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COMMENTS ON HOG CYCLES, THE
GENERAL SITUATION AND OUTLOOK,
1972

By
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Comments on Hog Cycles, the General Situation and Outlook, 1972^{1/}

by

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Well-managed Nebraska hog enterprises should be profitable in 1972. Costs of corn will be sharply lower than in the past 12 months, while hog prices promise to be considerably higher.

Some farmers will breed more gilts this winter and early spring for 1972 farrowing, but the increase from such actions may be small, and it will be partially offset by a few farmers who will drop the hog enterprise.

Judging from the production patterns of the past 20 years, the next major increase in hog production will not occur before 1973. Since most of the important changes in hog prices in recent years have been closely related to the hog cycle, that economic phenomenon will be examined.

Dynamics of the Hog Cycle

Most students of the pork-producing industry recognize two outstanding features of the hog business: First, it has a strong tendency to run in a regular cycle. Second, there is a long-time trend toward fewer but larger hog-producing operations. Quite strangely, however, few observers of the industry recognize the inter-relationship of the cycle and the trend toward larger units. Consequently they may be misled when attempting to forecast cyclical changes in hog production and prices.

Hog-cycle theory was developed perhaps a half-century ago, when a very large proportion of farms produced hogs in small numbers. A principal purpose

^{1/} Adapted from a statement by L. H. Simerl, University of Illinois.

of that production was to provide meat for the farm family. Before World War I, for example, more than one-fourth of all hogs produced were slaughtered on farms. Pork was by far the most common meat on rural tables--breakfast, dinner, and supper.

Typical farms had two to ten sows. Whenever corn was abundant and cheap, another gilt or two was bred. When corn became less plentiful and more costly, one or two fewer sows were kept. Similar patterns of production prevailed on a proportion of midwestern farms.

Some agricultural economists have expressed doubts that a true hog cycle existed in those earlier years, or even before 1950. They have argued that the volume of hog production was a function of the size of the corn crop. A big corn harvest was invariably followed by a huge wave of hog marketings 12 to 18 months later.

Many well-known agricultural economists--and farmers, too--deplored the irregularity of hog production and prices during the 1920's and 1930's. They believed that if available corn supplies and corn prices would be stabilized, it would stabilize hog production and prices. This belief was one reason for the adoption of national supply and price control programs in the 1930's.

Some economists put forth an opposite view. They concluded that a stabilization of the price of corn would lead to an intensification and regularization of the cyclical tendency of the hog industry.

The tendency of corn supply and price stabilization to promote and support a true hog cycle was obscured during the 1930's and 1940's by drouths, wars and changes in the control programs. Experience in the 1950's and 1960's, however, have proved their view to be correct, so far as the overall cycle is concerned.

However, probably very few hog analysts have anticipated the rapid trend toward fewer and larger hog-producing units. Hence, they probably did not integrate this trend with hog-cycle theory.

The modern hog cycle is the natural consequence of: (1) the biology of swine, (2) the psychology of farmers, (3) the time required for the construction of facilities, and (4) the competitive nature of our typical industries.

Cycles have no beginning or end, but description must begin somewhere. This one begins with a period in the cycle, such as the past 10 months or so, where returns to hog producers have been unusually low--even negative in many cases. Under these conditions a substantial number of hog producers become discouraged. Many of these farmers sell off their hogs--and quit the business, usually for good. This is the time when the reduction in numbers of hog producers occurs.

Market supplies continue to build up for perhaps six or eight months. Distribution pipelines become overloaded with pork. Prices of live hogs are reduced, and the rate of reduction is increased by the stickiness or lag in retail prices of pork. Prices of hogs sag to unprofitable levels.

After several months of liquidation, marketings of hogs abate, prices recover and profits are restored. Hog producers pay off some of their debts, buy a new automobile and some crop equipment, and build up some cash or credit. Life is good, but could be better with more hogs. Some producers begin to think about expanding their production capacity. Planning and construction take several months. Farrowing and finishing processes also require several months. Finally a new tide of hogs begins to roll to market. In this stage of the cycle the trend toward larger units becomes dominant. The expansion of capacity occurs on only a fraction of all hog farms, but the increase on these

farms is comparatively large. For example, one-third of the hog producers may increase production by an average of 45 percent. This alone would produce an increase of 15 percent in total production.

Such an expansion occurred in 1970. Consequent commercial hog slaughter increased about 16 percent, although the number of farmers producing hogs increased only 1 or 2 percent. The new producers probably added very little to total hog production, since their average production per farm surely was rather small.

