

COMPARATIVE STUDY OF TAX COSTS
OF PRODUCING A BEEF CALF IN A COMMERCIAL COWHERD
FOR KANSAS AND OTHER BEEF STATES

by 557

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CHAPTER I

INTRODUCTION

The Problem

The beef cattle industry, and in particular, the cowherd and feedlot operators, have expressed concern about the tax costs of producing a beef calf in Kansas compared with the costs in other beef producing states. As personal property and real property taxes increase and profit margins for cowherd operations narrow, the movement of beef production may shift to states or areas with more favorable tax legislation. Thus, a study of tax costs in the production of beef calves merits a careful analysis on a state-wide basis as well as on a comparative basis with other states and regions producing beef calves. Unfavorable economic consequences could evolve, if states, or areas of states, which have no alternative land uses, should suffer a comparative tax disadvantage for the beef cowherd. The Kansas Flint Hills and Short-Grass Country in Southwest Kansas are two examples of large land areas with natural advantages for beef production, and few existing alternative uses of the land.

Managers of cowherds, like other business managers are increasingly concerned about determining the exact cost of the product they produce--beef calves. Tax costs for beef calves

have frequently in the past been nothing more than the cowherd operator's "guesstimates." It is also apparent from reading the literature concerning the cost of beef production, that once taxes have been estimated, the same figures tend to be used year after year and for cowherd operations in many locations.

A brief review of the literature also indicates that taxes are not only increasing, but the variations in tax costs are of such magnitude that it is difficult to provide realistic average estimates for states or counties.

Objectives

The purpose of this report is to present a simple procedure for calculating the total tax costs of producing a beef calf on a specific ranch, and further to present estimated comparisons of those tax costs for many of the major beef producing states. It is hoped that this report might be of interest to cowherd managers in making both production and marketing decisions. It is further hoped that this report might serve as a useful tool for tax policy makers representing the cattle industry in the U.S.

It is noteworthy that of the fifty states contacted for data pertaining to this study, many of the major beef producing states reported that they were presently engaged in similar studies. The trend in some states has been to exempt farm personal property from taxation. In 1967, six states did not tax livestock; by March, 1970, three other states, North Dakota,

Ohio, and New Jersey had passed legislation exempting livestock from personal property taxation. Today a total of eighteen states have complete or partial exemptions for livestock from taxation. In many of these states legislative actions have occurred during 1970. (Note Table 1, for a list of states with exemptions). Mississippi, Virginia, Wisconsin, Rhode Island, and Vermont are five states not included in Table 1, which have tax exemptions for farm machinery.

Source of Data

Throughout this report, data sources are cited and calculations are explained in order that interested individual cowmen and others may figure the tax cost of producing a beef calf in their particular area. The analysis includes tabulated comparisons of the tax costs for Kansas and thirteen other beef producing states. Thus, the tax costs on a per calf basis are reported for 14 states (Table 8).

The states providing sufficient information to estimate the tax cost of producing a beef calf in addition to Kansas were Arizona, California, Idaho, Iowa, Kentucky, Missouri, Nebraska, Montana, Nevada, Oklahoma, Texas, Wyoming, and Washington. It should be added that all fifty states were contacted, but many replied that they did not yet have sufficient data to make such estimates. All however, did express an interest in this study and some reportedly were engaged in similar studies.

Note of Caution

It is important, to preface this report with a word of caution, for taxes are both controversial and complex. It

TABLE 1

STATES EXEMPTING FARM PERSONAL PROPERTY FROM TAXATION*

Delaware ¹	Alabama ²
Hawaii ¹	California ⁵
Louisiana ¹	Idaho ²
Michigan ¹	Iowa ⁴
Minnesota ¹	Kansas ³
New Jersey ¹	Maryland ²
New York ¹	Mississippi ²
North Dakota ¹	Rhode Island ²
Ohio ¹	Virginia ²
Pennsylvania ¹	

*Source: Economic Research Service, U.S.D.A. and references cited in Appendix.

¹No personal property tax or almost completely exempt.

²All livestock exempt, Idaho exemption effective in 1971.

³Exempts horses, cattle, and mules under 12 months old.

⁴Exempts all livestock, except hogs and sheep, under 12 months old, and also grants a \$2700.00 personal property assessment exemption. Effective in 1971, exemption for all bovine females 3 years old and over.

⁵California legislation effective July 1, 1970, will reduce tax costs per calf by \$2.18. (See Appendix A, Table 2 for explanation.)

would be misleading to imply that the average tax costs reported for the various states truly reflect the exact tax costs of producing a beef calf in any specific area within these states. They do reflect, however, the average tax liability of beef calf producers in the different states considered in this study.

It should be readily apparent that significant variations exist in taxation and for many reasons. Some of the reasons for variation in taxes include:

1. fluctuating land values,
2. differing investments required per cow unit, due to management and size of operation, location, etc.,
3. differing needs for buildings and equipment depending on the climate and natural conditions,
4. varying assessment rates and practices from county to county and from state to state,
5. differing exemptions as determined by the legislators of each state and local governments.

In this framework of complexity and variation, we attempt to present a procedure for calculating the tax costs of producing a beef calf for a specific ranch and to present estimates of the comparative tax costs of producing a beef calf in many of the beef producing states. Although, efforts were made to obtain reasonable and accurate comparisons of the tax costs between states, those costs must be presented as estimates based on averages for the given state and may or may not reflect the tax cost for a specific area within that state.

Procedure

The procedure for calculating tax costs on a specific ranch does not involve the variations complicating the average tax cost for a specific state. The cost can be calculated with meaningful precision depending primarily on the information obtained from the farm record book for any given situation.

The procedure for calculating total tax cost per calf produced in a commercial beef cowherd was chosen because of its simplicity. The data needed for the calculation can be taken directly from the farm record book, except for the mill levy, which may be obtained from the local county clerk's office. A further advantage of this procedure is that it is easily modified to accurately calculate the tax cost on a specific ranch. Regardless of the size of operation, the investment required per cow unit, the tax rate, or the level of managerial skill and technology applied to the cowherd operation, the procedure will reflect the actual tax cost per calf for a specific ranch.

The summary of the tax costs per calf shown in Table 8 includes average tax costs for each of the fourteen states considered in this study. Appendix Tables 1-14 show the calculations for each state and also include special notes concerning the beef producing states included in this study. Although variations exist within states, these average tax cost figures can be useful in making comparisons between the various states.

Before going into the details of the calculation, it is appropriate to look at the United States tax system, and the major taxes in Kansas.

CHAPTER II

THE U.S. TAX SYSTEM

Power to Tax

A brief digression into the tax system is not of consequence in the calculation of the tax costs per beef calf, but can be helpful in pointing out some of the reasons for the different tax levels for the various states under consideration in this report. As indicated in the introduction, state legislations continually change the legal tax structure and currently several states are exempting certain classes of farm personal and other property (Table 1).

The national and state governments have independent taxing power, whereas local governments derive their power to tax from their respective state governments. This method of local governments deriving their power to tax is the source of much of the variation in local tax rates and assessment practices. Most local governments obtain their tax revenue from property taxes. The state legislatures usually designate the classes of property that local governments may tax; then local governments do most of the actual classifying and assessing of the various designated classes of property.¹

¹Tresa H. Mathews and Ronald Bird, Personal Property Taxes Levied on Farmers 1950 to 1967, U.S.D.A. Publication No. 447, (Washington, D.C.: U.S. Government Printing Office, 1970), p. 5.

Trend of Property Tax

Taxes levied on farm real estate have more than doubled since 1950, and taxes levied on farm personal property have nearly doubled during that same period.

