Dollar	15,532	17,532	19,540
Operating expenses-----	do.	5,732	7,594	7,960
Net farm income-----	do.	9,800	9,938	11,580
Wheat harvested-----	Acre	209.2	244.0	244.5
Yield per acre-----	Bushel	22.3	21.2	17.2
Total farm capital, Jan. 1-----	Dollar	88,280	118,790	130,820
Index number (1957-59=100):				
Net farm production-----	---	110	113	104
Prices paid-----	---	102	106	113
Prices received-----	---	99	80	97

Table 13.--Costs and returns, selected types of farms, average 1957-61, 1965,
1966 preliminary--Continued

Type of farm	Unit	Average 1957-61	1965	1966
Dairy farms (grade A), Eastern Wisconsin:				
Gross farm income-----	Dollar	13,676	17,178	21,360
Operating expenses-----	do.	7,974	10,913	11,550
Net farm income-----	do.	5,702	6,265	9,810
Cows, 2 years old and over-----				
	Number	28.2	34.2	33.3
Milk production per cow-----				
	Pound	9,610	10,840	10,870
Total farm capital, Jan. 1-----				
	Dollar	56,030	75,470	81,390
Index numbers (1957-59=100):				
Net farm production-----	---	105	123	131
Prices paid-----	---	102	113	116
Prices received-----	---	101	103	122
Hog-beef fattening farms, Corn Belt:				
Gross farm income-----	Dollar	26,351	45,889	51,620
Operating expenses-----	do.	17,584	29,401	34,040
Net farm income-----	do.	8,767	16,488	17,580
Fat cattle sold-----				
	Cwt.	611	1,087	1,143
Hogs sold-----				
	do.	519	604	621
Total farm capital, Jan. 1-----				
	Dollar	96,970	131,440	145,490
Index numbers (1957-59=100):				
Net farm production-----	---	102	136	147
Prices paid-----	---	102	103	114
Prices received-----	---	98	106	111
Cattle ranches, Intermountain region:				
Gross ranch income-----	Dollar	17,170	16,608	20,130
Operating expenses-----	do.	6,582	8,060	9,140
Net ranch income-----	do.	10,588	8,548	10,990
Cows, 2 years old and over-----				
	Number	131.5	154.6	155.7
Total ranch capital, Jan. 1-----				
	Dollar	77,790	90,540	100,680
Index numbers (1957-59=100):				
Net ranch production-----	---	99	100	93
Prices paid-----	---	103	114	118
Prices received-----	---	98	92	116

these crops are lower than for cotton, so that 1966 operating expenses were reduced by about 11 percent from 1965.

Prices paid for items used in production averaged nearly 5 percent higher in 1966 than in 1965. Although higher prices were received for soybeans, prices received for products sold averaged about 3 percent lower, reflecting mainly the lower price of cotton lint. Gross sales of crops and livestock are expected to be down about 19 percent. However, Government payments--mainly from the cotton program--are expected to bring gross income up slightly in 1966. With smaller operating expenses in 1966, net farm income may exceed that of 1965 by about 20 percent.

Wheat-Small Grain-Livestock Farms, Northern Plains

Cash operating expense in 1966 on typical wheat-small grain-livestock farms are about the same as in 1965 and about 7 percent larger than in 1957-61.

Total cash inputs are lower in 1966 than in 1957-61 because of more efficient use of machinery and labor. During this period, the size of these farms increased about 8 percent. Cropland harvested increased about 10 percent, or from around 380 to 415 acres per farm.

Prices paid for goods and services used in production averaged about 3 percent higher in 1966 than in 1965, and 11 percent higher than in 1957-61.

Production in 1966 is about 17 percent lower than in 1965, but 45 percent higher than in 1957-61. Production in 1965 was near the record high.

In 1966, prices received are about 12 percent higher than in 1965, but 4 percent lower than in 1957-61. Net farm income in 1966 is about 4 percent less than in 1965, but about 2-1/2 times the 1957-61 average.

Winter Wheat Farms, Southern Plains

Total farm operating expenses on typical winter wheat farms in the Southern Plains are about 5 percent higher in 1966 than in 1965 and 38 percent higher than in 1957-61. Since 1957-61, the size of these farms has increased 11 percent--from 755 to 840 acres. Also during this period, cash inputs per acre and prices paid for goods and services used in production increased, and in 1966 they are about 3 percent higher than in 1965.

The average number of cattle per farm has increased from 43 head in 1957-61 to 70 head in 1966. A substantial part of this increase was made possible by the purchase of calves. In years when crops are poor and incomes are down, these farmers refrain from buying calves and also defer replacing buildings and equipment. Consequently, direct comparisons of year-to-year changes in price indexes are difficult. However, most items purchased on these farms in 1966 are expected to be about 2 to 4 percent higher than in 1965.

Production on these farms in 1966 is about 8 percent lower than a year earlier. An increase in livestock production probably will be offset by lower wheat yields. Prices received are about 20 percent higher in 1966 than in 1965.

Grade A Dairy Farms, Eastern Wisconsin

Operating expense of grade A dairy farms in Eastern Wisconsin is about 6 percent higher in 1966 than in 1965. Quantities of production items used and prices paid for them are higher.

Although 1966 was a fairly good production year in this area, the increase in income was chiefly a result of higher prices received. Milk prices increased 16 percent from 1965. The quantity of milk sold in 1966 was nearly as great as in 1965. Net farm income in 1966 is an all-time high--around 50 percent greater than in 1965.

Hog-Beef Fattening Farms, Corn Belt

Total operating expenses on hog-beef fattening farms in the Corn Belt are about 16 percent higher in 1966 than in 1965. This increase is chiefly due to more feeder cattle purchased at higher prices. Other expenditures were generally higher with hired labor, fertilizer, and power and machinery showing substantial increases. Prices paid for all inputs averaged around 10 percent above 1965. Although both the cattle and hog enterprises continued to increase in size on these farms, expenditures for feed were held near those of a year earlier by higher crop yields.

The positive price spread that existed in 1965 between feeder calves and fat cattle was reversed in 1966, and operators paid higher prices for calves than they received for fat cattle. Although prices received in 1966 for fat cattle averaged slightly above 1965 levels this gain was lost because feeder calf prices were \$3 more per hundredweight than a year earlier.

Hog production in 1966 probably will be about 6 percent higher, reflecting the favorable prices received in 1965 and early 1966. This larger production and higher prices received for hogs probably will increase hog receipts in 1966 by nearly 15 percent.

Cattle Ranches, Intermountain Area

Total 1966 operating expenses on cattle ranches in the Intermountain area were at a record high--probably 10 to 15 percent above a year earlier. These ranchers have been enlarging their operations, and total operating costs tend to increase as the size of the operating unit increases. Moreover, due to drought, the outlay for hay in 1966 is expected to be more than double that for 1965. Furthermore, grazing fees and prices paid for nearly all other items averaged around 3 to 4 percent higher than in 1965.

This (1966) was another mixed production year for cattle ranchers in this large diversified area. Fairly good calving weather prevailed and an average calf crop was obtained, but a late spring frost and weevil infestation reduced hay yields. The widespread drought further reduced crop production and curtailed the output of ranges. Ranchers in most areas reported cattle in poorer condition than in 1965. Cattle were coming off ranges at lighter weights. However, prices received for cattle and calves sold by these ranchers probably will average around 25 percent higher than a year ago. Thus net ranch income is expected to average between 25 and 30 percent above 1965.

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