Changes in New Mexico Agriculture 1995

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PREFACE

Changes in New Mexico Agriculture provides an annual accounting in constant units of changes that occurred in cash receipts and value of production between the preceding year and the title year. It is a companion for publications such as *New Mexico Agricultural Statistics* and *Agricultural Statistics*, which publish extensive statistics related to agriculture; however, the monetary values reported in those publications are measured in nominal dollars. As a consequence, a comparison between years does not allow a determination of the real changes that have occurred. *Changes in New Mexico Agriculture* remedies this problem. Changes in cash receipts are calculated for all commodities. In addition, a top-10 county disaggregation is made for the 10 commodities accounting for the highest percentage of cash receipts in New Mexico for the period covered in the report. Long-term trends and changes in cash receipts and value of production are reported in *Trends in New Mexico Agriculture*.

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INTRODUCTION

This report is a baseline reference for New Mexico's agricultural sector with respect to cash receipts, value of production, and major commodities. Annual cash receipts and value of production are converted from nominal monetary values to constant dollar values.[1] Inflation in the general price level produces nominal price changes that do not reflect changes in the real value of goods and services in the economy. To remove changes associated with inflation, the value of the commodities covered in this report are adjusted to a common base period (1990) using the consumer price index[2] (CPI) (appendix A). Adjusting cash receipts to a common base period removes the variation in cash receipts between time periods that may be due to price differences associated with changes in the nominal value of the dollar. Adjusted values allow the identification of monetary values that have increased or decreased in real terms. Although conversion to a common base period does not take into account changes in production due to technology, a comparison of the constant dollar values between the two periods provides a measure of whether producers' real incomes have increased or decreased. For commodities with decreases in production, there also may be a decrease in the cost of production. In these cases, cost decreases could partially offset decreases in profits associated with lower quantities.

The data should not be interpreted as measuring the impact of agriculture upon the state's economy; they are cash receipts and values of production. Cash receipts understate total value in some cases and overstate total value in other cases. However, cash receipts are the values used in publications such as *New Mexico Agricultural Statistics*. Cash receipts do not account for intrafarm transfers of commodities such as hay, pasture, livestock, and grain. In contrast, the value of production for final products such as calves and yearlings may include the value of hay and grain that were produced on the farm or ranch. In these cases, cash receipts and value of production for the final product do not record the production of intermediate goods used in the final product. The general result is that cash receipts data overstate the importance of livestock operations where one animal may appear in cash receipts more than once in a given year and the value of nonmarketed feed is attributed to the animal not the crop. Value added would be a preferable concept, but the data are not available. In addition, cash receipts and value of production leave unmeasured the multiplier effect that accompanies agricultural production. This unmeasured impact includes such important components as agriculture's impact on the input and service industries associated with the production process, the processing of agricultural products, and the impact of the multiplier effect upon cash receipts as they cycle through the economy.

The value of the multiplier for New Mexico's agricultural sector is 2.4472. This means every $1 change in output that occurs in the agricultural sector results in a $2.4472 change in New Mexico's aggregate economy (US Department of Commerce, 1992, p. 34).

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[1]Throughout this report, changes between periods reported in 1990 dollar constant dollar values will be referred to as changes in real values measured in constant units.

[2]Adjustments to a constant value are most meaningful when the adjustment mechanism is familiar to those who will use the adjusted values. No single price index is appropriate for making adjustments to the values of all goods and services; however, the Consumer Price Index (CPI) is frequently used to measure inflationary changes in the economy. Because the CPI is familiar to most readers, it is used in this report to adjust the nominal dollar values.

AGRICULTURE IN NEW MEXICO

The 1992 Census of Agriculture classifies 60.33% of New Mexico's land area as farmland. The USDA definition does not distinguish between cropland and rangeland. There were 14,279 farms, 0.6% of the US total. Units of 2,000 acres or more accounted for 19.31% of the total farm classification, and units in the 1–50 acre range constituted 18.29% of the total.By sales class, 80.58% of the units had sales less than $50,000 and 2.98% had sales greater than $500,000. The average operator age was 55.3 years, and 52.8% of the operators reported farming as their principal occupation. With respect to tenure, individual or family operations were the predominant types, comprising 83.75% of total operators (1992 Census of Ag., State Data, NM, pp. 8-9, 47).

From 1994 to 1995, the nominal, average per-acre value of farm real estate increased from $194 to $208 (USDA-ERS, AREI). This change represented a nominal increase of $14 per acre. The constant dollar, average per-acre value of farm real estate increased $8.10, when measured in 1990 dollars. The nominal, average gross cash rent per acre increased from $80.40 in 1993 to $88.90 in 1994. The increase was $8.50 in nominal terms and $5.72 in constant dollar value (USDA-ERS, AREI).

In 1995 New Mexico ranked 35th among the 50 states with respect to total farm marketings and produced 0.76% of total US farm marketings. New Mexico ranked 37th with respect to total farm marketings from crops, producing 0.46% of the US total, and it ranked 28th with respect to total farm marketings from livestock, producing 1.11% of the US total (USDA, Agricultural Statistics, p. IX-35). Farm income[3] was 1.09% of New Mexico's total personal income generated from all industries. Farm income decreased from $423.1 million in 1994 to $336.5 million in 1995 (US Dept. of Commerce, REIS). Cash receipts from all commodities were $1.45 billion in 1995, a nominal decrease of 7.91% from 1994. In constant dollars, total cash receipts decreased 10.44% from 1994 to 1995 (table 1).

From 1994 to 1995, the nominal value of cash receipts increased for 11 commodities, decreased for 14 commodities, and remained constant for four commodities. The situation was different for cash receipts in real terms. When valued in constant dollars, 11 commodities showed an increase in cash receipts and 18 commodities showed a decrease. The rank of the commodities also showed substantial change from 1994 to 1995. Of the 29 commodities reported, nine commodities maintained the same rank, 10 increased in rank, and 10 decreased in rank (table 1). When compared to the average, 1992-94 constant dollar cash receipts, the 1995 value of constant-dollar cash receipts was greater than the 1992-94 average for 11 commodities and less for 17 commodities (table 2). One commodity, Christmas trees, has not been reported separately long enough to calculate a multiple year average. Of the top 10 commodities in 1995, nine were in the top 10 for the 1992-94 constant dollar average. Six of the top 10 commodities had 1995 constant dollar cash receipts that exceeded their 1992-94 constant dollar average. Potatoes were in the top 10 in 1995, but did not rank in the top 10 for the 1992-94 constant dollar average. Wheat ranked in the top 10 for the 1992-94 constant dollar average, but did not rank in the top 10 in 1995.

Constant dollar value of cash receipts decreased 10.44% from 1994 to 1995. Although there are changes within the component lines of the balance sheet for New Mexico's farm sector (table 3), there was no change in total farm assets from 1994 to 1995. The value of farm debt increased 1.53% in real terms. Although total farm debt increased in both real and nominal terms, the debt-to-equity and debt-to-asset ratios decreased from 1994 to 1995, due to the increase in total farm assets. The value of real estate and financial assets increased, while livestock, machinery and vehicles, crops, and purchased inputs decreased in value.

THE MAJOR COMMODITIES

In 1995, the top 10 commodities accounted for 89.60% of the 1995 total value of cash receipts for New Mexico. These commodities were taken as the major commodities for New Mexico in 1995. A more detailed analysis of the changes between 1994 and 1995 follows. An important part of the detailed analysis is the disaggregation of the change in the value of production into its component parts: change due to difference in commodity price, change due to the difference in the quantity of commodity produced, and the interaction of difference in price and difference in quantity.

With respect to cash receipts, the top 10 (of 33 total) counties account for 75.80% of New Mexico's total cash receipts (table 4), up 3.43% from 1994. The top two counties, Chaves and Doña Ana, account for 32.20% of total value of cash receipts in New Mexico. Both Chaves and Doña Ana counties rank in the top 10 for six of the top 10 commodities.

[3] Farm income consists of proprietor's net farm income, the wages of hired farm labor, the payment-in-kind of hired farm labor, and the salaries of officers for corporate farms.

Table 1. Cash receipts for all New Mexico commodities, 1994-95.

Commodity	1995 Rank	1995 Cash[a] receipts ($1000)	1995 Percent agricultural cash Receipts	1995 Cumulative percent of agricultural cash receipts	1995 Cash[b] receipts ($1000) (1990 = 100)	1994 Rank	1994 Cash[a] receipts ($1000)	1994 Cash[b] receipts ($1000) (1990 = 100)	Percent change cash receipts 1994 - 1995 Nominal dollars	Percent change cash receipts 1994 - 1995 Constant dollars
Cattle and calves	1	483,140	33.13	33.13	416,883	1	664,389	589,522	-27.28	-29.28
Milk wholesale	2	417,222	28.61	61.74	360,005	2	382,356	339,270	9.12	6.11
Hay	3	130,484	8.95	70.69	112,590	3	137,705[c]	122,188	-5.24	-7.86
Pecans	4[d]	55,800	3.83	74.52	48,148	8	30,960	27,471	80.23	75.27
Onions	5	52,826	3.62	78.14	45,581	7	32,052	28,440	64.81	60.27
Chile	6	44,840	3.07	81.22	38,691	4	55,868	49,572	-19.74	-21.95
Greenhouse nursery	7	39,062	2.68	83.89	33,705	5	41,232	36,586	-5.26	-7.87
Cotton lint	8	30,979	2.12	86.02	26,731	6	33,239	29,493	-6.80	-9.37
Corn	9	28,214	1.93	87.95	24,345	9	26,679	23,673	5.75	2.84
Potatoes	10	24,045	1.65	89.60	20,747	10	22,491	19,957	6.91	3.96
Misc. vegetables	11	16,250	1.11	90.72	14,021	14	16,250	14,419	0.00	-2.76
Wheat	12	14,919	1.02	91.74	12,873	11	18,308	16,245	-18.51	-20.76
Peanuts	13	14,190	0.97	92.71	12,244	13	16,376	14,531	-13.35	-15.74
Milk retail	14	13,581	0.93	93.64	11,719	18	11,526	10,227	17.83	14.58
Other livestock	15	13,525	0.93	94.57	11,670	16	12,572	11,155	7.58	4.62
Eggs	16	13,383	0.92	95.49	11,548	15	15,000	13,310	-10.78	-13.24
Sorghum grain	17	12,251	0.84	96.33	10,571	12	16,962	15,051	-27.77	-29.76
Sheep and lambs	18	12,186	0.84	97.17	10,515	19	8,493	7,536	43.48	39.53
Other field crops	19	11,427	0.78	97.95	9,860	17	11,698	10,380	-2.32	-5.01
Lettuce	20	8,493	0.58	98.53	7,328	20	7,182	6,373	18.25	15.00
Dry beans	21	6,340	0.43	98.97	5,471	21	6,653 (c)	5,903	-4.70	-7.33
Wool and mohair	22	4,074	0.28	99.25	3,515	23	3,354	2,976	21.47	18.12
Hogs and pigs	23	3,429	0.24	99.48	2,959	22	3,727	3,307	-8.00	-10.53
Cottonseed	24	3,406	0.23	99.71	2,939	24	3,241	2,876	5.09	2.19
Christmas trees	25	1,674	0.11	99.83	1,444	26	1,674	1,485	0.00	-2.76
Other fruits and nuts	26	1,540	0.11	99.93	1,329	27	1,540	1,366	0.00	-2.76
Apples	27	894	0.06	100.00	771	25	1,752	1,555	-48.97	-50.38
Other poultry	28	40	0.00	100.00	35	29	40	35	0.00	-2.76
Farm chickens	29	16	0.00	100.00	14	28	87	77	-81.61	-82.12
Total		1,458,230			1,258,250		1,583,406	1,404,979	-7.91	-10.44

[a]Source: New Mexico Agricultural Statistics - 1996, p. 16. Data for 1994 have been revised from those reported in 1995.