"Taxes on farmers' personal property have been increasing at a less rapid rate than taxes on farmers' real estate. In 1967, personal property levies represented 17.1 percent of the total property tax bill. This proportion which reached a peak of 22.0 percent in 1952, has declined almost every year since then."²

How do these increasing tax levies affect the relative income position of farmers? One expert made the following statement concerning the trends in property taxation:³

"Property-tax payments including taxes on both realty and personalty, rose at a faster rate than farm incomes after 1940, with the result that property tax payments took a gradually increasing proportion of the average farm operator's net cash income. Some 10.2 percent of the average farm operator's net cash income went for property taxes in 1950; 12.8 percent in 1955; 14.7 percent in 1960; and 16.3 percent in 1963."

Currently, an awareness of this trend has encouraged many states to pursue a re-evaluation of real property and for

²Ibid., p. 3.

³Raleigh Barlow, Taxation of Agriculture in Lindholm, Richard, Property Taxation U.S.A. (Madison, Milwaukee, and London, The University Press of Wisconsin, 1967), p. 90.

a considerable number of states to exempt some classes of farm personal property from taxation. In addition, local governments are studying and seeking other sources of revenue to supplement and partially replace the traditional property tax.

The major classes of farm personal property tax are livestock, farm machinery, motor vehicles, and household goods. In 1967, livestock represented about 55 percent of the total personal property taxes, farm machinery 27 percent, motor vehicles 14 percent, and household furniture 4 percent.⁴

In 1968, taxes per acre of farm real estate increased in 48 of the 50 states. States with the largest increase in taxes per acre were those where the shift of land from farming to other uses was the greatest. Variations among the states listed in Table 2, reflect differences in the relative value of farm land and differences in the relative value of improvements; as well as the role of the property tax in state and local tax systems.

Table 2, for example, shows Arizona increasing taxes levied on farm real estate by 47 percent from 1967 to 1968, yet Arizona has a relatively low figure for taxes levied on farm real estate as a percent of net farm income for 1968. This kind of analysis points out some of the complexities in making comparisons between states for the tax costs for the commercial beef cow operation. It is reasonable to expect similar complexities in comparing areas within states.

⁴Mathews and Bird, op. cit., p. 3.

TABLE 2
TAXES LEVIED ON FARM REAL ESTATE⁵

State	Amount per \$100 of Full Value (1967)	Amount per Acre (1967)	Percentage Increase In Taxes Levied on Farm Real Estate 1967-1968	Taxes Levied on Farm Real Estate as Percentage of Net ⁶ Farm Income 1968
Arizona	\$ 0.71	\$ 0.73	47.4	5.7
California	1.58	8.32	18.7	22.3
Idaho	0.89	1.51	1.4	10.1
Iowa	1.19	4.17	10.9	11.7
Kansas	1.20 (2)	1.71 (4)	11.9 (3)	14.5 (3)
Kentucky	0.58	1.20	5.3	4.8
Missouri	0.75	1.42	5.7	7.6
Montana	0.92	0.48	2.0	11.7
Nebraska	1.16	1.52	9.4	12.8
Nevada	0.71	0.37	1.2	24.5
Oklahoma	0.51	0.73	7.6	8.7
Texas	0.54	0.67	4.6	7.9
Washington	1.12	2.04	11.8	11.0
Wyoming	0.80	0.30	1.3	12.1

⁵Thomas F. Stinson, Eleanor Courtney, and Ronald Bird, Revised Estimates of Taxes Levied on Farm Real Property 1950 to 1967. Economic Research Service, U.S.D.A., (U.S. Government Printing Office, Washington, D.C. July, 1969), pp. 5 and 11.

⁶Source: Farm Real Estate Taxes, Recent Trends and Developments, U.S.D.A., E.R.S., RET-9, December, 1969.

State and Local Property Taxes in Kansas

Tax levies are the primary source of governmental revenues. The major objective of these levies is to obtain needed revenues for financing governmental services (Table 4). While property taxes account for only slightly more than one percent of the state revenue in Kansas (Table 5), they are the major source of income to local governments. Approximately 73 percent of the revenue for local governments is obtained from property taxes.

An examination of Table 3 indicates that local units of government in 1969, spent \$629,326,000 of which \$457,313,000 came from property tax levies, thus property taxes are a very important source of revenue to local governments.

While the bulk of the tax revenue received by local units of government is levied locally, some is received from the state either as local assistance to schools and welfare, and the rest is obtained on a state tax sharing basis from the state imposed taxes (Table 3).

In addition to taxes, local governmental units have other revenue sources such as utilities, employer retirement revenue, charges and miscellaneous; as well as some direct federal assistance or grants marked for specific proposals.

TABLE 3
STATE AND LOCAL TAXES RECEIVED BY LOCAL UNITS OF GOVERNMENT IN KANSAS
FY 1969⁷

General Property Tax	\$457,313,000
Intangibles Tax	5,453,000
Mortgage Registration Tax	1,773,000
Grain Tax	447,000
Inheritance Tax (5%)	354,000
Motor Vehicle Registration Fees	761,000
STATE TAX SHARING AND AID---	
Highway users tax	15,075,000
Cigarette tax	4,513,000
Motor carrier tax	1,080,000
Liquor enforcement tax	1,395,000
From General Revenue Fund---	
To schools	97,443,000
To counties (welfare)	30,890,000
Local ad valorem	99,000
Tax Reduction Fund	12,500,000
Miscellaneous	230,000
	<hr/>
	\$629,326,000

⁷U.S. Bureau of the Census of Governments, 1967, Vol. 7: State Reports, No. 16: Kansas, (Washington, D.C., U.S. Government Printing Office, 1970), p. 30.

TABLE 4

SUMMARY OF EXPENDITURES BY LOCAL GOVERNMENTS IN KANSAS 1966-67⁸

	(Percent)
EDUCATION	50.44
HIGHWAYS	11.61
WELFARE	9.68
HOSPITALS	3.93
HEALTH	0.70
POLICE PROTECTION	2.67
FIRE PROTECTION	1.69
SEWERAGE	1.62
SANITATION OTHER THAN SEWERAGE	0.84
PARKS AND RECREATION	1.49
NATURAL RESOURCES	1.21
HOUSING AND URBAN RENEWAL	1.33
CORRECTION	0.16
LIBRARIES	0.67
FINANCIAL ADMINISTRATION	1.36
GENERAL CONTROL	1.96
PUBLIC BUILDINGS	0.72
INTEREST ON DEBIT	2.30
OTHER	5.61
	<hr/>
	100.00

⁸U.S. Bureau of the Census of Governments, 1967, Vol. 7: State Reports, No. 16: Kansas, (Washington, D.C., U.S. Government Printing Office, 1970), p. 30.

TABLE 5
STATE FINANCIAL REPORT--KANSAS⁹

	(Millions of Dollars)		(Millions of Dollars)
Grants	\$183.4	State Operations and Services	\$290.8
Sales and Compensating Tax	137.3	Local Assistance	238.6
Income and Inheritance Tax	99.2	Highway and Other Capital Improvements	83.1
Agency Earnings	76.9	Employment Security Benefits	13.6
Motor Fuel Tax	57.3	Retirement Payments	8.7
Motor Vehicle Registration	30.2	Debt Service Interest	2.0
Revenue from use of Money and Property	27.2	Claims and Grants	8.2
Cigarette Tax	18.0	Net Expenditure	<u>\$645.0</u>
Employment Security Contributions	17.1		
Insurance Companies Tax	10.3		
Property Tax	9.4		
Alcoholic Liquor Tax	4.3		
Other Revenue	7.0		
Net Revenue	<u>\$677.6</u>		

⁹Annual Financial Report, State of Kansas, Fiscal Year 1969.
Department of Administration, Accounts and Reports Division, State of
Kansas, (Topeka, State Printer), p. 13.

CHAPTER III

CALCULATING TAX COST PER CALF

Background

The above average managers may have a higher calf crop percentage, require less land per cow unit, or may be able to hold down investment in buildings, facilities, and equipment. A trial calculation whereby just one of these improvements or applications of technology are made may readily show a significant reduction in the total tax cost per calf. Calculating the tax cost per calf for a commercial beef cowherd operation reveals a great deal about the level of management and success of the operation.