The present hog cycle is wavering slightly because of the availability of abundant relatively low priced corn. The big increase in hog marketings a year ago unfortunately coincided with a sharp increase in the cost of corn. Profits were quickly replaced by severe losses, and a substantial number of farmers dropped their hog enterprises.

Looking ahead, some hog producers will be breeding more gilts this winter and early spring for 1972 farrowing. That may bring some cyclical increase in hog marketings in the last quarter of next year. But it will, I believe, be two years before the next wave of increased production capacity is reflected in market supplies and prices of hogs.

Assumptions and Projections for 1972

For discussion purposes, we can make some assumptions or projections: The live weight of commercial hog slaughter this year will total about 22.5 billion pounds, and prices of barrows and gilts at seven markets will average about \$18.25 per cwt. for this year. These figures were plotted on the graph (Figure 1) showing these factors since 1956, and also presented in Table 1.

Next, suppose that we accept the June estimate of the fall pig crop, and that the 1972 spring pig crop bears its usual relation to the previous fall pig

crop. That is, let the spring pig crop be 105 percent of the fall pig crop. These assumptions point to a live weight slaughter in 1972 totaling around 20.7 billion pounds.

Our next assumption is that the price adjustment to this shrinkage in supply will be similar to those of 1957, 1960, and 1965--rather than the more restricted adjustment of 1969. In this event hog prices would average around \$22 or \$23 for the coming year, 1972.

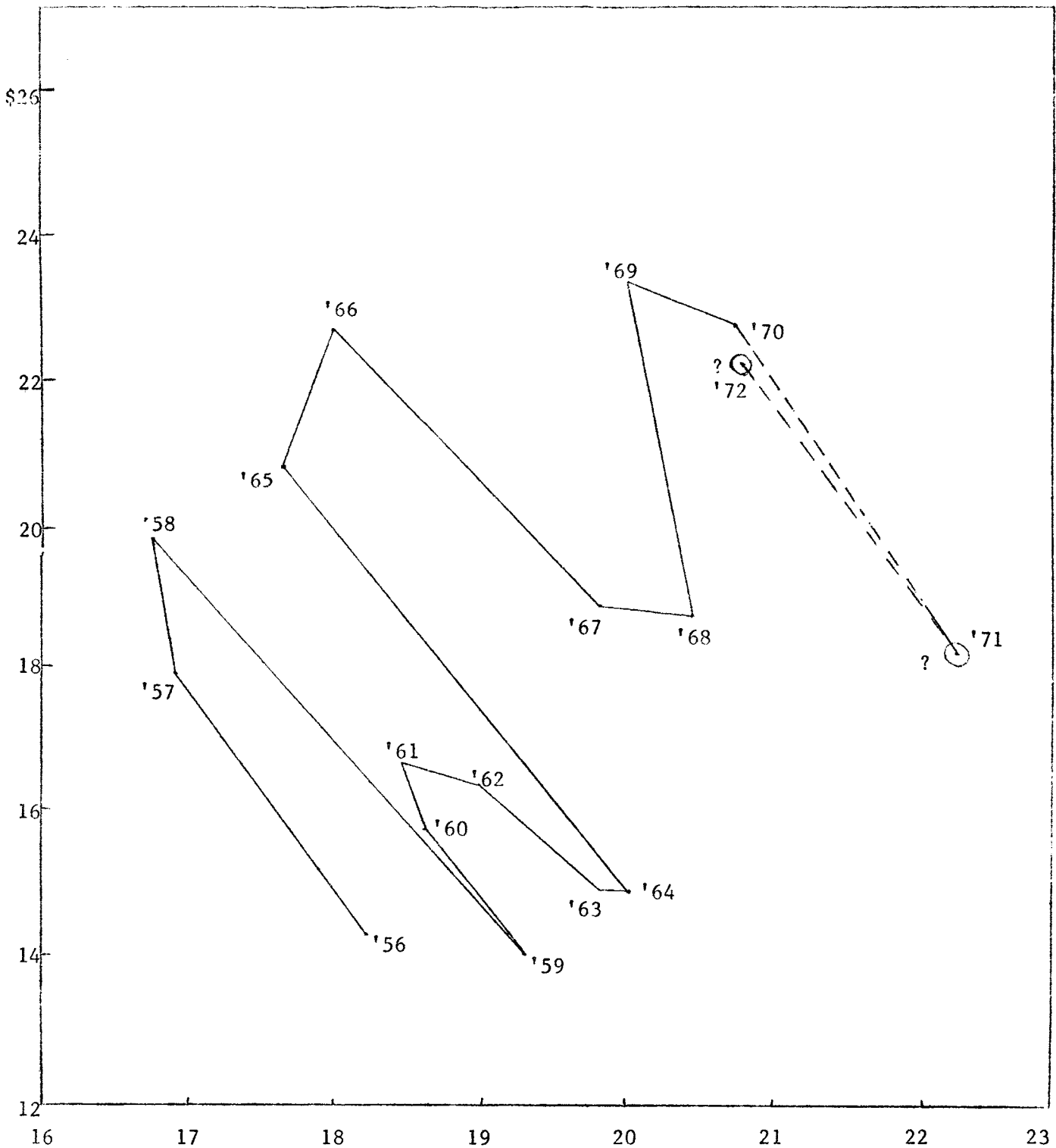
A radically different assumption would be that there will be a big increase in farrowings next spring, and that consequently prices of hogs would slump in the fall of 1972. Such a development seems to be quite unlikely. While the hog-corn price ratio may be quite high this fall and winter, such sharp reversals of production have not occurred since hog production took its present form. Furthermore, during the past 10 years annual average prices of \$23 and \$26 were required to bring on large general expansions in hog productions. With non-feed costs of production now around \$7 per hundred pounds--and rising--farmers do not make the move to greatly increase hog production without long and strong temptation.