[b]The Consumer Price Index with base year 1990 = 100 was calculated to be 115.8935 for 1995 and 112.6996 for 1994.

[c]Data have been revised from those reported in "Changes in New Mexico Agriculture: 1994."

[d]Light shading indicates a higher nominal dollar rank in 1995 than in 1994, dark shading indicates a lower nominal dollar rank in 1995 than in 1994; no shading indicates no change in nominal dollar rank.

Table. 2 Cash receipts for all New Mexico commodities, 1992-95.

	1995			1994			1993			1992			1992-94 Average			
Commodity	Rank	Cash[a] receipts ($1000)	Cash[b] receipts ($1000) (1990 = 100)	Rank	Cash[a] receipts ($1000)	Cash[b] receipts ($1000) (1990 = 100)	Rank	Cash[c] receipts ($1000)	Cash[b] receipts ($1000) (1990 = 100)	Rank	Cash[d] receipts ($1000)	Cash[b] receipts ($1000) (1990 = 100)	Rank	Cash receipts ($1000)	Cash receipts ($1000) (1990 = 100)	Cash receipts 1995 > 1992-95 average (1990 = 100)
Cattle and calves	**1**	483,140	416,883	1	664,389	589,522	1	763,886	695,163	1	709,526	665,023	1	712,600	649,902	NO
Milk wholesale	**2**	417,222	360,005	2	382,356	339,270	2	300,339	273,319	2	258,884	242,646	2	313,860	285,078	YES
Hay	**3**	130,484	112,590	3	137,705	122,188	3	73,421	66,816	3	64,331	60,296	3	91,819	83,100	YES
Pecans	**4**[e]	55,800	48,148	8	30,960	27,471	4	21,600	19,657	5	49,200	46,114	7	33,920	31,081	YES
Onions	**5**	52,826	45,581	7	32,052	28,440	5	43,999	40,041	7	38,080	35,692	6	38,044	34,724	YES
Chile	**6**	44,840	38,691	4	55,868	49,572	4	56,077	51,032	4	67,379	63,153	4	59,775	54,586	NO
Greenhouse nursery	**7**	39,062	33,705	5	41,232	36,586	6	37,181	33,836	6	43,413	40,690	5	40,609	37,037	NO
Cotton lint	**8**	30,979	26,731	6	33,239	29,493	7	33,014	30,044	10	22,342	20,941	8	29,532	26,826	NO
Corn	**9**	28,214	24,345	9	26,679	23,673	8	23,462	21,351	11	19,718	18,481	10	23,286	21,168	YES
Potatoes	**10**	24,045	20,747	10	22,491	19,957	12	19,010	17,300	12	20,897	19,586	11	20,799	18,948	YES
Misc. vegetables	**11**	16,250	14,021	14	16,250	14,419	15	16,250	14,788	14	16,250	15,231	14	16,250	14,813	NO
Wheat	**12**	14,919	12,873	11	18,308	16,245	11	21,588	19,646	8	30,320	28,418	9	23,405	21,436	NO
Peanuts	**13**	14,190	12,244	13	16,376	14,531	13	18,988	17,280	13	18,985	17,794	13	18,116	16,535	NO
Milk retail	**14**	13,581	11,719	18	11,526	10,227	19	10,428	9,490	17	10,670	10,001	18	10,875	9,906	YES
Other livestock	**15**	13,525	11,670	16	12,572	11,155	16	13,533	12,315	16	13,247	12,416	16	13,117	11,962	NO
Eggs	**16**	13,383	11,548	15	15,000	13,310	14	16,693	15,191	15	14,645	13,726	15	15,446	14,076	NO
Sorghum grain	**17**	12,251	10,571	12	16,962	15,051	9	21,613	19,669	9	21,686	20,326	12	20,087	18,348	NO
Sheep and lambs	**18**	12,186	10,515	19	8,493	7,536	17	11,017	10,026	19	10,390	9,738	19	9,967	9,100	YES
Other field crops	**19**	11,427	9,860	17	11,698	10,380	18	10,976	9,989	18	10,583	9,919	17	11,086	10,096	NO
Lettuce	**20**	8,493	7,328	20	7,182	6,373	20	7,088	6,450	20	8,711	8,165	20	7,660	6,996	YES
Dry beans	**21**	6,340	5,471	21	6,653	5,903	21	6,713	6,109	21	5,818	5,453	21	6,395	5,822	NO
Wool and mohair	**22**	4,074	3,515	23	3,354	2,976	25	2,463	2,241	24	3,859	3,617	23	3,225	2,945	YES
Hogs and pigs	**23**	3,429	2,959	22	3,727	3,307	23	4,894	4,454	23	3,880	3,637	22	4,167	3,799	NO
Cottonseed	**24**	3,406	2,939	24	3,241	2,876	24	3,785	3,444	26	2,348	2,201	24	3,125	2,840	YES
Christmas trees	**25**	1,674	1,444	26	1,674	1,485	(f)	(f)	(f)	(f)	(f)	(f)	(f)	(f)	(f)	(f)
Other fruits and nuts	**26**	1,540	1,329	27	1,540	1,366	27	1,540	1,401	27	1,540	1,443	26	1,540	1,404	NO
Apples	**27**	894	771	25	1,752	1,555	26	1,757	1,599	25	2,535	2,376	25	2,015	1,843	NO
Other poultry	**28**	40	35	29	40	35	28	40	36	28	40	37	29	40	36	NO
Farm chickens	**29**	16	14	28	87	77	29	36	33	29	31	29	28	51	46	NO
Total		1,458,230	1,258,250		1,583,406	1,404,979		1,541,391	1,402,719		1,469,308	1,377,149		1,530,810	1,394,454	

[a]Source: New Mexico Agricultural Statistics - 1996, p. 16.

[b]The Consumer Price Index, with base year 1990 = 100, was calculated to be 115.8935 for 1995, 112.6996 for 1994, 109.8859 for 1993, and 106.6920 for 1992.

[c]Source: New Mexico Agricultural Statistics - 1995, p. 16.

[d]Source: New Mexico Agricultural Statistics - 1994, p. 16.

[e]Light shading indicates a higher nominal dollar rank in 1995 than the 1992-94 nominal dollar average rank; dark shading indicate a lower nominal dollar rank in 1995 than the 1992-94 nominal dollar average rank; no shading indicates no change in nominal dollar rank between 1995 and the 1992-94 nominal dollar average rank.

[f]Prior to 1994, Christmas Trees were included in Forest Products. Forest Products ranked 22 in 1992-93, with $5,000,000 in cash receipts reported in each of these years.

Table. 3 Change in balance sheet of New Mexico's farm sector, 1994 - 95.[a]

	Number		Percent change
	1995	1994	1994-95
Farms	13,500	13,500	0.00%

	1995		1994		Percent change 1994-1995	
	Millions dollars	Millions[b] dollars (1990=100)	Millions dollars	Millions dollars (1990=100)	Nomial dollars	Constant dollars (1990=100)
Assets						
Real estate	10,520.2	9,077.5	9,231.5	8,191.2	13.96%	10.82%
Livestock and poultry[c]	843.2	727.6	1,000.6	887.8	-15.73%	-18.05%
Machinery and motor vehicles[d]	432.9	373.5	455.0	403.7	-4.86%	-7.48%
Crops[e]	71.9	62.0	74.3	65.9	-3.23%	-5.90%
Purchased inputs	42.1	36.3	47.6	42.2	-11.55%	-13.99%
Financial	470.0	405.5	435.4	386.3	7.95%	4.97%
Total farm assets	11,244.4[f]	9,977.3	11,244.4[f]	9,977.3	0.00%	0.00%
Farm						
Real estate	643.0	554.8	595.9	528.8	7.90%	4.93%
Non-real estate[g]	537.9	464.1	535.2	474.9	0.50%	-2.27%
Total farm debt	1,180.9[f]	1,019.0	1,131.1[f]	1,003.6	4.40%	1.53%
Equity	10,063.5	8,958.4	10,113.3	8,973.7	-0.49%	-0.17%
Ratios						
Debt/equity	11.73		11.18			
Debt/assets	10.50		10.06			

[a]Source: USDA, Economic Research Service:http://USDA.MANNLIB.CORNELL.EDU/CGI-USDA/AGENCY.CGI.ERS. Data are for farms with annual sales of $1,000 or more and include operator households.
[b]The Consumer Price Index, with base year 1990 = 100, was calculated to be 115.8935 for 1995 and 112.6996 for 1994.
[c]Excludes horses, mules, and broilers.
[d]Includes only farm share value of trucks and autos.
[e]All non-CCC crops held on farms plus the value above loan rate for crops held under CCC.
[f]Due to rounding, parts will not sum to total.
[g]Excludes debt for nonfarm purposes.

Table 4. Cash receipts for top 10 New Mexico counties and county rank for the top 10 commodities, 1995.