Computing an average tax cost per calf for a given ranch is not complicated. Farm records reveal an actual calf crop percentage, actual investments in land, buildings, and equipment per cow unit. In any given year an individual cowman can figure a realistic value for his investment in livestock, land, buildings, and equipment. From this investment figure, they can calculate the assessed value. The only remaining information needed is the mill levy applicable in that tax area and that information, if not already known, can be obtained from the local county clerk.

On a farm or ranch with an adequate record keeping system, little pencil pushing is required to pin-point tax

costs per calf produced. Knowledge of the exact cost of producing a product has often been regarded as a "must" for businessmen. Today, more and more commercial beef cowherd managers are becoming concerned about the exact cost of producing their products. Cost of production data are important tools in making management decisions concerning both production and marketing.

Some of the complications that might be anticipated would be the difficulty in pricing land which may be used for both cash crops and feed production. Other difficulties may arise for allocating the value of buildings, equipment, and facilities, which may be used also for other farm enterprises.

In order to explain the procedure of calculating the tax cost per calf weaned from a commercial beef cowherd, it is necessary to assemble the following data, unique to each cowherd operation:¹

1. The number of cows assessed annually and their total assessed value. Current assessed values for livestock and horses can be obtained from local county assessors.
2. The number of replacement calves retained and their total assessed value.
3. The number of yearling heifers retained for replacing culls from the cowherd and their assessed value.

¹Data used for this hypothetical calculation are averages, both proportions and total amounts will vary greatly from ranch to ranch.

4. The number of bulls required for the cowherd and their total assessed value.
5. The number of replacement bulls on hand and their total assessed value.
6. The number of horses used for the cowherd and their assessed value.
7. The number of acres of grassland and cropland required per cow unit, and their respective total assessed values.²
8. The total assessed value³ of buildings and equipment utilized by the cowherd enterprise.
9. The mill levy used for rural property may be obtained from the County Assessor or County Clerk.
10. The percent calf crop weaned may be obtained from the individual farm record book.

This is essentially all the information required. To procede through an example of computing tax costs, the following assumptions are made for a hypothetical Kansas cowherd operation.

²County Clerks can provide assessed value for land.

³Assume assessed value equals 30 percent of market value for all real and tangible personal property in Kansas.

Assumptions for Hypothetical Example⁴

1. Given the size of the herd to be 100 cows, we estimate culling 10 cows, with the expectation of selecting 10 replacements from the 16 yearling heifers. These figures may be modified for any size cowherd.
2. Calves are exempt in Kansas. We are estimating an average of 85% calf crop. This is percent of cows weaning calves from a 100 cowherd.
3. The bulls are all assumed to be registered, or purebred.
4. The assessed value of grassland was calculated by averaging the assessed value of tame grass No. 1 and No. 2; and native grass No. 1 and No. 2; and dividing by four.⁴
5. The assessed value of cropland was calculated by adding the assessed value of bottom land No. 1 and No. 2; and upland No. 1 and No. 2, and dividing by four.
6. The acres required per cow unit may be adjusted to fit the requirements for any given area. The values used in this example represent an average amount of land required for Kansas, as estimated by Agricultural Economists at Kansas State University.
7. We estimate \$30.00 as the average investment in buildings and equipment per cow unit, (assessed at 30% value in Kansas). This investment estimation was made by the Department of Animal Science and Industry, Kansas State University.
8. The rural mill levy was calculated by dividing taxes on rural land and improvements by the valuation for rural land and improvements. This information is available from the county clerk.
9. The average assessed value of livestock and horses was obtained by dividing the total value of each class of livestock and horses as assessed by the number of animals. Bovine under 12 months are exempt in Kansas.

The resulting computations showing an estimated tax cost per calf in Kansas are presented in Table 6.

⁴All data for calculating assessed value of livestock, land, buildings, and equipment was obtained from the State of Kansas Statistical Report of Property Assessment and Taxation 1968. A copy of this publication may be obtained by writing to Property Valuation Department, State Office Building, Topeka, Kansas, or contact your local county clerk.

TABLE 6

KANSAS MODEL FOR COMPUTING TAX COSTS PER CALF

Tax Costs per Calf Produced 1968⁵

Assessed Value (for livestock in a 100 cowherd)

90 cows @ \$40.07	\$3606.30
20 calves (replacement)	00.00
16 yearlings (replacement) @ \$30.84	493.44
3 bulls (2 yrs. old and over) @ \$81.59	244.77
2 bulls (1 yr. old and under 2) @ \$70.50	141.00
2 horses @ \$34.57	69.14

Sub Total #1	<u>\$4554.65</u>
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(Divide Sub Total #1 by 100 to get the livestock assessment per cow unit.)

Sub Total #2	\$ 45.55
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Assessed Value (for land, buildings, and equipment)

7 acres grassland @ \$20.28	\$ 141.96
3/4 acre cropland @ \$40.19	30.14
buildings and equipment	10.00

Sub Total #3	<u>\$ 182.10</u>
--------------	------------------

(Add Sub Totals #2 and #3, to arrive at the total assessed value of the investment per cow unit.)

Sub Total #4	\$ 227.65
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(Multiply the total assessed value by the average rural mill levy,⁶ to arrive at the tax cost per cow unit.)

Sub Total #5	\$ 13.86
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(Divide by the average percent calf crop to get the average tax cost per calf produced.)

Total Tax Cost per Calf ⁷	\$ 16.30
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⁵1968 figures were used for computing tax costs per calf in Kansas, as numbers of livestock assessed were not available for 1969.

⁶\$60.92 per \$1000 assessed value

⁷All assessment data taken from Statistical Report of Property Assessment and Taxation: Topeka, 1968.

CHAPTER IV

COMPARATIVE ANALYSIS OF TAX COSTS PER CALF IN 14 STATES

Each of the fifty state tax offices and many state extension economists were contacted for data concerning the tax cost of producing a beef calf in the respective States. Some of the states offered suggestions for modifying the original model used for computing the tax costs in Kansas. The states included in the study were selected on the basis of the number of beef cows in the state (Table 7) and on the completeness of data provided for this tax computation. Many of the Southeastern states indicated that tax data was not available, but that they were planning to make studies and collect the data, in the near future. Florida, for example, expects to complete a refined and updated study by the end of 1970, with release early in 1971.

A summary of comparative estimates of the tax cost for producing a beef calf is shown in Table 8. One of the most striking features of the summary is the large variation from state to state, not only in the total tax cost per calf, but also in the various assessed values and tax levies. The costs per calf varies from \$5.30 in Texas to \$31.12 in Washington. A more detailed explanation of some of the factors leading to differences in taxes of beef calves among the states is given in Appendix Tables 1-14. It could reasonably be expected that

significant variations would also exist for different taxing areas within a given state.

The variation in total tax cost per calf resulting from internal and external cost economies or diseconomies and other factors is of large enough magnitude to require that tax cost per calf be calculated for each individual ranch to arrive at a meaningful tax cost per calf. Nevertheless, the average tax cost figures reflecting the conditions of individual states can be useful in making meaningful comparisons of taxation on beef calf production among the states considered in this study.

TABLE 7

BEEF COW NUMBERS BY STATE January 1, 1967¹

Numbers in parentheses indicate rank of top 20 states.