Value of Hog Crop Increases

The value of the nation's hog crop has increased rapidly during the past 15 years. In 1956, farmers received about \$2.6 billion for market hogs. This year (1971) receipts will total around \$4.1 billion. The increased returns, which are up about 57 percent, must be partly (at least) in payment for the improvement in carcass quality.

In 1956, farmers sold about 18 billion pounds of hogs for prices averaging around \$14 per hundred pounds. This year (1971) they will sell about 22.5 billion pounds with prices averaging over \$18. Both 1956 and 1971 were "down" years for hog prices.

Figure 1. The graph shows the relation of hog prices and supplies over the past 15 years. It shows the cyclical nature of the industry, something about the elasticity of demand for hogs, and the increase in the demand during the period.



Hogs: Slaughter, total live weight, billion pounds.

Table 1 -- HOGS: Total Live Weight for Slaughter, Average Price and Total Value of Hog Slaughter, 1956-1971.

Year	Slaughter Live Weight ^{1/}	Average Price ^{2/}	Total Value ^{3/}
	<u>Mil. lb.</u>	<u>Dollar</u>	<u>Mil. dol.</u>
1956	18,223	14.35	2,615
1957	16,904	17.89	3,024
1958	16,692	19.80	3,305
1959	19,310	14.12	2,726
1960	18,658	15.50	2,892
1961	18,387	16.71	3,072
1962	18,983	16.44	3,120
1963	19,827	15.03	2,980
1964	20,001	14.89	2,996
1965	17,583	20.78	3,653
1966	17,906	22.61	4,048
1967	19,779	18.88	3,734
1968	20,369	18.25	3,798
1969	20,001	23.29	4,618
1970	20,626	22.63	4,667
1971	(22,500) ^{4/}	(18.25) ^{4/}	(4,100) ^{4/}

^{1/} Live weight of commercial slaughter.

^{2/} Barrows and gilts at eight and seven markets.

^{3/} Slaughter times price.

^{4/} Estimated.

While the trend of hog prices during the past 15 years is very encouraging, it provides no guarantee of similar future performance. The future for the industry, however, does appear to be promising.

No doubt the demand for meat will continue to increase during the years ahead, and a substantial part of that demand may be centered on pork. Supplies of veal and lamb will continue to diminish. There appears to be little prospect of further improvement in the quality of chicken or of reducing its cost. Increases in beef production seem likely to be slower during the 1970's than it was in the 1950's and 1960's. As with poultry, the quality of beef already is high--so little improvement is expected. The quality of pork, however, can and probably will be improved markedly during the coming decade.

Consumer reaction to quality improvement is slow and largely unconscious. A market research program would probably show that most consumers are not or only slightly aware of any change in pork quality during the past 20 years. Yet consumers have increased their spending for pork markedly since the mid-1950's.

Obviously increased consumer buying power has been a major factor in boosting the spending for pork. But without the improvement in the image of pork, the demand for the product surely would have increased much less than it has since the time when \$14 hogs were common.

Long-Run Prospects for Hog Prices

Hog prices seem likely to fluctuate between \$18 and \$25 most of the time during the next five to eight years. Farm management specialists say that such prices will be required to encourage hog producers to increase their output to meet the consumer demand for pork.

Many producers must increase capacity in order to offset the loss of production from farms that drop the hog enterprise. Some increase in pork supplies will also be needed to match the growth of population and to provide for any desired increase in per capita consumption.