County	Rank 1995	Rank 1994	Value[a] (1000)	Percent of total value of N.M. production	Rank: Cattle & calves	Milk wholesale	Hay	Chile	Greenhouse nursery	Cotton lint	Onions	Pecans	Corn	Potatoes
Chaves	**1**	1	236,164	16.20	4	1	1	4	NA[b]	3	NR[c]	2	11	NR
Doña Ana	**2**	2	233,384	16.00	12	2	4	2	NA	1	2	1	NA	NR
Curry	**3**	3	138,959	9.53	2	4	12	NR	NA	8	NR	NR	1	2
Roosevelt	**4**	4	104,528	7.17	10[e]	3	8	NR	NA	6	NR	NR	3	3
Eddy	**5**[d]	6	90,778	6.23	3	5	2	6	NA	4	NA	3	14	NR
Union	**6**	5	83,679	5.74	1	NR	15	NR	NA	NR	NR	4	2	NR
San Juan	**7**	7	64,562	4.43	7	7	3	12	NA	NA	NA	NR	4	1
Luna	**8**	8	63,855	4.38	11	NR	22	1	NA	5	1	4	15	NR
Lea	**9**	9	57,403	3.94	10	5	7	5	NA	2	NA	5	NA	NR
Socorro	**10**	10	32,079	2.20	14	6	5	7	NA	NA	NA	NR	8	NR
Total			1,105,391	75.80										

[a]Source: New Mexico Agricultural Statistics, 1995, p. 18.

[b]N/A indicates that county-level data are not available.

[c]NR indicates that county-level data are not kept that would allow the determination of the rank for the listed county

[d]Light shading indicates a higher nominal dollar rank in 1995 than in 1994; dark shading indicates a lower nominal dollar rank in 1995 than in 1994; no shading indicates no change in nominal dollar rank.

[e]Soccorro and Lea counties were both ranked number 10 for Cattle and Calves. Eddy and Lea counties were both ranked number 5 for milk.

Where possible, the county-level analysis uses cash receipts; however, this is not possible for all commodities. At the county level, some commodity data are reported only in value of production. Differences in cash receipts and value of production arise for various reasons. In the case of commodities used in the production of another commodity (i.e., feed for livestock), sales do not account for the product consumed on the farm. In other cases, marketing issues such as grading and product damage result in final cash receipts lower than the value of production estimated at the county level. The cash receipts value represents the final reporting of the actual monetary value received by the producer from the product's sale.

Cattle and Calves

Cattle and calves were the number one commodity in 1995, with cash receipts of $483.1 million. Cash receipts from the top 10 counties in this sector comprised 60.56% of New Mexico's total cash receipts from cattle and calves (table 5). For the top 10 counties, nominal cash receipts decreased 24.81% from 1994 to 1995. Constant dollar cash receipts decreased 26.88% from 1994. All of the top 10 counties had a decrease in cash receipts valued in constant dollars. Eddy County had the smallest decrease (16.11%), while Lea County had the largest (40.64%). In 1995, average sale price was $52.40 per cwt. for cattle and $68.80 per cwt. for calves (NM Ag. Statistics, 1996, p. 34).

New Mexico cattle and calves totaled 1.50 million head as of January 1, 1995. This inventory represented a 6.38% increase from 1994. The top 10 counties had a 4.63% increase in the number of cattle and calves (table 5).

Milk

Wholesale milk ranked second with respect to cash receipts in 1995. County-level statistics include cash receipts from all milk sales; therefore, comparison of county cash receipts for milk uses the receipts for all milk. Total milk production was 3,623 million pounds in 1995, resulting in cash receipts totaling $430.8[4] million for a 9.37% increase from 1994. Cash receipts for the top 10 milk-producing counties constituted 98.74% of New Mexico's total cash receipts from milk. Chaves County led the state in cash receipts from milk with 36.32% of the state's total. Within the top 10, milk-producing counties, Sierra County experienced the greatest change in constant dollar cash receipts with an increase of 45.53%. from $3,495,000 in 1994 to $5,087,000 in 1995. Only Chaves County had a decrease (6.20%) in constant dollar cash receipts. Constant dollar cash receipts for the top 10 counties in the aggregate increased 6.27% in 1995. Average nominal price received for wholesale milk in 1995 was $11.70 per cwt., unchanged from 1994 (table 6).

The number of dairy cows in New Mexico was reported at 170,000 animals in 1995, a 13.33% increase over 1994 and a record high for the state. Replacement heifers numbered 40,000 (NM Ag. Statistics, 1996, p. 33).

Hay

Hay cash receipts ranked third in 1995 cash receipts. Total production for all hay was 1,515,000 tons in 1995, with a value of production of $171.3 million. Harvested acreage for 1995 was reported at 350,000 acres, 30,000 acres less than in 1994. Chaves County led in value of production from hay with 19.22% of the state total. Hay production in the top 10 counties comprised 73.87% of New Mexico's total. Statewide average yield per acre was reported at 4.33 tons, with an average price of $114.00 per ton. This represented a decrease of 0.21 tons per acre and a decrease of $6.00 per ton in price. Six of the top 10 counties reported a decline in constant dollar value of production. Roosevelt County reported the largest change with an increase of 53.56%, while Valencia County had the largest decrease (22.38%). The overall value of production for the top 10 counties decreased 12.85% in constant dollars (table 7).

Pecans

Although pecan production is limited to the state's southern counties, pecans ranked fourth with respect to cash receipts in 1995. Pecan production totaled 45 million pounds and generated $55.80 million in value of production in 1995. Doña Ana County reported the largest production, 36.2 million pounds, with a value of $44.8 million. Production in Doña Ana County was 80.44% of New Mexico's total. Sierra County experienced the greatest change in production with an increase of 213.53%. Constant dollar value of production increased for all counties from 1994 to 1995, in spite of production decreases in five of seven counties. In constant value dollars, pecans had a 144.94% increase in value of production (table 8).

Onions

In 1995, onions ranked fifth with respect to cash receipts. Total onion production was 4.1 million cwt.[5] in 1995. Cash receipts for onions were $52.8 million.

[4]The sum of the categories milk wholesale and milk retail from table 1.

[5]Production figures are in cwt., the reporting unit used by USDA. The industry reporting unit is the 50-pound sack.

Table 5. Cash receipts for cattle and calves and number on farms in the top 10 New Mexico counties, 1995.

	Cash receipts								Animal numbers			
	1995				1994			Percent change in constant	1995		1994	
County	Rank	Value[a] ($1000)	Percent of total cash cattle & calves receipts	Value[b] ($1000) (1990 = 100)	Rank	Value[a] ($1000)	Value[b] ($1000) (1990=100)	dollar value 1994-1995	Rank	Number on farm	Rank	Number on farm
Union	1[e]	67,178	14.52	57,965	1	84,818	75,260	-22.98	3	111000[c]	3	103000[d]
Curry	2	61,389	13.27	52,970	2	79,388	70,442	-24.80	2	116,000	2	105,000
Eddy	3	38,287	8.28	33,036	4	44,380	39,379	-16.11	4	70,000	4	68,000
Chaves	4	36,293	7.85	31,316	3	50,449	44,764	-30.04	1	130,000	1	111,000
Quay	5	15,984	3.46	13,792	7	23,056	20,458	-32.58	6	64,000	6	59,000
Colfax	6	15,745	3.40	13,586	5	23,417	20,778	-34.62	5	65,000	5	60,000
San Juan	7	14,771	3.19	12,745	11	19,125	16,970	-24.89	**20**	28,000	22	26,000
Grant	8	14,552	3.15	12,556	9	20,535	18,221	-31.09	**8**	57,000	9	54,000
San Miguel	9	14,314	3.09	12,351	9	20,895	18,540	-33.38	**7**	58,000	11	50,000
Lea	10	14,075	3.04	12,145	6	23,056	20,458	-40.64	**6**	64,000	8	55,000
Total[g]		292,588	63.25	252,463		389,119	345,271	-26.88		763,000[f]		691000[f]

[a]Source: New Mexico Agricultural Statistics, 1996, p. 20.
[b]The Consumer Price Index with base year 1990 = 100 was calculated to be 115.8935 for 1995 and 112.6996 for 1994.
[c]Source: New Mexico Agricultural Statistics, 1995, p. 35.
[d]Source: New Mexico Agricultural Statistics, 1994, p. 37.
[e]Light shading indicates a higher nominal dollar rank in 1995 than in 1994; dark shading indicates a lower nominal dollar rank in 1995 than in 1994; no shading indicates no change in the nominal dollar rank.
[f]There were 1,500,000 cattle and calves on inventory as of January 1, 1995. Source: New Mexico Agricultural Statistics, 1995, p. 35.
There were 1,410,000 cattle and calves on inventory as of January 1, 1994. Source: New Mexico Agricultural Statistics, 1994, p. 35.
[g]Due to rounding, some columns may not sum to the total.

Table 6. Cash receipts for milk in the top 10 New Mexico counties, 1995.[a]

	1995				1994			Percent change in constant dollar value 1993-1994
County	Rank	Value[b] ($1000)	Percent of total milk cash receipts	Value[c] ($1000) (1990 = 100)	Rank	Value[b] ($1000)	Value[c] ($1000) (1900=100)	
Chaves	1	156,450	36.32	134,995	1	162,187	143,911	-6.20
Doña Ana	2	79,358	18.42	68,475	2	71,826	63,732	7.44
Roosevelt	3	56,685	13.16	48,911	3	47,266	41,940	16.62
Curry	4	36,278	8.42	31,303	4	30,120	26,726	17.13
Eddy	5	24,941	5.79	21,521	5	23,170	20,559	4.68
Lea	6	24,941	5.79	21,521	6	17,377	15,419	39.57
Valencia	7	15,872	3.68	13,695	7	12,048	10,690	28.11
Bernalillo	8	13,604	3.16	11,738	8	11,585	10,280	14.19
Socorro	9	11,337	2.63	9,782	9	9,731	8,634	13.29
Sierra	10	5,895	1.37	5,087	11	3,939	3,495	45.53
Total[e]		425,361[d]	98.74	367,027[d]		389,249[d]	345,386	6.27

[a]County-level wholesale milk receipts are not reported; therefore, receipts for all milk are used for the country ranking.
[b]Source: New Mexico Agricultural Statistics, 1996, p. 20.
[c]The Consumer Price Index with base year 1990 = 100 was calculated to be 115.8935 for 1995 and 112.6996 for 1994.
[d]Total milk production in New Mexico was 3,623 million pounds in 1995 and 3,325 million pounds in 1994. The wholesale price of milk was $11.70 per 100 pounds in 1995 and $11.70 per 100 pounds in 1994. Source: New Mexico Agriculturaltistics, 1996, p. 37.
[e]Due to rounding, some columns may not sum to the total.

Table 7. Value of production and production of hay in the top 10 New Mexico counties, 1995.