<u>State</u>	<u>Rank (1967)</u>	<u>Number Beef Cows (1967)</u>	<u>Rank ² (1970)</u>	<u>Number Beef Cows (1970)</u>
Texas	(1)	5,251,000	(1)	5,737,000
Oklahoma	(2)	1,942,000	(2)	2,174,000
Nebraska	(3)	1,864,000	(4)	1,888,000
Missouri	(4)	1,699,000	(3)	1,929,000
South Dakota	(5)	1,642,000	(6)	1,719,000
Kansas	(6)	1,627,000	(5)	1,839,000
Montana	(7)	1,466,000	(7)	1,589,000
Iowa	(8)	1,354,000	(8)	1,443,000
Mississippi	(9)	1,153,000	(9)	1,273,000
California	(10)	1,025,000	(14)	946,000
Colorado	(11)	981,000	(11)	1,082,000
North Dakota	(12)	976,000	(12)	964,000
Louisiana	(13)	910,000	(18)	903,000
Florida	(14)	900,000	(17)	909,000
Kentucky	(15)	885,000	(10)	1,087,000
Tennessee	(16)	865,000	(13)	954,000
Alabama	(17)	830,000	(16)	929,000
Arkansas	(18)	820,000	(15)	939,000
Georgia	(19)	754,000	(19)	830,000
Illinois	(20)	749,000	(20)	744,000

¹Source: Western Livestock Marketing Information Project.

²Rankings for 1970 were relative rank of states also considered in 1967.

TABLE 8
SUMMARY OF COMPARATIVE ESTIMATES OF TAX COST FOR PRODUCING A BEEF CALF IN FOURTEEN STATES FOR 1969³

STATE	LIVESTOCK ASSESSMENT PER COW UNIT	ASSESSED VALUE		TOTAL ASSESSED VALUE		AVER. MILL LEVY		TAX COST PER COW UNIT		PERCENT CALF CROP		TOTAL TAX PER CALF	
		BLDG., EQUIP., & LAND PER COW UNIT	ASSESSED VALUE	outside	inside	\$/1000	\$/1000	out.	in.	out.	in.	1969	1969
Arizona	\$ 36.06	\$ 38.59	\$ 74.65	outside	inside	104.1	104.1	\$ 7.77		80		\$10.21	
California ⁴	59.10	outside	829.60	301.85	60.00	60.00	60.00	49.77	18.11	85		58.55	21.30
Idaho	17.99	235.00	252.99			73.60		18.62		85		21.91	
Iowa ⁵	56.37	150.00	206.37			76.13		15.71		80		19.64	
Iowa ⁵	10.43	159.00	169.43			79.45		13.46		80		16.83	
Kansas ⁶	45.55	182.10	227.65			60.92		13.86		85		16.30	
Kentucky	190.00	1040.00	1230.00			5.70		7.01		90		7.79	
Missouri ⁷	84.00	192.00	276.00			40.00		11.04		85		12.99	
Montana	23.96	59.50	83.46			120.00		10.02		85		11.78	
Nebraska	66.54	196.50	263.04			43.83		11.53		83-84		13.81	
Nevada	46.40	230.00	276.40			35.00		9.57		85		11.37	
Oklahoma	36.60	1050.00	1086.60			5.00		7.45		88		8.47	
Texas	38.60	214.11	252.71			19.30		4.88		92		5.30	
Washington	96.25	635.00	731.25			37.00		27.06		85		31.12	
Wyoming	58.01	92.71	150.72			60.00		9.04		85		10.64	

³Source: Refer to Appendix Tables 1-14.

⁴The headings "inside" and "outside" refer to ranches located inside Federal Preserve Land and outside Federal Preserves--in California.

⁵Under new law (1970) eliminating tax on 3 year old and over bovine females.

⁶Kansas tax costs are for 1968, and 1969 data was not available. Kentucky also reported 1968 data.

⁷Montana figures based on 1967 data.

CHAPTER V

SUMMARY AND CONCLUSIONS

Two main points of interest have been investigated; the computation procedure for arriving at the tax costs per calf on a specific ranch, and a comparison of average tax costs per calf for fourteen beef producing states.

Importance of Knowing Tax Cost

The procedure for calculating tax costs per beef calf produced to weaning weight for a specific commercial beef cow ranch has been presented as a tool for arriving at an accurate production cost for the commercial cowman. At a time when margin for error has narrowed for cowherd managers, this simple and precise method of figuring tax costs may assist cowmen in making management decisions. For example, it may be desirable for cowmen to carefully analyze investment requirements in expansion decisions, or if profits decline.

Although ranchers have little bargaining power in the market, knowledge of the exact cost of production can assist the rancher in making contracts with feeder buyers.

Bill House, Cedar Vale, Kansas rancher and past president of the American National Cattleman's Association, in commenting about the investment required to produce a calf

to weaning weight made the following statements.¹ "It is going to take at least \$1000 invested in land for each cow and you'll have to add \$250 for the cow and machinery." House continued, "It doesn't make any difference whether you're using land worth \$700 an acre which will handle a cow to one and one-half acres, or \$20 land that requires 50 acres per cow. In the end, the total investment in land, machinery, and the cow will run around \$1250. And from this investment, on the average, you'll market a 400-pound calf each year."

The point is that the cowherd operator must know how to determine cost of production in order to know if the operation is profitable and must identify each proportion of that cost in seeking ways of improving returns.

The concern of the rancher extends beyond the tax on livestock; since cowherds require large amounts of land and increasing investments in buildings and equipment. The tax on livestock for a Kansas cowherd is only about 31 percent of the total property tax bill of a commercial beef cowherd. Tax advantages in a given state may influence the movement of cowherd operations as well as "backgrounding"² and feedlot units. This movement may prove very costly to the economy of the disadvantaged states and specifically to the land owners without alternative uses for their land.

¹The Kansas City Star (Kansas City), November 2, 1969, p. 10E.

²Backgrounding refers to the production of steer and heifer beef from weaning weight to entering the feedlot to be finished for slaughter.

Influence of Taxes on Level and Location of Production

The comparisons of tax costs per calf in the fourteen states reflect the comparative advantage in production costs for those states with either low tax rates or exemptions of farm personal property.

Although the comparative tax cost figures are admittedly average figures, they can serve as a useful guide to state legislators in attaining and maintaining a tax policy which will convince the cowherd manager that he can invest another \$1250 for another cow and still make a profit.

At a time when world needs for meat are greater than the supply, and the gap threatens to widen, it may be worth considering that those land areas with natural advantages for beef production be stimulated to intensify production.

The Food and Agriculture Organization of the United Nations has developed an integrated program to close the gap between the curves for food production and population growth by 1985. Consider the implications of one of that organization's findings.³ "The problem of changing the structure and improving the composition of the diet to meet future demand appears to lie essentially with protein supplies rather than with sugars, tubers, fruits, and vegetables, a large bulk of which can be produced from a relatively small area of land."

³ Addeke H. Boerma, "The World Agricultural Plan" Scientific American, Vol. 223, No. 2 (August, 1970), p. 58.

Meat and milk from cattle and sheep which provide a large part of the protein of animal origin, have a slow potential for expansion because of their long reproductive cycle. Animal production would, in fact, have to advance during the decade 1975-1985, more than twice as fast as in the recent past to reach parity with demand.⁴

Implications For Future Studies

Since it appears that there is considerable interest in studies of this type, it is hoped that this report will lead to further investigation of the alternatives and consequences of different kinds and levels of taxation. Indeed a complete understanding of taxing problems and possible solutions extend beyond the scope of this report.

As mentioned early in the report, taxes are complex. It is possible, however, to identify and comprehend specific taxes, such as the tax cost of producing beef calves, and after a careful investigation, arrive at a useful level of knowledge of that specific tax.

It would not seem probable, however, that individual studies of specific taxes would necessarily lead to correct recommendations concerning overall changes in tax policy. Certainly, the systems approach, where all taxes are studied simultaneously would more accurately guide tax policy makers

⁴Ibid., p. 58.

toward optimal decisions. This overall view of the tax system is important because the subsystems or specific taxes are related and interact. That is, a change in one tax may directly affect another tax and indirectly affect still other taxes. This possible chain reaction or interaction emphasizes the importance of studying the total tax system in making policy recommendations.

To carry this investigation to its final step would be to view taxes as a part of the complex problem of public finance. Here again, we find relationships and interactions between tax revenues and other sources of local, state, and national revenue. It is reasonable to assume that only with this total view of the effects of change in a specific tax on the total system of public finance, can optimal solutions be determined for the specific tax problem. For it is only with this complete picture that the trade-offs between the level of public services and the costs of those public services can be judged by the legislators that represent the people.