Calculated profits and losses from hog production since 1950 are shown by the graph (Figure 2). For this graph, costs of production were estimated by adding (1) the cost of 6 bushels of corn at the average price received by U.S. farmers, (2) the cost of 75 pounds of supplement at the average price paid by U.S. farmers for hog feed over 29 percent protein, and (3) other costs ranging from \$5 per hundred pounds to \$7.18. (The \$5 rate applied from 1950 to May 1953. After that, the nonfeed costs were increased one cent each month). This cost formula is largely based on record-keeping hog farms in Illinois. Hog prices used were those reported as received by U.S. farmers.

Over the 21- $\frac{1}{2}$ year period covered by the graph, the estimated average profit above all costs was 60 cents per 100 pounds of pork produced. The purpose of the calculations and the graph, however, were not to measure actual profits, but to show variations in returns that influence changes in hog production. The graph does show the cyclical nature of returns from the hog enterprise during the past 21 years.

Informative and additional data are also found in tables 2 and 3.

Figure 2. Estimated Profit or Loss per 100 Pounds of Hogs Produced, Quarterly, 1950 to Date.

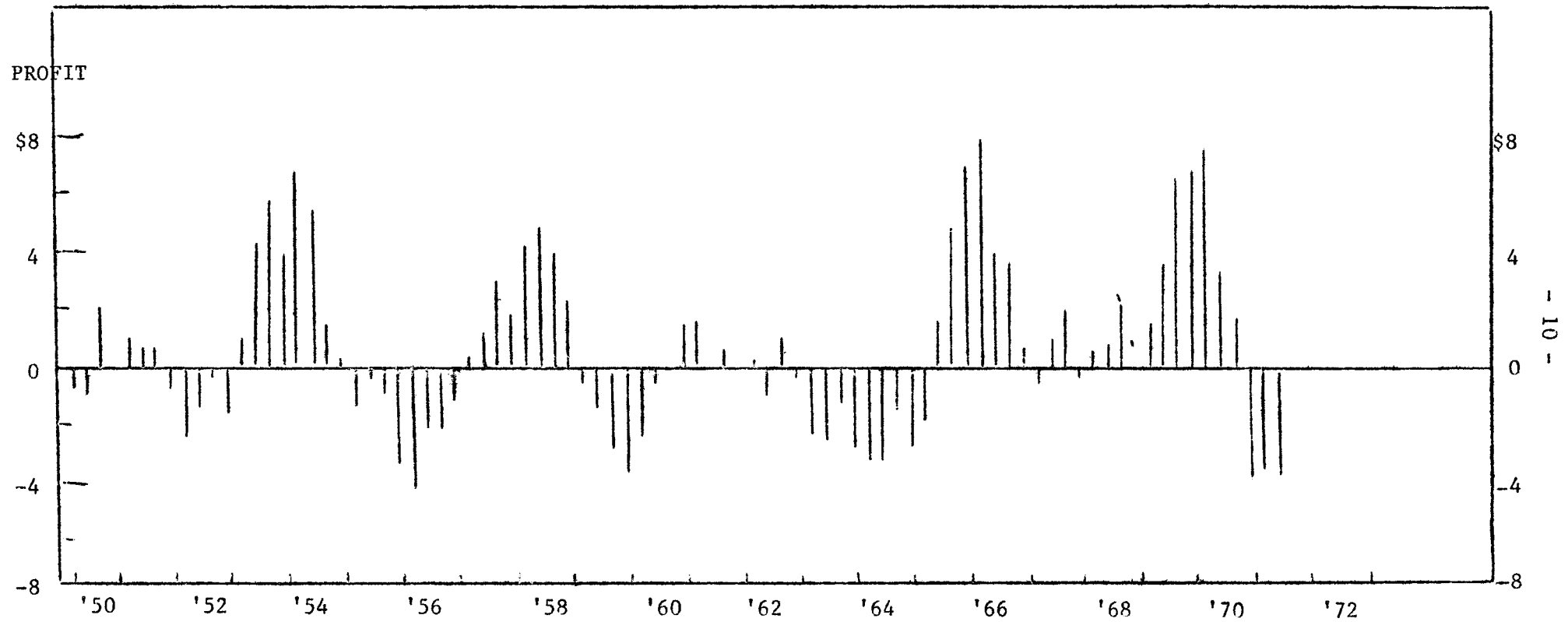


Table 2. Spring and Fall Pig Crops, and Consequent Hog Slaughter and Prices, 1965-1970, with some Projections for 1971 and 1972.