County	1995 Rank	1995 Production[a] tons	1995 Value[b] ($1000)	1995 Percent of total value of N.M. production	1995 Value[c] ($1000) (1990 = 100)	1994 Rank	1994 Production[d] tons	1994 Value[b] ($1000)	1994 Value[c] ($1000) (1990 = 100)	Percent change in production 1993-1994	Percent change in constant dollar value 1993-1994
Chaves	1	290,280	33,092	19.22	28,554	1	303,400	36,408	32,305	-4.32	-11.61
Eddy	2	199,500	22,743	13.21	19,624	2	204,240	24,509	21,747	-2.32	-9.76
San Juan	3	138,410	15,779	9.16	13,615	3	138,450	16,614	14,742	-0.03	-7.64
Doña Ana	4	110,500	12,597	7.32	10,869	4	106,430	12,772	11,332	3.82	-4.09
Socorro	5	80,980	9,232	5.36	7,966	5	66,980	8,038	7,132	20.90	11.69
Quay	6[e]	78,680	8,970	5.21	7,739	7[d]	50,130	6,016	5,338	56.95	45.00
Lea	7	69,690	7,945	4.61	6,855	8	49,150	5,898	5,233	41.79	30.99
Roosevelt	8	60,390	6,884	4.00	5,940	12	36,330	4,360	3,868	66.23	53.56
Valencia	9	45,380	5,173	3.00	4,464	6	54,010	6,481	5,751	-15.98	-22.38
Taos	10	41,810	4,766	2.77	4,113	9	40,250	4,830	4,286	3.88	-4.04
Total[f]		1,115,620[g]	127,181	73.87	109,739		1,049,370	125,924	111,735	6.31	-12.85

[a]Source: New Mexico Agricultural Statistics, 1996, p. 51.
[b]Value = production x price per ton. Price per ton = $114.00 in 1995 and $120.00 in 1994. Source: New Mexico Agricultural Statistics, 1996, p. 51.
[c]The Consumer Price Index with base year 1990 = 100 was calculated to be 115.8935 for 1995 and 112.6996 for 1994.
[d]Source: New Mexico Agricultural Statistics, 1995, p. 51.
[e]Light shading indicates a higher nominal dollar rank in 1995 than in 1994; dark shading indicates a lower nominal dollar rank in 1995 than in 1994; no shading indicates no change in nominal dollar rank.
[f]Due to rounding, some columns may not sum to the total.
[g]The 1995 production for all hay was 1,515,000 tons with a value of production of $171,275,000. The 1994 production was 1,447,000 tons with a value of production of $173,571,000. The harvested acreage was 350,000 in 1995 with an average yield per acre of 4.33 tons. In 1994, the harvested acreage was 320,000 with an average yield per acre of 4.52. Source: New Mexico Agricultural Statistics, 1996, p. 51.

Table 8. Value of production and production of pecans in New Mexico, 1995.

County	1995 Rank	1995 Production[a] (1000 lbs)	1995 Value[b] ($1000)	1995 Percent of total value of NM production	1995 Value[d] ($1000) (1990 = 100)	1994 Rank	1994 Production[c] (Pounds)	1994 Value[b] ($1000)	1994 Value[d] ($1000) (1990 = 100)	Percent change in production 1993-1994	Percent change in constant dollar value 1993-1994
Doña Ana	**1**	36,200	44,888	80.44	38,732	1	25,100	15,060	13,705	44.22	182.61
Chaves	**2**	3,500	4,340	7.78	3,745	2	3,950	2,370	2,157	-11.39	73.63
Otero	**3**	1,500	1,860	3.33	1,605	3	2,200	1,320	1,201	-31.82	33.60
Eddy	**4**[e]	1,500	1,860	3.33	1,605	5	1,620	972	885	-7.41	81.44
Luna	**5**	1,100	1,364	2.44	1,177	4	1,660	996	906	-33.73	29.85
Lea	**6**	600	744	1.33	642	6	970	582	530	-38.14	21.21
Sierra	**7**	400	496	0.89	428	7	250	150	137	60.00	213.53
Other Counties	**8**	200	248	0.44	214	8	250	150	137	-20.00	56.76
Total		45,000	55,800	100.00[f]	48,148		36,000	21,600	19,657	25.00	144.94

[a]Source: New Mexico Agricultural Statistics, 1996, p. 64.
[b]Value = production x price per lb. Price per lb. = $1.24 in 1995 and $1.29 in 1994. Source: New Mexico Agricultural Statistics, 1996, p. 64.
[c]Source: New Mexico Agricultural Statistics, 1995, p. 64.
[d]The Consumer Price Index, with base year 1990 = 100, was calculated to be 115.8935 for 1995 and 112.6996 for 1994.
[e]Light shading indicates a higher nominal dollar rank in 1995 than in 1994, dark shading indicates a lower nominal dollar rank in 1995 than in 1994, no shading indicates no change in nominal dollar rank.
[f]Due to rounding, some columns may not sum to the total.

Table 9. Value of production and production of onions in New Mexico, 1995.

	1995					1994					
County	Rank	Production[a] CWT (1000)	Value[b] ($1000)	Percent of total value of NM production	Value[c] ($1000) (1990 = 100)	Rank	Production[d] CWT (1000)	Value[b] ($1000)	Value[c] ($1000) (1990 = 100)	Percent change in production 1994-1995	Percent change in constant dollar value 1994-1995
Doña Ana	1[e]	1,794	23,143	43.81	19,969	2	1,357	13,109	11,631	32.20	71.68
Luna	2	1,729	22,304	42.22	19,245	1	1,569	15,157	13,449	10.20	43.10
Sierra	3	182	2,348	4.44	2,026	3	156	1,507	1,337	16.67	51.50
Other Counties	4[f]	390	5,031	9.52	4,341	4	240	2,318	2,057	62.50	111.02
Total[g]		4,095[h]	52,826	100	45,581		3,322[h]	32,091	28,474	23.27	60.08

[a]Source: New Mexico Agricultural Statistics, 1996, p. 68.
[b]Value = production x price per CWT. Price per CWT = $12.90 in 1995 and $9.66 in 1994. Source: New Mexico Agricultural Statistics, 1996, p. 68.
[c]The Consumer Price Index with base year 1990 = 100 was calculated to be 115.8935 for 1995 and 112.6996 for 1994.
[d]Source: New Mexico Agricultural Statistics, 1995, p. 67.
[e]Light shading indicates a higher nominal dollar rank in 1995 than in 1994; dark shading indicates a lower nominal dollar rank in 1995 than in 1994; no shading indicates no change in the nominal dollar rank
[f]In 1995, Other Counties includes Chaves, Curry, Eddy, Hidalgo, Lea, Roosevelt, San Juan, and Socorro counties. In 1994, it includes Chaves, Curry, Eddy, Hidalgo, Lea, Roosevelt, San Juan, and Socorro counties.
[g]May not sum due to rounding.
[h]In 1995, 9,100 acres of onions were planted and 9,100 were harvested, with an average yield of 450 cwt per acre.
In 1994, 8,500 acres of onions were planted and 7,900 were harvested, with an average yield of 420 cwt per acre
Source: New Mexico Agricultural Statistics, 1996, p. 68.

Production increased 23.27% from 1994. In constant value dollars, cash receipts increased 60.08%. Luna and Doña Ana counties accounted for 86.03% of New Mexico's total value of production for onions. Doña Ana County experienced the largest change in constant dollar cash receipts with an increase of 71.68% (table 9).

Acreage planted in onions increased from 8,800 in 1994 to 9,100 in 1995. Acreage harvested increased from 7,900 in 1994 to 9,100 in 1995. The nominal price per hundredweight increased from $9.66 in 1994 to $12.90 in 1995.

Chile

Chile ranked sixth in cash receipts during 1995. Total chile production in 1995 was 86.50 processed tons: 60,800 tons of green[6] and 25,700 tons of red[7] (N.M. Ag. Statistics, 1995, p.70). The harvested acreage in the top 10 counties comprised 98.04% of the state's total for chile. Luna County led in harvested acreage for chile with 36.61% of the state's total. Harvested acreage increased in one and declined for eight of the top 10 counties with an overall decrease of 19.19% from 1994 to 1995. Eddy County experienced the greatest change in harvested acreage with a decrease of 44.44% (table 10).

Harvested acreage in 1995 was 22,400, a decrease of 19.7% from 27,900 in 1994 (N.M. Ag. Statistics, 1996, p.70). Harvested acreage was the lowest since 1989.

Greenhouse Nursery

At $39 million, greenhouse nursery cash receipts ranked seventh in 1995. In nominal dollars, this represents a decrease of 5.26%. In constant dollars, the cash receipts for greenhouse nursery decreased 7.87% (table 1). Records of county-level cash receipts for greenhouse nursery products are not available from the New Mexico Crop and Livestock Reporting Service. Cash receipts include sales of plants grown and finished entirely in New Mexico, sales of plants imported into New Mexico and finished in New Mexico, and sales of plants imported into New Mexico as finished products.

Cotton Lint

Cotton production in New Mexico is concentrated in the state's southern and southeastern areas. Cotton lint ranked eighth with respect to cash receipts in 1995. In constant dollar value, cash receipts for cotton lint decreased 9.37% from 1994. Cotton production in New Mexico is divided between Upland and American-Pima. Upland cotton accounted for 72.23% of the 1995 total value of production for cotton. Acreage planted to Upland was 61,000 in 1995 and 55,000 in 1994. Acreage harvested was 56,000 in 1995 and 50,000 in 1994. The price per pound for Upland was $0.817 ($392.16 per 480-pound bale) in 1995, an increase of $.094 per pound from 1994. American-Pima planted acreage was 15,000, up from 11,000 in 1994 Acreage harvested increased from 10,700 to 15,000. The 1995 price-per-pound for American-Pima was $1.180 ($566.40 per 480-pound bale), an increase of $0.15 from 1994 (table 11).

In constant dollar value, Quay County had the largest (66.47%) increase in Upland value of production, and Doña Ana County had the largest decrease (31.35%). The Upland per-county average change in value of production in constant dollars was a decrease of 7.70%. Doña Ana County accounted for 98.94% of New Mexico's value of production for American-Pima. Doña Ana's production decreased 4.19%, and the constant dollar value of production for New Mexico decreased 6.75%.