APPENDIX

APPENDIX

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TABLE 1
ARIZONA

Tax Costs per Calf 1969¹

Assessed Value (for livestock in a 100 cowherd)	
100 cows	\$2367.00
16 yearlings (replacement)	265.00
12 bulls (2 years old and over)	742.00
2 bulls (1 year old and under 2)	124.00
4 horses	108.00

Sub Total #1	<u>\$3606.00</u>
--------------	------------------

(Divide sub total #1 by 100 to get the livestock assessment per cow unit.)

Sub Total #2	\$ 36.06
--------------	----------

Assessed Value (land, buildings, and equipment)	
3200 acres grass (plus 16 sections state and federal lease land)	\$2419.00
buildings and equipment	1440.00

Sub Total #3	<u>\$3859.00</u>
--------------	------------------

(Divide sub total #3 by 100 to get the land and equipment assessment per cow unit.)

Sub Total #4	\$ 38.59
--------------	----------

(Add sub totals #2 and #4 to get the total assessed value of the investment per cow unit.)

Sub Total #5	\$ 74.65
--------------	----------

(Multiply the total assessed value by the average mill levy, to arrive at the tax cost per cow unit.)

Sub Total #6	\$ 7.77
--------------	---------

(Divide by the average percent calf crop to get the average tax cost per calf produced.) (80%)

Total Tax Cost per Calf	\$ 9.71
-------------------------	---------

(An additional tax cost for equipment was suggested at \$50.00 for the operation.)

Final Tax per Calf	\$ 10.21
--------------------	----------

¹Based on personal correspondence between Chas. C. Armer, Agricultural Department, State of Arizona Department of Property Valuation, Phoenix, Arizona, and the writer.

Table 1 (cont.)

Notes for Arizona

The State of Arizona statistical report for the 1969 tax year lists the full cash value of all beef cattle in the state at \$56,381,284.00. Applying their statutory assessment ratio plus miscellaneous exemptions reduced that full cash value to \$10,124,424.00 net assessed.

In 1967 Arizona completed a statewide reappraisal program which became effective in 1968.

Less than 15% of the land in Arizona is in fee title; the balance is owned by State and Federal agencies. It is reportedly an unusual situation when a ranch operation is all on fee land, although there are a few. In the National Forest areas, a rancher will usually only own 40 to 100 acres of fee land, but he is permitted to run a certain number of cattle for which he pays an annual fee. The most usual situation lies somewhere between the two extremes mentioned here. Charles C. Armer, Agricultural Department, of Property Valuation for State of Arizona says, "If I had to choose one combination to represent an operation, I would say 1/4 fee land and 3/4 State and Federal lease land....," (is representative of a typical ranch operation).

The average carrying capacity in Arizona for a year long, cow-calf operation would be about 6-8 head per section of land.

TABLE 2

CALIFORNIA

Tax Costs per Calf - 1969¹

Assessed Value (for livestock in a 100 cowherd)

90 cows	\$4500.00
20 calves (replacement)	300.00
16 yearlings (replacement)	560.00
3 bulls (2 years and over)	300.00
2 bulls (1 year and under 2)	150.00
2 horses	100.00

Sub Total #1	\$5910.00
--------------	-----------

(Divide sub total #1 by 100 to get the livestock assessment per cow unit.)

Sub Total #2	\$ 59.10
--------------	----------

Assessed Value (for land, buildings, and equipment)

	<u>outside preserve</u>	<u>inside preserve</u>
18½ acres grassland	\$578.00	\$ 135.75
1½ acres cropland	187.50	102.00
buildings and equipment	<u>5.00</u>	<u>5.00</u>
Sub Total #3	\$770.50	\$ 242.75
Add Sub Total #2	<u>59.10</u>	<u>59.10</u>
Sub Total #4	\$829.60	\$ 301.85

(Multiply by average mill levy to arrive at tax per cow unit.)

\$ 49.77	\$ 18.11
----------	----------

Total Tax Costs per calf, based on 85% calf crop.

\$ 58.55	\$ 21.30
----------	----------

¹Based on personal correspondence between Jack F. Eisenlauer, Chief, Assessment Standards Division, State of California, State Board of Equalization, and Mr. Don Carr, USDA and University of California at Davis, and the writer.

TABLE 2 (cont.)

Notes for California

In California, the assessed value is 25% of the full cash value. Tax is computed by multiplying the assessed value by the tax rate. In grazing areas the tax rate varies from \$4.50 to \$8.50 per \$100.00 of assessed value.

The California State Constitution was amended in 1969 by the addition of the California Land Conservation Act. The purpose of the act was to preserve open space areas by providing special tax treatment for those owners who (voluntarily) place their land in an "agricultural preserve." Such preserves are established in the individual counties by the county boards of supervisors who have been granted the option to do so by the Act.

Lands in preserves are appraised for tax purposes by capitalizing the net income stream typical of the agricultural use, regardless of the highest and best use. The Act specifically prohibits the use of the sales comparison approach to value, and prescribes the capitalization rate to be employed.

For example, certain land in the Sierra Nevada foothills could have a highest and best use as recreational homesites and, on the basis of sales in the area, might be appraised at \$400 per acre. The tax on the property would be \$6.00 per acre, i.e., $(\$400 \times 25\% \times \$6.00) \div 100$. The same land placed in a preserve, still with highest and best use as recreational

TABLE 2 (cont.)

homesites, might be appraised on the basis of its use as pasture as follows:

Given:	1000 acres carrying capacity, 24 acres per animal-unit rent \$5.00 per animal-unit month
Income:	1000 acres \div 24 = 41.66 A.U. or 500 A.U.M. 500 A.U.M. \times \$5.00 = \$2,500.00 \$2,500.00 \div 1000 acres = \$2.50 per acre per year
Capitalized Value:	\$2.50 \div 10% capitalization rate = \$25.00 per acre
Tax:	(\$25.00 \times 25% \times \$6.00) \div 100 = \$0.375 per acre

From this example it is evident that land in a preserve may receive considerable tax protection. The point is that there can be a radical difference in the tax load that a calf must carry in California depending largely on whether or not the supporting land is in a preserve.

Approximately 40 out of the 58 countries have Agricultural preserves, but not all owners have chosen to place their land in them. If a land owner places land in a preserve, he must sign a contract with the county agreeing to use the land only for agriculture or a compatible use for ten years.

The 1969 Legislature exempted beef cattle, except breeding bulls, from property tax and established an in-lieu head-day tax effective July 1, 1970. The effect of this legislation on the computation would reduce the tax by \$2.18 per calf beginning in 1971.

TABLE 3
IDAHO

Tax Costs per Calf Produced 1969¹

Assessed Value (for livestock in a 100 cowherd)²

90 cows	\$1440.00
20 calves (replacement)	00.00
16 yearlings (replacement)	160.00
3 bulls (2 years old and over)	135.00
2 bulls (1 year old and under 2)	34.00
2 horses	30.00

Sub Total #1	\$1799.00
--------------	-----------

(Divide sub total #1 by 100 to get the livestock assessment per cow unit.)

Sub Total #2	\$ 17.99
--------------	----------

Assessed Value (for land, buildings, and equipment)

8 acres grassland	\$ 160.00
1 acre cropland	50.00
buildings and equipment	25.00

Sub Total #3	\$ 235.00
--------------	-----------

(Add sub totals #2 and #3, to arrive at the total assessed value of the investment per cow unit.)

Sub Total #4	\$ 252.99
--------------	-----------

(Multiply the total assessed value by the average mill levy to arrive at the tax cost per cow unit.)

Sub Total #5	\$ 18.62
--------------	----------

(Divide by the average percent calf crop to get the average tax cost per calf produced.)

Total Tax Cost per Calf	\$ 21.91
-------------------------	----------

¹Based on personal correspondence between Phil Long, Chief of Valuations, State Tax Commission, State of Idaho, and the writer.