Year	Season	Pig crop	Consequent hog	
			Slaughter ^{1/}	Price ^{2/}
		Million	Million	Dollars
1965	Spring	42.5	35.4	24.60
	Fall	36.4	35.0	25.04
1966	Spring	45.4	39.0	22.52
	Fall	42.2	40.1	19.83
1967	Spring	48.2	41.6	19.32
	Fall	43.5	41.7	19.18
1968	Spring	49.2	43.3	19.41
	Fall	45.3	42.7	21.59
1969	Spring	46.8	41.2	26.25
	Fall	42.0	39.9	25.53
1970	Spring	52.6	45.9	19.48
	Fall	49.8	47.9	17.50
1971	Spring	51.9	45.7	(19.00) ^{3/}
	Fall	(45.7) ^{3/}	(43.4) ^{3/}	(22.00) ^{3/}
1972	Spring	(48.0) ^{3/}	(42.2) ^{3/}	(23.00) ^{3/}
	Fall	(46.0) ^{3/}	(43.7) ^{3/}	(23.00) ^{3/}

^{1/} Commercial hog slaughter. The slaughter and price figures are for the pig crop shown on the same line. The spring pig crop is assumed to be slaughtered during the last half of the year, and the fall pig crop in the first half of the next year.

^{2/} Barrows and gilts at 7 markets.

^{3/} Projections.

Table 3. PIG CROPS: Percent Produced by Selected States, 1960-1970.

State	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Ohio	5.04	4.80	4.81	4.62	4.74	4.61	4.35	4.30	4.16	4.36	4.13
Ind.	8.68	8.45	8.52	8.48	8.21	7.69	7.37	7.30	7.08	7.42	7.12
Ill.	12.92	13.45	13.50	13.75	13.91	11.53	12.35	12.89	12.30	11.55	11.61
Mich.	1.42	1.37	1.40	1.34	1.28	1.20	1.14	1.13	1.06	1.62	1.21
Wisc.	4.18	4.05	3.92	4.05	3.91	3.83	3.88	3.64	3.69	3.77	3.61
Minn.	7.03	6.95	6.91	6.78	6.61	6.13	6.28	6.00	6.17	5.95	5.96
Iowa	21.17	21.72	21.30	21.80	22.49	23.09	24.44	23.67	24.11	22.68	22.35
Mo.	7.06	7.14	7.37	7.36	7.46	7.37	7.38	7.89	7.86	7.69	8.10
N.D.	0.66	0.72	0.63	0.70	0.72	0.68	0.71	0.65	0.75	0.56	0.60
S.D.	2.71	2.99	3.07	3.15	3.23	3.04	3.48	3.19	3.37	3.22	3.30
Neb.	4.49	4.85	4.86	5.04	5.20	5.06	5.26	5.29	5.61	5.53	5.83
Kan.	2.00	2.26	2.39	2.39	2.44	2.57	2.55	2.68	2.82	2.99	3.17
Pa.	0.93	0.83	0.85	0.82	0.73	0.77	0.53	0.83	0.83	0.97	0.86
Va.	1.12	1.04	1.13	1.08	0.98	1.04	0.86	0.89	0.78	0.94	0.94
N.C.	2.25	2.17	2.21	2.22	2.38	2.74	2.53	2.86	2.89	3.30	3.42
S.C.	0.78	0.70	0.66	0.66	0.61	0.69	0.71	0.72	0.71	0.80	0.86
Ga.	2.66	2.43	2.40	2.36	2.23	2.38	2.41	2.55	2.59	2.95	2.74
Fla.	0.61	0.55	0.52	0.45	0.50	0.52	0.52	0.48	0.51	0.55	0.52
Ky.	2.54	2.50	2.49	2.49	2.42	2.66	2.36	2.50	2.47	2.70	2.58
Tenn.	2.33	2.21	2.24	2.16	2.03	2.14	1.99	2.01	1.95	1.98	1.97
Ala.	1.66	1.59	1.55	1.43	1.40	1.50	1.49	1.57	1.62	1.71	1.68
Miss.	0.87	0.76	0.80	0.74	0.68	0.74	0.72	0.81	0.77	0.87	0.92
Ark.	0.73	0.65	0.56	0.50	0.41	0.40	0.52	0.60	0.60	0.64	0.64
La.	0.37	0.31	0.27	0.25	0.23	0.21	0.31	0.33	0.30	0.32	0.30
Okla.	0.72	0.74	0.75	0.67	0.62	0.69	0.64	0.74	0.72	0.70	0.75
Texas	1.68	1.56	1.58	1.45	1.30	1.42	1.31	1.58	1.54	1.68	1.94
Colo.	0.33	0.31	0.35	0.37	0.38	0.38	0.17	0.39	0.43	0.52	0.54
U.S.	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00