Corn

Corn ranked ninth in cash receipts in 1995 with $28.2 million. Cash receipts for corn harvested for grain in the top 10 counties accounted for 99.09% of New Mexico's total. For the top 10 counties, production decreased 8.28% from 1994 to 1995, but constant dollar cash receipts increased 5.25%. Six counties (Union, Santa Fe, Torrance, Hidalgo, Socorro, and McKinley) experienced an increase in production and constant dollar cash receipts. Santa Fe County experienced the largest change in constant dollar cash receipts with an increase of 127.42% (table 12).

The price per bushel of corn increased 18.00% from $2.50 in 1994 to $2.95 in 1995. Corn acreage planted to all purposes decreased from 133,000 in 1994 to 123,000 in 1995. Acreage harvested for grain was 73,000, down from 85,000 in 1994. Part of the decrease in acreage harvested for grain is accounted for by an increase in acreage harvested for silage (NM Ag. Statistics, 1995, p. 55).

Potatoes

Potatoes ranked 10th in cash receipts in 1995, generating $24.05 million in cash receipts. Total production was 3,939 cwt. Three counties (San Juan, Curry, and

[6] Green chile: long medium, long hot, bell pepper/pimento and jalapeño. jalapeño includes both green and red varieties.

[7] Red chile: long medium, long hot, paprika, and cayenne.

Table 10. Chile acreage in the top 10 counties of New Mexico, 1995.

County	1995 Rank	1995 Harvested[a] acreage	1995 Percent of N.M. harvested acreage	1994 Rank	1994 Harvested[b] acreage	1994 Percent of N.M. harvested acreage	Percent change in harvested acreage 1994-1995
Luna	1[c]	8,200	36.61	2	8,000	28.93	2.50
Doña Ana	2	6,000	26.79	1	8,200	29.66	-26.83
Hidalgo	3	2,200	9.82	4	2,300	8.32	-4.35
Chaves	4	1,400	6.25	3	2,500	9.04	-44.00
Lea	5	1,100	4.91	7	1,200	4.34	-8.33
Sierra	6	1,000	4.46	5	2,000	7.23	-50.00
Eddy	7	1,000	4.46	6	1,800	6.51	-44.44
Socorro	8	360	1.61	8	400	1.45	-10.00
Bernalillo	9	250	1.12	10	250	0.90	0.00
Sandoval	9	250	1.12	10	250	0.90	0.00
Valencia	10	200	0.89	9	275	0.99	-27.27
Total[d]		21,960	98.04		27,175	98.28	-19.19

[a]Source: New Mexico Agricultural Statistics, 1996, p. 70.
[a]Source: New Mexico Agricultural Statistics, 1995, p. 70.
[c]Light shading indicates a higher rank in 1995 than in 1994; dark shading indicates a lower rank in 1995 than in 1994; no shading indicates no change in rank.
[d]Due to rounding, some columns may not sum to the total.

Table 11. Value of production and production of cotton in New Mexico, 1995.

County	1995 Rank	1995 Production[a] 480 lb net bales	1995 Value[b] ($1000)	1995 Percent of total value of NM production	1995 Value[c] ($1000) (1990 = 100)	1994 Rank	1994 Production[d] 480 lb net bales	1994 Value[b] ($1000)	1994 Value[c] ($1000) (1990 = 100)	Percent change in production 1994-1995	Percent change in constant dollar value 1994-1995
Upland											
Doña Ana	1[e]	13,800	5,412	19.44	4,670	1	19,600	6,802	6,035	-29.59	-31.35
Lea	2	12,700	4,980	17.89	4,297	2	12,850	4,459	3,957	-1.17	-3.63
Eddy	3	11,700	4,588	16.48	3,959	3	12,400	4,303	3,818	-5.65	-8.00
Chaves	4	12,500	4,902	17.61	4,230	4	12,200	4,234	3,757	2.46	-0.10
Luna	5	7,900	3,098	11.13	2,673	5	7,900	2,742	2,433	0.00	-2.50
Roosevelt	6	3,800	1,490	5.35	1,286	6	3,600	1,249	1,109	5.56	2.92
Hidalgo	7	3,500	1,373	4.93	1,184	7	3,200	1,111	985	9.38	6.65
Curry	8	3,500	1,373	4.93	1,184	8	2,050	711	631	70.73	66.47
Quay	9	1,600	627	2.25	541	9	1,200	416	370	33.33	30.01
Other[f] Counties								0	0		
Total[g]		71,000	27,843	100.00	24,025		75,000	26,028	23,095	-5.33	-7.70
Pima											
Doña Ana	1	18,700	10,592	98.94	9,139	1	19,250	9,517	8,445	-2.86	-3.97
All Other	2[h]	200	113	1.06	98	2	250	124	110	-20.00	-20.92
Total[g]		18,900	10,705	100.00	9,237		19,500	9,641	8,554	-3.08	-4.19
Total all cotton[g]		89,900[i]	38,548		33,262		94,500[i]	35,669	31,649	-4.87	-6.75

[a]Source: New Mexico Agricultural Statistics, 1996, p. 57 for Upland cotton and p. 59 for Pima cotton.

[b]Value = production x price per pound. Price per pound = $0.817 in 1995 and $0.723 in 1994 for Upland cotton. Source: New Mexico agricultural Statistics, 1996, p. 57.
Price per pound = $1.180 in 1995 and $1.030 in 1994 for Pima cotton. Source: New Mexico Agricultural Statistics, 1996, p. 59.

[c]The Consumer Price Index, with base year 1990 = 100, was calculated to be 115.8935 for 1995 and 112.6996 for 1994.

[d]Source: New Mexico Agricultural Statistics, 1995, p. 57 for Upland cotton and p. 59 for Pima cotton.

[e]Light shading indicates a higher nominal dollar rank in 1995 than in 1994; dark shading indicates a lower nominal dollar rank in 1995 than in 1994; no shading indicates no change in nominal dollar rank.

[f]Upland cotton: Includes Grant, and Sierra counties.

[g]Due to rounding, some columns may not sum to the total.

[h]Pima cotton: Includes Eddy, Hidalgo, Sierra, and Luna counties.

[i]In 1995, 61,000 acres of Upland cotton were planted and 56,000 acres were harvested, with an average yield of 609 lb. per acre.
In 1994, 55,000 acres of Upland cotton were planted and 50,000 acres were harvested, with an average yield of 720 lb. per acre.

Table 12. Value of production and production of corn harvested for grain in the top 10 New Mexico counties, 1995.

	1995					1993					
County	Rank	Production[a] bushels (1000)	Value[b] ($1000)	Percent of Total value of N.M. production	Value[c] ($1000) (1990 = 100)	Rank	Production[d] Bushels (1000)	Value[b] ($1000)	Value[c] ($1000) (1990 = 100)	Percent change in production 1994-1995	Percent change in value constant dollars 1994-1995
Curry	1	4,324,800	12,758,160	37.03	11,008,517	1	4,522,000	11,305,000	10,031,090	-4.36	9.74
Union	2[e]	3,587,800	10,584,010	30.72	9,132,528	2	3,136,000	7,840,000	6,956,545	14.41	31.28
Roosevelt	3	1,780,800	5,253,360	15.25	4,532,919	3	2,205,000	5,512,500	4,891,321	-19.24	-7.33
San Juan	4	854,000	2,519,300	7.31	2,173,805	4	1,924,000	4,810,000	4,267,982	-55.61	-49.07
Santa Fe	5	317,100	935,445	2.71	807,159	7	160,000	400,000	354,926	98.19	127.42
Torrance	6	312,400	921,580	2.67	795,195	6	169,200	423,000	375,334	84.63	111.86
Hidalgo	7	192,000	566,400	1.64	488,724	8	123,500	308,750	273,958	55.47	78.39
Socorro	8	84,600	249,570	0.72	215,344	9	54,000	135,000	119,787	56.67	79.77
Quay	9	80,500	237,475	0.69	204,908	5	299,000	747,500	663,268	-73.08	-69.11
McKinley	10	40,000	118,000	0.34	101,818	10	26,000	65,000	57,675	53.85	76.54
Total[f]		11,574,000	34,143,300	99.09	29,460,918		12,618,700	31,546,750	27,991,887	-8.28	5.25

[a]Source: New Mexico Agricultural Statistics, 1996, p. 56.

[b]Value = production x price per bu. Price per bu. = $2.95 in 1995 and $2.50 in 1994; source New Mexico Agricultural Statistics, 1996, p. 55.

[c]The Consumer Price Index, with the base year 1990 = 100, was calculated to be 115.8935 in for 1995 and 112.6996 for 1994.

[d]Source: New Mexico Agricultural Statistics, 1995, p. 55.

[e]Light shading indicates a higher nominal dollar rank in 1995 than in 1994; dark shading indicates a lower nominal dollar rank in 1995 than in 1994; no shading indicates no change in nominal dollar rank.

[f]Due to rounding, some columns may not sum to the total.

Table 13. Value of production and production of Irish potatoes in New Mexico, 1995.

	1995					1994					
County	Rank	Production[a] Cwt. (1000)	Value[b] ($1000)	Percent of total value of N.M. production	Value[c] ($1000) (1990 = 100)	Rank	Production[a] Cwt. (1000)	Value[b] ($1000)	Value[c] ($1000) (1990 = 100)	Percent change in production 1994-1995	Percent change in value constant dollars 1994-1995
San Juan	1[d]	2,394	16,758	64.03	14,460	1	3,000	18,150	16,105	-20.20	-10.21
Curry	2	752	5,264	20.11	4,542	2	459	2,777	2,464	63.83	84.34
Roosevelt	3	533	3,731	14.26	3,219	3	437	2,644	2,346	21.97	37.23
Other Counties	4	60	420	1.60	362	4	41	248	220	46.34	64.65
Total		3,739	26,173	100.00	22,584		3,937	23,819	21,135	-5.03	6.86

[a]Source: New Mexico Agricultural Statistics, 1996, p. 60.
[b]Value = Production x Price per cwt. Price per cwt. = $7.00 in 1995 and $6.05 in 1994; Source: New Mexico Agricultural Statistics, 1996, p. 60.
[c]The Consumer Price Index, with base year 1990 = 100, was calculated to be 115.8935 for 1995 and 112.6996 for 1994.
[d]San Juan County fall potatoes; remaining counties summer potatoes.

Roosevelt) produced 98.40% of New Mexico's total production of potatoes. Total production for the state decreased 5.03%, but the constant dollar value of production increased 6.86% (table 13). Given the decrease in production, the increase in the value of production was due to the increase in market price.

Acreage planted to potatoes increased from 10,100 in 1994 to 10,500 in 1995. The acreage harvested increased from 9,500 to 10,500. The nominal price per cwt. increased from $6.05 to $7.00.