²In 1971 there will be no assessment in Idaho on livestock.

TABLE 4

IOWA

Tax Costs per Calf Produced 1969¹

Assessed Value (for livestock in a 100 cowherd)

90 cows	\$4593.60
20 calves (replacement)	00.00
16 yearlings (replacement)	572.32
3 bulls (2 years old and over)	282.00
2 bulls (1 year old and under 2)	140.00
2 horses	48.90

Sub Total #1	<u>\$5636.82</u>
--------------	------------------

(Divide sub total #1 by 100 to get the livestock assessment per cow unit.)

Sub Total #2	\$ 56.37
--------------	----------

Assessed Value (for land, buildings, and equipment)

2 acres grassland	\$ 64.00
1 acre cropland	74.00
buildings and equipment	12.00

Sub Total #3	<u>\$ 150.00</u>
--------------	------------------

(Add sub totals #2 and #3, to arrive at the total assessed value of the investment per cow unit.)

Sub Total #4	\$ 206.37
--------------	-----------

(Multiply the total assessed value by the average mill levy, to arrive at the tax cost per cow unit. 76.137--average rural mill levy, 1969.)

Sub Total #5	\$ 15.71
--------------	----------

(Divide by the average percent calf crop to get the average tax cost per calf produced. Average percent calf crop--80%)

Total Tax Cost per Calf	\$ 19.64
-------------------------	----------

¹Based on personal correspondence between Glenn A. Carlson, Assistant Director, Property Tax Division, Iowa Department of Revenue, and the writer.

TABLE 4 (cont.)

Tax Costs per Calf Produced 1970²

Assessed Value (for livestock in a 100 cowherd)

90 cows	\$ 00.00
20 calves (replacement)	00.00
16 yearlings (replacement)	572.32
3 bulls (2 years old and over)	282.00
2 bulls (1 year old and under 2)	140.00
2 horses	48.90

Sub Total #1	<u>\$1043.22</u>
--------------	------------------

(Divide sub total #1 by 100 to get the livestock assessment per cow unit.)

Sub Total #2	\$ 10.43
--------------	----------

Assessed Value (for land, buildings, and equipment)

2 acres grassland	\$ 67.00
1 acre cropland	80.00
buildings and equipment	12.00

Sub Total #3	<u>\$ 159.00</u>
--------------	------------------

(Add sub totals #2 and #3, to arrive at the total assessed value of the investment per cow unit.)

Sub Total #4	\$ 169.43
--------------	-----------

(Multiply the total assessed value by the average mill levy, 79.450 (est.) to arrive at the tax cost per cow unit.)

Sub Total #5	\$ 13.46
--------------	----------

(Divide by the average percent calf crop to get the average tax cost per calf produced. 80% calf crop)

Total Tax Cost per Calf	\$ 16.83
-------------------------	----------

²Under new law (1970) eliminating tax on 3-year-old bovine females.

TABLE 4 (cont.)

Notes on Iowa

Iowa law provides for a Personal Property Tax Credit to a taxing entity (individual, corporation, partnership, etc.) in the amount of \$2,700.00 taxable value--maximum. The individual or corporation may claim this credit by making claim on the personal property assessed to him. The amount is determined by multiplying his assessment of personal property--not to exceed \$2,700.00--by the millage levy in his taxing district, which is then paid to the county by the State. For tax year 1969 this amounted to \$30,081,083.00.

It is of special interest that the tax credit can be applied to cows, bulls, yearlings, two-year-old heifers, and horses; it does not, however, apply to realty. In making a study of total tax costs per calf to owners thereof, it would be most difficult to compute specifically the credit (or tax exemption) accrued to cattle alone.

The computed tax costs per calf "computation #1 for Iowa" do not include the tax credit, since it is varying from individual to individual.

Note that Iowa uses 2 acres of grass per cow. On "computation #2 for Iowa," is the effect of legislation exempting all 3-year-old bovine females from taxation. This computation does not contain the tax credit either.

TABLE 5

KANSAS*

Tax Costs per Calf Produced 1968¹

Assessed Value (for livestock in a 100 cowherd)

90 cows	\$3606.30
20 calves (replacement)	00.00
16 yearlings (replacement)	493.44
3 bulls (2 years old and over)	244.77
2 bulls (1 year old and under 2)	141.00
2 horses	69.14

Sub Total #1	<u>\$4554.65</u>
--------------	------------------

(Divide sub total #1 by 100 to get the livestock assessment per cow unit.)

Sub Total #2	\$ 45.55
--------------	----------

Assessed Value (for land, buildings, and equipment)

7 acres grassland	\$ 141.96
3/4 acre cropland	30.14
buildings and equipment	10.00

Sub Total #3	<u>\$ 182.10</u>
--------------	------------------

(Add sub totals #2 and #3, to arrive at the total assessed value of the investment per cow unit.)

Sub Total #4	\$ 227.65
--------------	-----------

(Multiply the total assessed value by the average rural mill levy, to arrive at the tax cost per cow unit.)

Sub Total #5	\$ 13.86
--------------	----------

(Divide by the average percent calf crop to get the average tax cost per calf produced.)

Total Tax Cost per Calf	\$ 16.30
-------------------------	----------

*1968 figures were used for computing tax costs per calf in Kansas, as numbers of assessed livestock was not available for 1969.

¹Statistical Report of Property Assessment and Taxation: Topeka, 1968.

TABLE 5 (cont.)

Notes on Kansas

The Kansas legislature in 1959 changed the assessment date of real and personal property from March 1 to January 1, in order to provide more time for the valuation process in taxing districts. In addition the livestock industry was granted the privilege of making a choice between listing average monthly inventory, or the actual number of livestock on hand January 1. At that time all livestock less than six months old were exempt from taxation. In 1963, a law was enacted in Kansas which provided that real and personal property was to be assessed at thirty percent of its justifiable value and further that all property is subject to the property tax unless it is specifically exempted from taxation. In 1964, an attempt was made to exempt all livestock from taxation. This proposal failed. The statutes did, however, exempt horses, cattle, and mules less than 12 months old.

The calculated average tax cost per beef calf produced in Kansas was based on 1968 data, as 1969 livestock numbers were not available. However, when applying only increases in assessed value of land for 1969, the tax cost per calf rose to \$16.65. It may be concluded that average tax costs per beef calf produced in Kansas for 1969, approximates \$17.00.

TABLE 6

KENTUCKY

Tax Cost per Calf Produced 1968¹

Market Value

40 cows @ \$150	\$6,000
8 yearlings @ \$100	800
2 bulls @ \$400	800

Sub Total #1	<u>\$7,600</u>
--------------	----------------

Sub total #1 divided by 40 equals assessment value per cow.

Sub Total #2	\$ 190
--------------	--------

Market Value

5 acres @ \$100 (includes buildings)	\$1,000
Special buildings, fences, and equipment per cow	40

Sub Total #3	<u>\$1,040</u>
--------------	----------------

Add sub totals #2 and #3 = \$1,230

Kentucky farm property is now taxed at an average of 57¢ per \$100 value (in 1968).

$$57¢ \times 12.30 = \$7.01$$

$$\$7.01 \div 90\% \text{ calf crop} = \$7.79$$

Tax Cost per Calf

¹Based on personal correspondence between Wilmer Browning, Extension Specialist in Production Economics, University of Kentucky Extension Service, Lexington, Kentucky, and the writer.

TABLE 7

MISSOURI

Tax Costs per Calf Produced 1969¹

Assessed Value (for livestock in a 100 cowherd)

1 cow	\$ 67.50
.16 yearling (replacement)	9.00
.05 bull (2 years old and over)	7.50
Sub Total #2	<u>\$ 84.00</u>

Value (for land, buildings, and equipment)

4 acres grassland and cropland	\$600.00
buildings and equipment	40.00
Sub Total #3	<u>\$640.00</u>
Assessed at 30%	\$192.00

(Add sub totals #2 and #3 to arrive at the total assessed value of the investment per cow unit.)