ANALYSIS

Rank Order

The rank order of five of the top 10 commodities (cattle and calves, milk-wholesale, hay, corn and potatoes) remained unchanged from 1994 to 1995. Of the remaining five commodities in the top 10, two (pecans and onions) moved up in rank, and three (chile, greenhouse nursery, and cotton lint) decreased. All of the top 10 were also in the top 10 in 1994. The top 10 commodities accounted for 89.60% of New Mexico's total cash receipts generated by agriculture. Cattle and calves ranked first and accounted for 33.13% of all agricultural cash receipts down from 43.18% in 1994. Milk - wholesale ranked second and accounted for 28.61% of cash receipts, up from 25.02% in 1994 (table 1).

Of New Mexico's top 10 commodities in 1995, five (cattle and calves, milk wholesale, pecans, onions, and potatoes) ranked in the upper half of the states reporting for the respective commodities (table 14). New Mexico's pecan production ranked third out of 14. Cash receipts from pecans comprised 3.83% of New Mexico's total agricultural cash receipts. Although New Mexico ranked only seventh out of 16 in total national onion production, New Mexico is the largest US producer of summer, non-storage onions (USDA, *Ag. Stat. 1997*, p. IV-14). New Mexico's chile production ranks high at the national level, but national production statistics for chile are not reported separately from all peppers.

Changes 1994 to 1995

New Mexico experienced a 10.44% decrease in agricultural cash receipts from 1994 to 1995 in constant dollars. Of the 29 commodities reported, 11 had an increase in constant dollar cash receipts. The increases ranged from 75.27% (pecans) to 2.19% (cottonseed). The decreases in constant dollar cash receipts ranged from 82.12% (farm chickens) to 2.76% (misc. vegetables, Christmas trees, other fruits and nuts, and other poultry). Cash receipts were used to determine the top 10 commodities; however, where the data were not available, value of production figures were used to estimate the county-level production of the commodity.

Components of Change in Value of Production

Analysis of the change in the value of production (VOP) requires that the change be separated into components (see appendix B). From an economic point of view, the change in VOP (ΔVOP) has three components. The first component, a quantity effect ($\Delta Q * P$) , results from the change in quantity (ΔQ) multiplied by the original price (P). The second component, a price effect ($\Delta P * Q$) , results from the change in price (ΔP) multiplied by the original quantity (Q). The third component, an interaction effect ($\Delta Q * \Delta P$), results from the change in quantity (ΔQ) multiplied by the change in price (ΔP). Since changes in price or quantity may partially offset or cancel one another, identifying the component parts of the change in VOP is necessary to determine the relative impacts of price and quantity.

Nominal Dollar Comparisons

The relative impacts of price and quantity changes in nominal dollars are shown in table 15. For seven of the eight commodities[8] analyzed, ΔVOP in nominal dollars is positive. For six of the eight commodities, the change in VOP produced by the price effect was greater in absolute terms than the change resulting from the quantity effect. Based on the relative dominance of the price effect for the individual producer during the 1994-95 period, market price had more impact on total cash receipts for the top 10 commodities than decisions and variables that influenced production and quantities marketed. Only pecans with an 87.50% increase in quantity had a marked production impact on cash receipts.

The relative changes and signs for ΔVOP and its components in nominal dollars are shown in figure 1. In nominal terms, the quantity effect was positive for four of the eight commodities. The price effect was positive for five of the eight commodities. The nominal dollar price effect was zero for wholesale milk. The interaction effect was positive for one of the eight commodities (onions). The nominal dollar interaction effect was zero for wholesale milk. In one case (onions), price and quantity effects were both positive. In four cases (Up-

[8]Available price and quantity data did not permit this analysis for cattle and calves, chile, and greenhouse nursery. For this analysis, cotton was divided into Upland and Pima. This results in eight commodities for analysis.

Table 14. Production of top 10 New Mexico agricultural commodities by cash receipts in relation to total U.S. production, 1995.

Rank	Commodity	Dollars[a] (1000)	Percent of N.M. Ag. cash receipts	Total U.S.[b] production	Units	New Mexico production as percent of U.S. total	New Mexico rank in total U.S. production 1995	1994
1	Cattle and Calves	483,140	33.13	102,755,000	Head	1.45	24/50[c]	26/50
2	Milk Wholesale	417,222	28.61	155,644,000,000[d]	Pounds	2.32	12/50	12/50
3	Hay	130,484	8.95	154,166,000	Tons	0.98	30/48	32/50
4	Pecans	55,800	3.83	268,000,000	Pounds	16.79	3/14	15/17
5	Onions	52,826	3.62	64,182,000	CWT	6.38	7/16	8/16
6	Chile	44,840	3.07	N/A	----	-----	----	-----
7	Greenhouse Nursery	39,062	2.68	N/A	----	-----	----	-----
8	Cotton Lint	30,979	2.12	17,899,000.8	Bales	0.39	16/17	3/13
9	Corn	28,214	1.93	7,373,876,000	Bushels	0.15	31/41	31/41
10	Potatoes	24,045	1.65	443,606,000	CWT	0.84	13/32	13/33
	Total	1,306,612	89.60					

[a]Source: New Mexico Agricultural Statistics - 1996, p.

[b]Source: Agricultural Statistics, USDA 1997.

1. Table 372. All cattle and calves: Number and value, by states, Jan. 1, 1994-96, p. VII-2
2. Table 8-13. Milk and milk fat production: Number of milk cows, yield per cow, and total quantity produced, by states, 1995 (preliminary), p. VIII-
3. Table 6-5. Hay, all: Area, yield, and production, by states, 1994-96, p. VI-4.
4. N/A. USDA does not report chile production as a separate commodity.
5. N/A. USDA does not report greenhouse nursery as a separate category
6. Table 2-2. Cotton: Area, yield, and production, by states, 1994-96, p. II-2.
7. Table 4-26. Onions, commercial crop: Area, production, shrinkage and loss, and value per hundredweight, by states, 1994-96, p. IV-14
8. Table 5-86. Pecans (in the shell basis): Production and marketing year average price per pound, by states, 1994-96, p. V-40.
9. Table 1-40. Corn: Area, yield, and production, by states, 1994-96, p. I-
10. Table 4-32. Potatoes: Area, production, and marketing year price per hundredweight received by farmers, by states, 1994-96, pp. IV-16-

[c]Numbers indicates New Mexico's rank in the total number of states reported

[d]USDA figure reported is for milk production.

Table 15. Relative impacts of price and quantity changes on value of production for New Mexico's top 10 commodities in nominal dollars, 1994-1995.

	1995			1994								
Crop (unit)	Price[a] per unit (dollars)	Quantity[a]	Value of production ($1000)	Price[a] per unit (dollars)	Quantity[a]	Value of production ($1000)	Δ Price 1994-1995 (dollars)	Δ Quantity 1994-1995	Δ VOP 1994-1995 ($1000)	Δ Quantity * price ($1000)	Δ Price * quantity ($1000)	Δ Quantity * Δ price ($1000)
Cattle & calves[b]												
Milk–wholesale (CWT)	11.70	35,660,000	417,222	11.70	32,680,000	382,356	0.00	2,980,000	34,866	34,866	0	0
Hay (ton)	114.00	1,515,000	172,710	120.00	1,447,000	173,640	-6.00	68,000	-930	8,160	-8,682	-408
Pecans (pound)	1.24	45,000,000	55,800	1.29	24,000,000	30,960	-0.05	21,000,000	24,840	27,090	-1,200	-1,050
Onions (CWT)	12.90	4,095,000	52,826	9.66	3,318,000	32,052	3.24	777,000	20,774	7,506	10,750	2,517
Chile (ton)[c]												
Greenhouse nursery[d]												
Cotton lint												
Upland (480 lb bale)	392.16	71,000	27,843	347.04	75,000	26,028	45.12	-4,000[e]	1,815	-1,388	3,384	-180
Pima (480 lb bale)	566.40	18,900	10,705	494.40	19,500	9,641	72.00	-600	1,064	-297	1,404	-43
Corn (bushel)	2.95	11,680,000	34,456	2.50	12,750,000	31,875	0.45	-1,070,000	2,581	-2,675	5,738	-482
Potatoes (CWT)	7.00	3,738,000	26,166	6.05	4,088,000	24,732	0.95	-350,000	1,434	-2,118	3,884	-333

[a]Sources for price and quantity data

Milk-Wholesale, New Mexico Agricultural Statistics, 1996, p. 37.

Hay, New Mexico Agricultural Statistics, 1996, p. 51.

Cotton, New Mexico Agricultural Statistics, 1996, pp. 57-59.

Onions, New Mexico Agricultural Statistics, 1996, p. 68.

Pecans, New Mexico Agricultural Statistics, 1996, p. 64.

Corn, New Mexico Agricultural Statistics, 1996, p. 55.

Potatoes, New Mexico Agricultural Statistics, 1996, p. 60.

[b]The category includes different prices for different types of cattle. The different prices and price movements preclude the determination of one value for the category.

[c]Chile includes six different types. The different prices and price movements preclude the determination of one value for the category.

[d]Greenhouse Nursery data are not reported for units; therefore, these calculations are not possible.

[e]Numbers in parentheses are negative numbers.

Table 16. Relative impacts of price and quantity changes on value of production for New Mexico's top 10 commodities in constant dollars (1990 = 100), 1994-1995.

	1995			1994								
Crop (unit)	Price[b] per unit (dollars) (1990 = 100)	Quantity[b]	Value of production ($1000) (1990 = 100)	Price[b] per unit (dollars) (1990 = 100)	Quantity[b]	Value of production ($1000) (1990 = 100)	Δ Price 1994-1995 (dollars) (1990 = 100)	Δ Quantity 1994-1995	Δ VOP 1994-1995 ($1000) (1990 = 100)	Δ Quantity * price ($1000) (1990 = 100)	Δ Price * quantity ($1000) (1990 = 100)	Δ Quantity * Δ price ($1000) (1990 = 100)
Cattle & calves[c]												
Milk - wholesale (CWT)	10.10	35,660,000	360,005	10.38	32,680,000	339,270	-0.29[e]	2,980,000	20,735	30,937	-9,350	-853
Hay (ton)	98.37	1,515,000	149,025	106.48	1,447,000	154,073	-8.11	68,000	-5,049	7,240	-11,737	-552
Chile (ton)[d]												
Greenhouse nursery[e]												
Cotton lint												
Upland (480 lb bale)	338.38	71,000	24,025	307.93	75,000	23,095	30.45	-4,000	930	-1,232	2,283	-122
Pima (480 lb bale)	488.72	18,900	9,237	438.69	19,500	8,554	50.04	-600	682	-263	976	-30
Onions (CWT)	11.13	4,095,000	45,581	8.57	3,318,000	28,440	2.56	777,000	17,141	6,660	8,492	1,989
Pecans (pound)	1.07	45,000,000	$48,148	1.14	24,000,000	27,471	-0.07	21,000,000	20,676	24,037	-1,793	-1,568
Corn (bushel)	2.55	11,680,000	29,731	2.22	12,750,000	28,283	0.33	-1,070,000	1,448	-2,374	4,171	-350
Potatoes (CWT)	6.04	3,738,000	22,578	5.37	4,088,000	21,945	0.67	-350,000	632	-1,879	2,746	-235

[a]The consumer Price Index, with base year 1990 = 100, was calculated to be 115.8935 for 1995 and 112.6996 for 1994.