Sub Total #4	\$276.00
--------------	----------

(Multiply the total assessed value by the average mill levy to arrive at the tax cost per cow unit.) (\$4/100)

Sub Total #5	\$ 11.04
--------------	----------

(Divide by the average percent calf crop to get the average tax cost per calf produced.) (85%)

Total Tax Cost per Calf	\$ 12.99
-------------------------	----------

¹Based on personal correspondence between Victor E. Jacobs, Extension Economist, University of Missouri, and the writer.

TABLE 7 (cont.)

Notes on Missouri

Victor Jacobs, Extension Economist, University of Missouri made these comments when asked about computing tax cost per calf produced, "The figures presented are not average figures, but more likely what the figures might be if the reasonably specialized cow units could be identified and studied...which they have not, at least on a total farm basis." He further noted that despite Missouri's number three ranking nationally in beef cows, beef cows are seldom the major enterprises. The pasture land is typically the rougher or "left over" parts of the farm or land temporarily used for pasture in some sort of cropping sequence.

Unlike the native ranges of the West, Missouri's pastures typically do not exist in fairly large nor reasonably homogeneous blocks. Rather it varies from solid brush, all the way to very productive and intensively managed stands of improved tame grasses and legumes.

Jacobs offered further insight with this statement: "A year ago, I had the computer go through the select 'reasonably specialized beef cow farms' from our 300 plus M.I.R. (mail in records) records." By the time they inserted criteria that limited grain production and other livestock, they were down to a population of one farm that could reasonably be called a "cattle ranch." The average herd size in Missouri reflects this unspecialized situation, as it was approximately 20 cows in the last census (1964).

TABLE 7 (cont.)

In conclusion, Missouri has few full time beef cow operations and extreme variations in pasture quality utilized for beef grazing.

Jacobs speculated that even with a minimal use of technology, Missouri cattlemen could hold real estate investment to \$600 or so per cow, but added any reasonable estimate today would escalate from this figure.

TABLE 8

MONTANA

Tax Cost per Calf Produced (based on 1967 data)¹

Taxable value for livestock in a 100 cowherd

74 cows (coming 3 years and over) @ \$20.03	\$1482.22
16 cows (coming 2 years old) @ 18.26	292.16
16 heifers (coming yearlings) @ 15.00	240.00
20 calves	
5 bulls (grade) @ 67.07	335.35
2 horses @ 23.04	46.08

Sub Total #1	<u>\$2395.81</u>
--------------	------------------

(Divide sub total #1 by 100 to get livestock assessment per cow unit.)

Sub Total #2	\$ 23.96
--------------	----------

Taxable value for land, buildings, and equipment

45 acres grass @ \$0.99	\$ 44.55
1 acre wild hayland @ 4.95	4.95
buildings and equipment	10.00
	<u>\$ 59.50</u>

(Add Sub Totals #2 and #3)

Sub Total #4	\$ 83.46
--------------	----------

(Multiply the total assessed value by the average mill levy to arrive at the tax costs per cow unit.)

Sub Total #5	\$ 10.02
--------------	----------

(Divide by the average percent calf crop to get the average tax cost per calf produced.)

Average tax cost per calf produced	\$ 11.78
------------------------------------	----------

¹Based on personal correspondence between M. E. Quenemoen, Extension Economist, Cooperative Extension Service, Montana State University, Bozeman, Montana, and Howard H. Lord, Chairman, State Board of Equalization, State of Montana, Helena, Montana, and the writer.

TABLE 8 (cont.)

Notes on Montana

The current average mill rate to be applied to taxable valuation is about 175 mills. Note that millages are applied to 30% of assessed value in the case of land, 33 1/3% for livestock, and 20% for farm machinery.

The average rural millage levy in Montana is 120. Estimates made by ranchers in three different areas of Montana for tax cost per cow unit were \$8.52 to \$11.20.

TABLE 9

NEBRASKA

Tax Costs per Calf Produced 1969¹

Assessed Value (for livestock in a 100 cowherd)

90 cows	\$4949.00
20 calves (replacement)	525.00
16 yearlings (replacement)	672.00
3 bulls (2 years old and over)	
2 bulls (1 year old and under 2)	429.00
1.5 horses	79.00

Sub Total #1	<u>\$6654.00</u>
--------------	------------------

(Divide sub total #1 by 100 to get the livestock assessment per cow unit.)

Sub Total #2	\$ 66.54
--------------	----------

Assessed Value (for land, buildings, and equipment)

9.5 acres grassland	\$ 147.00
1.12 acres cropland	35.00
buildings and equipment	7.00

Sub Total #3	<u>\$ 189.00</u>
--------------	------------------

(Add sub totals #2 and #3 to arrive at the total assessed value of the investment per cow unit.)

(1.71 tons hay, $\frac{1}{2}$ bu. corn; modification)	\$ 7.50
---	---------

Sub Total #4	\$ 263.04
--------------	-----------

(Multiply the total assessed value by the average mill levy--43.83 average rural levy--to arrive at the tax cost per cow unit.)

Sub Total #5	\$ 11.53
--------------	----------

(Divide by the average percent calf crop to get the average tax cost per calf produced.) (83-84 percent calf crop)

Total Tax Cost per Calf	\$ 13.81
-------------------------	----------

¹Based on personal correspondence between Phillip A. Henderson, Extension Economist University of Nebraska and the writer.

TABLE 9 (cont.)

Notes on Nebraska

Nebraska statutes require all tangible personal and real property to be taxed at actual value as of January 1 of each year unless specifically exempted by statute. An assessment is then made at 35% of actual value as determined in most instances by the county assessors in each of the 93 Nebraska counties.

Nebraska has approximately 4,000 different governmental taxing districts, each of which have certain statutes pertaining to the allowable mill levies which can be used. In 1969, the lowest consolidated mill levy for any rural taxing district was 28.84; the highest for the same year was 69.64 mills.

Phillip A. Henderson, Extension Economist for University of Nebraska provided the data for Nebraska's computed tax cost per calf. Henderson reportedly based land values on 14 counties picked with consideration for geographic representation. He also noted that about half of the cows are in ranch country and half in the rest of the state. Land requirements and assessed values were weighted accordingly.

The average rural mill levy for 1969 was 43.83, compared with 63 mills for all property in the state.

TABLE 10

NEVADA

Procedure for Computing Tax Costs per Calf Produced 1969¹

Assessed Value (for livestock in a 100 cowherd)

90 cows	\$3600.00
20 calves (replacement)	00.00
16 yearlings (replacement)	640.00
3 bulls (2 years old and over)	300.00
2 horses	100.00

Sub Total #1	<u>\$4640.00</u>
--------------	------------------

(Divide sub total #1 by 100 to get the livestock assessment per cow unit.)

Sub Total #2	\$ 46.40
--------------	----------

Assessed Value (for land, buildings, and equipment)²

8 acres grassland	\$ 160.00
1 acre cropland	60.00
buildings and equipment	10.00

Sub Total #3	<u>\$ 230.00</u>
--------------	------------------

(Add sub totals #2 and #3 to arrive at the total assessed value of the investment per cow unit.)³

Sub Total #4	\$ 276.40
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(Multiply the total assessed value by the average mill levy, to arrive at the tax cost per cow unit.)

Sub Total #5	\$ 9.67
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(Divide by the average percent calf crop to get the average tax cost per calf produced.)

Sub Total #6	
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Total Tax Cost per Calf	\$ 11.37
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¹Based on personal correspondence between Clifford J. Jackson, Acting Chief, Division of Assessment Standards, Nevada Tax Commission, Carson City, Nevada, and the writer.

²Land investments were estimated on sale value, excluding buildings and irrigation systems.

³Nevada has a constitutional tax rate limit of \$5 per \$100 of assessed valuation.