[b]Sources for price and quantity data

Milk - Wholesale, New Mexico Agricultural Statistics, 1996, p. 37.

Hay, New Mexico Agricultural Statistics, 1996, p. 51.

Cotton, New Mexico Agricultural Statistics, 1996, pp. 57-59.

Onions, New Mexico Agricultural Statistics, 1996, p. 68.

Pecans, New Mexico Agricultural Statistics, 1996, p. 64.

Corn, New Mexico Agricultural Statistics, 1996, p. 55.

Potatoes, New Mexico Agricultural Statistics, 1996, p. 60.

[c]The category includes different prices for different types of cattle. The different prices and price movements preclude the determination of one value for the category.

[d] Chile includes six different types. The different prices and price movements preclude the determination of one value for the cataegory.

[e]Greenhouse Nursery data are not reported for units; therefore, these calculations are not possible.

[f]Numbers in parentheses are negative numbers.

land cotton, Pima cotton, corn, and potatoes), the positive change in VOP from the price effect offsets all of the negative change in VOP from the quantity effect. In one case (pecans), the positive change in VOP from the quantity effect is 22 times greater than the negative price effect, significantly offsetting the negative price effect. For seven of the eight commodities, the change in VOP from the interaction effect is the smallest of the three change components. The interaction effect is negative in six cases (hay, pecans, Upland cotton, Pima cotton, corn, and potatoes), positive in one cases (onions), and zero for wholesale milk.

Constant Dollar Comparisons

The relative impacts of price and quantity changes on VOP in constant dollars are shown in table 16. For seven of the eight commodities analyzed, ΔVOP in constant dollars is positive. For six of the eight commodities, the change in VOP produced by the price effect was greater in absolute terms than the change resulting from the quantity effect. The change to constant dollar values did not change the importance of price relative to production and quantity marketed in the determination of ΔVOP. Price remained the dominate factor in the change in value of production except in the case of pecans.

The relative changes and signs for ΔVOP and its components in constant dollars are shown in figure 2. In constant value terms, the quantity effect was positive for four of the eight commodities. The price effect was positive for five of the eight commodities. The interaction effect was positive for one of the eight commodities. In one case (onions), the price and quantity effects were both positive. In two cases (milk - wholesale and pecans), the positive change in VOP from the quantity effect offsets all the negative change in VOP from the price effect. In four cases (Upland cotton, Pima cotton, corn, and potatoes), the positive change in VOP from the price effect offsets the negative change in VOP from the quantity effect. In constant value terms, none of the commodities had negative values for both the quantity and price effects. For all the commodities, the interaction effect is the smallest of the three change components and it was positive in only one case (onions).

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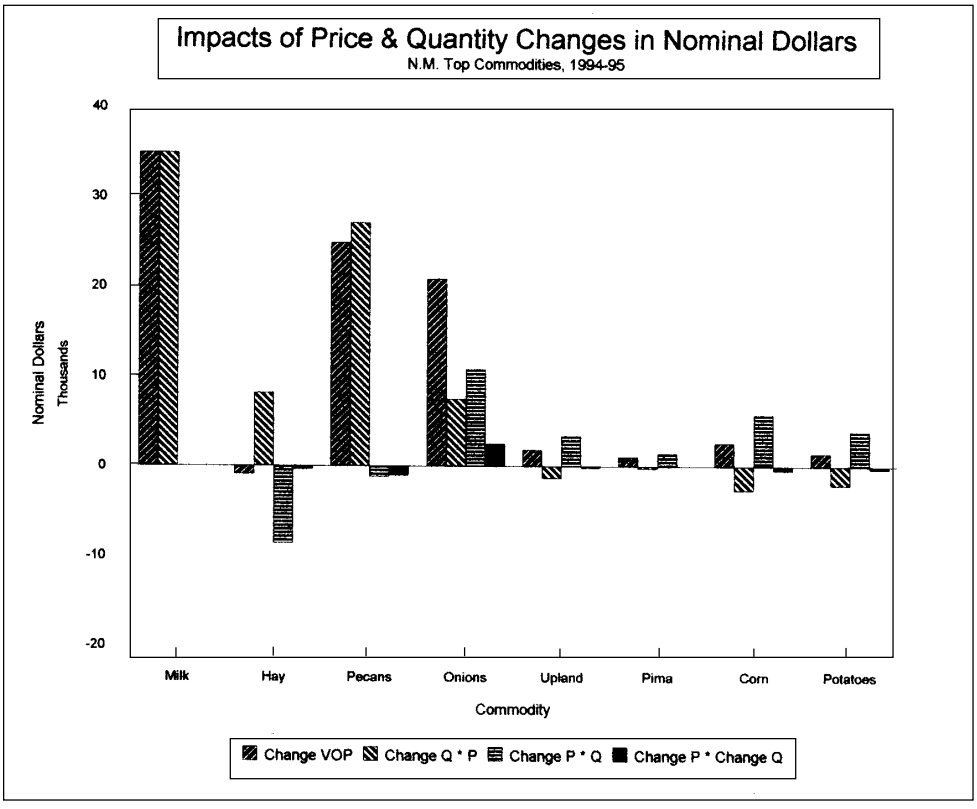
US Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States*, 1994.

Figure 1

Data and graphical presentation of price and quantity changes in nominal dollars for New Mexico's top commodities, 1994–95.*

CROP (Unit)	Δ Price 1994-1995 (dollars)	Δ Quantity 1994-1995	Δ VOP 1994-1995 ($1000)	Δ Quantity* price ($1000)	Δ Price* quantity ($1000)	Δ Quantity * Δ price ($1000)
Milk-Wholesale (CWT)	0.00	2,980,000	34,866	34,866	0	0
Hay (ton)	-6.00	68,000	-930	8,160	-8,682	-408
Pecans (pound)	-0.05	21,000,000	24,840	27,090	-1,200	-1,050
Onions (CWT)	3.24[a]	777,000	20,774	7,506	10,750	2,517
Cotton Lint-Upland (480 lb bale)	45.12	-4,000	1,815	-1,388	3,384	-180
Cotton Lint-Pima (480 lb bale)	72.00	-600	1,064	-297	1,404	-43
Corn (bushel)	0.45	-1,070,000	2,581	-2,675	5,738	-482
Potatoes (CWT)	0.95	-350,000	1,434	-2,118	3,884	-333

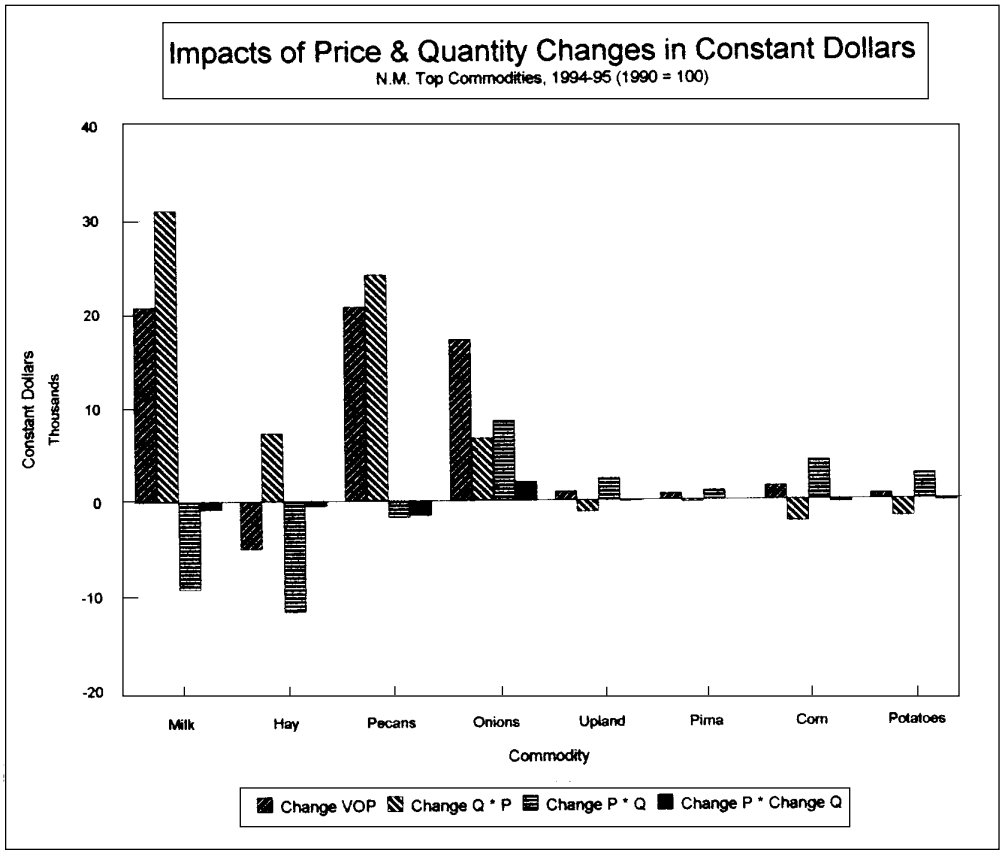


* Data and graphical presentation are for seven of the top 10 commodities. The category cattle includes prices for different types of cattle; different prices and price movements preclude the determination of one value for the category. Chile includes six different types. The different prices and price movements preclude the determination of one value for the category. Although greenhouse nursery ranks in the top 10, greenhouse nursery is a category, not a commodity; therefore, meaningful price and quantity data are not available.