TABLE 11

OKLAHOMA

Tax Costs per Calf Produced 1969¹

Assessed Value (for livestock in a 100 cowherd)

90 cows	\$30/head	\$2700
20 calves	15/head	300
16 yearlings	25/head	400
3 bulls (2 years)	60/head	180
2 bulls (less than 2 years)	40/head	80
Total		<u>\$3660</u>
Value per cow unit	\$3660/100	\$ 36.60
Livestock Tax Cost per cow unit (6% rate)		\$ 2.20
Value (land, buildings, and equipment)		
8 acres grassland @ \$100/acre		\$ 800
1 acre cropland @ \$200/acre		200
buildings and equipment		50
Total		<u>\$1050</u>
Tax Value of land, buildings and equipment per cow unit		
(\$50/\$100)		\$ 5.25
Total Tax Value per cow unit ²		\$ 7.45
Total Tax Value per calf (88% calf crop)		\$ 8.47

¹Based on personal correspondence between Cecil D. Maynard, Extension Economist, Division of Agriculture, Oklahoma State University, Stillwater, Oklahoma, and the writer.

²Refer to "The Oklahoma Agricultural Outlook and Market Analysis," July-August, 1970. Grassland will vary from \$75.00 to \$200 per acre.

TABLE 12

TEXAS

Tax Cost per Calf Produced 1969¹

Original Investment:

Land, 600 acre @ \$200.00 per acre	\$120,000.00
Cows, 300 cows @ \$175.00 per cow	52,500.00
Bulls, 12 bulls @ \$450.00 per bull	5,400.00
Tractor, pick-up, and miscellaneous equipment	12,700.00
Total	\$190,600.00

Tax Expense

Tax on Cattle:

Assessed value of bulls and cows \$11,580 @ \$1.93	\$ 224.00
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Tax on land and buildings:

\$60,000 @ \$1.93	\$ 1,158.00
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Tax on Equipment:

\$4,233 @ \$1.93	\$ 82.00
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Total Tax	\$ 1,464.00
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(Total tax divided by 300 will give the tax cost per cow unit.)

Tax per cow unit	\$ 4.88
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(Divide by the average percent calf crop to get total tax cost per calf produced.)

$\$4.88 \div .92 =$	\$ 5.30
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¹Prater, Tom E., Investment Requirements, (College Station: Texas Agricultural Extension Service, 1969).

TABLE 13

WASHINGTON

Procedure for Computing Tax Costs per Calf Produced 1969¹

Assessed Value (for livestock in a 100 cowherd)

90 cows	\$7650.00
20 calves (replacement)	00.00
16 yearlings (replacement)	1200.00
3 bulls (2 years old and over)	465.00
2 bulls (1 year old and under 2)	185.00
2 horses	125.00

Sub Total #1	<u>\$9625.00</u>
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(Divide sub total #1 by 100 to get the livestock assessment per cow unit.)

Sub Total #2	\$ 96.25
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Assessed Value (for land, buildings, and equipment)

8 acres grassland	\$ 440.00
1 acre cropland	175.00
buildings and equipment	20.00

Sub Total #3	<u>\$ 635.00</u>
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(Add sub totals #2 and #3, to arrive at the total assessed value of the investment per cow unit.)

Sub Total #4	\$ 731.25
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(Multiply the total assessed value by the average mill levy, to arrive at the tax cost per calf produced.)

Sub Total #5	\$ 27.06
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(Divide by average percent calf crop to get the average tax cost per calf.)

Total Tax per Calf	\$ 31.12
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¹Based on personal correspondence between Chas. W. Grout, Ratio and Audit Supervisor, Department of Revenue, State of Washington, and the writer.

TABLE 13 (cont.)

Notes on Washington

Assessed values for 1970 assessments are to be based on 50% of full, or market values. The average statewide levy is estimated at 37 mills.

It is also reported that deviations the assessors make are considerable, since the values they agree to in district meetings are not necessarily the values used for making assessments.

In July, 1970, Washington was undergoing a state-wide revaluation program by individual counties for real property.

The state of Washington assessed livestock significantly higher than the other states in the study.

TABLE 14

WYOMING

Tax Costs per Calf Produced 1969¹

No. of Units	Size	AU's
100 cows	@ 1.00 =	100
20 calves	@ .55 =	11
15 yearlings	@ .75 =	11
5 bulls	@ 1.00 =	5
1 horse	@ 1.00 =	1
		<hr/>
		128 AU's

AU's per cow $\frac{128}{100} = 1.28$

AU's per calf weaned $\frac{1.28}{.85} = 1.50$

Livestock assessment per calf weaned	\$ 68.25
Land assessment per calf weaned	95.56
Improvement assessment per calf weaned	13.50
Assessed value per calf weaned	<hr/> \$177.31
Tax rate 6% or \$10.64 taxes per calf weaned.	

- Note: 1. Based on 85% calf crop at weaning.
 2. Based on 1/18 of AUM's on Government leases (Laramie County).
 3. Assessed value of machinery and equipment would increase taxes slightly.

¹Based on personal correspondence between Warren A. Bower, Appraiser, Ad Valorem Tax Department, Wyoming State Board of Equalization and State Tax Commission and the writer.

TABLE 14 (cont.)

Notes on Wyoming

Wyoming like several other western states is not very comparable to Kansas in regard to taxes on land per calf produced, because of the availability of large areas of Federal land. Approximately 50% of the area is Federal grazing area, but this Federal land only contributes about 30% of A.U.M.'s.²

The data for Wyoming's tax cost per calf were based on Laramie County, since it is substantially private land and possibly more comparable to other states--but not necessarily typical of Wyoming.

²A.U.M. (animal unit month) the land required to sustain an animal for one month. This is used as a measure of carrying capacity.

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COMPARATIVE STUDY OF TAX COSTS
OF PRODUCING A BEEF CALF IN A COMMERCIAL COWHERD
FOR KANSAS AND OTHER BEEF STATES

by

DAN R. BONINE

B.S., Kansas State University, 1965

AN ABSTRACT OF A MASTER'S REPORT

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KANSAS STATE UNIVERSITY
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During the past decade, investment requirements have increased rapidly for commercial beef cowherd managers. Combined with increasing investments, the cowherd managers in many areas have faced increasing levels of taxation. Evolving from this combination of greater investments and higher levels of taxation is an increasing concern about the proportion of production costs which are paid in taxes.

The primary objective of this study was to calculate the tax costs per calf produced in a commercial beef cowherd operation. The model used in this calculation is adaptable for any specific ranch. The model can be modified for different levels of management, sizes of operation, investment requirements, assessment procedures, and levels of taxation. The computed results give a tax cost per beef calf produced to weaning weight for the given cattle ranch.

The same model used for calculating the tax cost per calf on a specific ranch can also be useful in making comparisons for tax cost per calf produced in various states by using average data for a given state. The computed results would give the average tax cost per beef calf produced in that state. Although significant variation exists within each state, the average figures can offer a rough guide for measuring the comparative tax advantage for the states under consideration. Fourteen states were compared in this study with tax costs per calf ranging from \$5.30 in Texas to \$31.12 in Washington.

The results of calculating tax costs for a specific ranch can be a useful management tool in both production and marketing decision making. Pinpointing tax costs can guide managers in investment decisions and in knowing what phases of production need intensive management for a profitable operation. This cost figure can also be helpful in marketing the calves, as the producer knows more about his actual production costs.

Identifying and calculating specific tax costs, such as the tax costs of producing beef calves can also be a useful guide for tax policy makers. This singular investigation, however, would not necessarily lead to correct recommendations concerning changes in tax policy. Taxes levied on beef calves are only one source of revenue in the huge and complex problem of public finance. In addition, there are many forms of taxation. It appears reasonable to assume that only with a total view of the effects of a change in a specific tax on the total system of public finance can optimal decisions be made for a specific tax problem.

In conclusion, this study can be useful to cowherd operators in making management decisions and when combined with other investigations relating to public finance, be helpful in guiding legislators (which represent the people) in formulating tax policies.