Figure 2

Data and graphical presentation of price and quantity changes in constant dollars (1990 = 100) for New Mexico's top commodities, 1994 - 95.*

Crop (Unit)	Δ Price 1994-1995 (dollars) (1990 = 100)	Δ Quantity 1994-1995	Δ VOP 1994-1995 ($1000) (1990 = 100)	Δ Quantity * price ($1000) (1990 = 100)	Δ Price * quantity ($1000) (1990 = 100)	Δ Quantity * Δ price ($1000) (1990 = 100)
Milk - Wholesale (CWT)	-0.29[a]	2,980,000	20,735	30,937	-9,350	-853
Hay (ton)	-8.11	68,000	-5,049	7,240	-11,737	-552
Pecans (pound)	-0.07	21,000,000	20,676	24,037	-1,793	-1,568
Onions (CWT)	2.56	777,000	17,141	6,660	8,492	1,989
Cotton Lint - Upland (480 lb bale)	30.45	-4,000	930	-1,232	2,283	-122
Cotton Lint - Pima (480 lb bale)	50.04	-600	682	-263	976	-30
Corn (bushel)	0.33	-1,070,000	1,448	-2,374	4,171	-350
Potatoes (CWT)	0.67	-350,000	632	-1,879	2,746	-235



* Data and graphical presentation are for seven of the top 10 commodities. The category cattle includes prices for different types of cattle;different prices and price movements preclude the determination of one value for the category. Chile includes six different types. The different prices and price movements preclude the determination of one value for the category. Although greenhouse nursery ranks in the top 10,greenhouse nursery is a category, not a commodity; therefore, meaningful price and quantity data are not available.

APPENDIX A

INDEX NUMBERS AND THE CONVERSION OF NOMINAL DOLLAR VALUES

Most economic and financial statistics recorded in the United States are reported in nominal dollars. These statistics measure value in the monetary value of the dollar of the given year. When these figures are used, comparisons between years include changes in the value of the dollar. To obtain meaningful comparisons between years, the values must have the effects of inflationary or deflationary price changes removed. One method of removing inflationary effects is to divide a given year's values by a price index. This procedure expresses product value in the given year as the dollar amount it would be if the value of the dollar had remained the same as in the base year.

No single price index is appropriate for making adjustments to the values of all goods and services. However, the Consumer Price Index (CPI) is frequently used to measure inflationary changes in the economy. Changes in the CPI indicate that consumer prices have changed by the amount of the change in the CPI, and these changes are taken to mean that the purchasing power of a dollar has changed by an equivalent amount. Cash receipts and value of production represent purchasing power of the New Mexico farm and ranch community. While other indices could be used to adjust the value of production or cash receipts, the CPI adjustment is an accepted method of adjusting nominal dollar values to arrive at a value in constant terms. The adjusted values provide a more accurate measure of real changes in the income of the farm and ranch community than do nominal dollars. This study will use the CPI to adjust nominal (yearly) values to constant dollar values.

The current CPI statistics maintained by the US Department of Commerce take the period 1982-84 as the base year (1982-84 = 100). This study will use 1990 as the base year (1990 = 100). As a consequence, the Department of Commerce CPI figures have been adjusted as follows:

1982-84 = 100[9]	**1990 = 100**
1983 = 99.0	1983 = 75.2825
1984 = 104.6	1984 = 78.7833
1985 = 108.0	1985 = 82.1293
1986 = 110.5	1986 = 84.0304
1987 = 114.3	1987 = 86.9202
1988 = 119.0	1988 = 90.4943
1989 = 124.6	1989 = 94.7529
1990 = 131.5	1990 = 100.0000
1991 = 137.5	1991 = 104.5627
1992 = 140.3[10]	1992 = 106.6920
1982-84 = 100	**1990 = 100**
1993 = 144.5	1993 = 109.8859
1994 = 148.2	1994 = 112.6996
1995 = 152.4[11]	1995 = 115.8935

Using the adjusted index number, conversion of the 1991 nominal dollar values uses the following equation:

$$_{95}D_{1990} = (D1995 * 100)/115.8935$$

where:

$_{95}D_{1990}$ = the 1995 dollar value expressed in 1990 dollars, and

D_{1995} = the 1995 nominal dollar value.

For example, total farm assets in 1995 were valued at $12,380.3 million in 1995 nominal dollars. To obtain the value in 1990 dollars:

$$_{95}D_{1990} = (D_{1995} * 100)/115.8935$$

$$_{95}D_{1990} = ($12,380.3 * 100)/115.8935$$

$$_{95}D_{1990} = $10,682.5$$

Therefore, the total value of farm assets in 1995, when valued in 1990 dollars, is $10,682.5 million. This method is used to calculate the adjustments in 1994 and 1995 values throughout the report.

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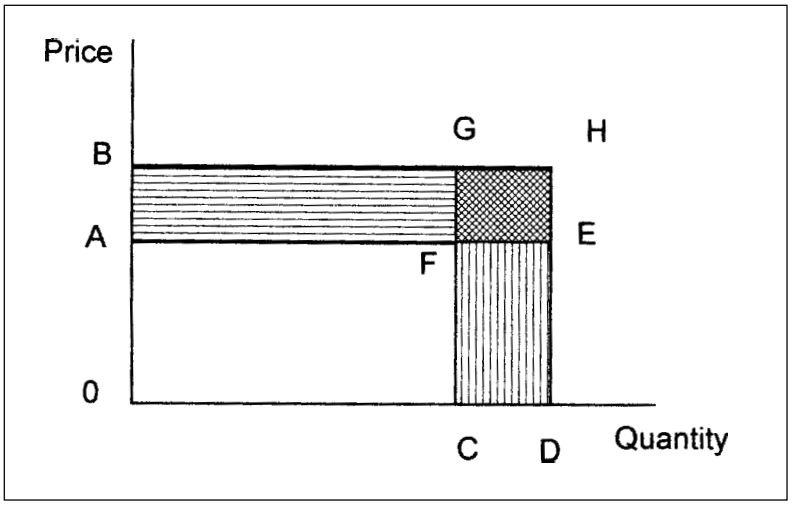
[9] CPI figures used in the series of this report prior to 1995 are for all items, Western region of the US Source: Statistical Abstract of the United States, 1993, US Department of Commerce, Bureau of the Census, US Government Printing Office, Washington, DC, p.486.

[10] Due to adjustments in the US Department of Commerce data series, CPI figures for 1992 to date will differ slightly from the figures used in earlier issues of this report series.

[11] Starting with the year 1995 this report will use the CPI for all items, for the US Source: Statistical Abstract of the United States, 1993, US Department of Commerce, Bureau of the Census, US Government Printing Office, Washington, DC, p.486

APPENDIX B

Impacts of Price and Quantity Changes on Cash Receipts and Value of Production



Changes in price (P) and quantity (Q) have direct impacts on the cash receipts received by producers and the value of production (VOP)[1]. Four possible combinations of changes[2] are considered:

1. Case 1 - an increase in price (↑P)* an increase in quantity (↑Q);
2. Case 2 - (↑P) * a decrease in quantity (↓Q);
3. Case 3 - a decrease in price (↓P)* (↑Q); and
4. Case 4 - (↓P)* (↓Q) .

The impacts of price and quantity changes on VOP can be illustrated using the figure shown above. The change in VOP (ΔVOP) is represented by three rectangles: ABGF, CFED, and FGHE. Area ABGF represents the part of ΔVOP that results from selling the original quantity at a new price[3]. Area CFED represents the part of ΔVOP that results from selling a new quantity at the original price[4]. Area FGHE represents the part of ΔVOP that results from selling the new quantity and the new price[5]. The relative sizes of ABGF and CFED will depend upon the relative sizes of the changes in price and quantity. In all cases, FGHE will be the smallest of the three areas[6]. The three areas may be thought of as a price effect, a quantity effect, and an interaction effect, respectively. The use of discrete values (the original price and quantity values), rather than incremental changes in price and quantity in the calculations of the price and quantity effect, result in slight misspecifications of the price and quantity effect. The interaction term represents the adjustment that is necessary to arrive at the true value of ΔVOP.

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[1]Throughout this appendix, value of production will be used in the discussion rather than the phrase cash receipts and value of production.

[2] Four other combinations of change are possible: an increase or decrease in P when Q remains constant; and an increase or decrease in Q, when P remains constant. When P or Q for the individual is exactly the same as the previous year, results in two portions of the change in VOP are zero. When P does not change, there is no increase or decrease associated with P and no interaction of P with Q. If the change in Q is zero, the only change in VOP is represented by the rectangle ABGF. When Q does not change, there is no increase or decrease associated with Q and no interaction of Q with P. If the change in P is zero, the only change in VOP is represented by the rectangle CFED. Because these cases of no change from the previous year are less likely to occur for the individual producer, they are not considered in the discussion.

[3]When P increases, ABGF is positive (represents an addition to VOP). When P decreases, ABGF is negative (represents a reduction in VOP).

[4]When Q increases, CFED is positive (represents an addition to VOP). When Q decreases, CFED is negative (represents a reduction in VOP).

[5]FGHE depends on the direction of change in both P and Q. When P and Q both increase or decrease, the change in VOP represented by FGHE is positive. When the change in either P or Q is a decrease, the change in VOP represented by FGHE is negative.

[6]In some analyses, the value of FGHE is omitted due to the small impact on the total value of ΔVOP.

Case 1

In Case 1, the price for the previous year is represented by OA and quantity for the previous year is OC. The previous year's VOP is represented by OAFC. In the current year, price increases to OB, quantity increases to OD, and VOP is represented by OBHD. In Case 1, all three ΔVOP components (ABGF, CFED , and FGHE) are positive.

Case 2

In Case 2, the price for the previous year is represented by OA, and the quantity for the previous year is OD. The previous year's VOP is represented by OAFD. In the current year, price increases to OB, quantity decreases to OC, and VOP is represented by OBGC. In Case 2, the price effect component (ABGF) of ΔVOP is positive, and the quantity (CFED) and interaction effect (FGHE) components are negative.

Case 3

In Case 3, the price for the previous year is represented by OB and the quantity for the previous year is OC. The previous year's VOP is represented by OBGC. In the current year, price decreases to OA, quantity increases to OD, and VOP is represented by OAED. In Case 3, the price effect (ABGF) and interaction effect (FGHE) components are negative, and the quantity effect component (CFED) is positive.

Case 4

In Case 4, the price for the previous year is represented by OB, and the quantity for the previous year is OD. The previous year's VOP is represented by OBHD. In the current year, price decreases to OA, quantity decreases to OC, and VOP is represented by OAFC. In Case 4, the price (ABGF) and quantity (CFED) effect components are negative, but the interaction effect component (FGHE) is positive.

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