The 2002 Economic and Fiscal Impact of the Kentucky Equine Industry

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COMMISSIONED BY THE KENTUCKY HORSE COUNCIL WITH FUNDING PROVIDED BY A GRANT FROM THE KENTUCKY DEPARTMENT OF AGRICULTURE

January 26, 2004

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History of the Kentucky Horse Council

The first council

The Kentucky Horse Council was originally created as an independent agency of state government via legislation enacted in 1974. Perhaps the first Kentucky Horse Council's greatest contribution was compiling important reference data related to the equine industry, including: "Kentucky Equine Industry Survey 1977;" in 1980, the first "Kentucky Equine Industry Directory;" and two monthly news-based publications. Despite the many contributions of this first council, the state agency was abolished on June 30, 1984, as a result of the state budget constraints.

A new beginning

Eight years passed without a state horse council in Kentucky. Finally, in the winter of 1992, a grassroots effort to combine the voices and interests of all horsemen took hold. The impetus behind the resurgence of interest in the re-formation of a horse council was the widely recognized need for horsemen to band together in support of all horse breeds.

The Kentucky Horse Park spearheaded the coordination of a meeting to discuss the concept of a new horse council to be privately funded and non-governmentally linked. Articles of incorporation and bylaws for the Kentucky Horse Council, Inc. were signed in March 1992. True to the original Kentucky Horse Council's mission of representing the interests of all breeds and disciplines, executive board membership is limited to no more than two representatives of any breed or discipline.

Mission

The Kentucky Horse Council, Inc. is a non-profit organization dedicated to the protection, promotion, growth and development of the equine industry and serves as a focal point for legislation, education, and communication in Kentucky.

Communication

To improve communication within the state, the KHC has developed a web site designed to be window to Kentucky's horse industry. The dynamic site is a source for issues impacting the industry; events and happenings; horse specialists, trail information, and many other items of interest. The website is http://www.kentuckyhorse.org/

The horse council today

Today, the Kentucky Horse Council is a membership-based organization with over 300 members. With more than 135 horse groups based in the state, the Kentucky Horse Council is proud to serve as a voice for them all. Several active committees, education, Open Stable Day, legislative, membership, and trails, continue to shape the direction of the horse industry in Kentucky.

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The Kentucky Horse Council would like to thank the Kentucky Department of Agriculture for the grant that made this study possible.

The Kentucky Horse Council, through a competitive bid process, hired the University of Kentucky Center for Business and Economic Research to conduct this study of Kentucky's horse industry.

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Executive Summary

The equine industry is one of the key components of the Kentucky agricultural industry and the state economy overall. The industry generates tens of thousands of jobs and hundreds of millions in worker income in a wide variety of careers that include farm manager, sales, marketing, veterinary services, and farm laborer. The equine industry is an important part of Kentucky's largest economies, including the Louisville and Lexington areas. However, the industry also creates opportunities for earnings and employment throughout Kentucky.

Citizens and policy-makers in Kentucky generally understand that the equine industry has a substantial economic impact. The size and nature of the impact, however, must be measured to make a concrete presentation of the industry's influence. To make these measurements, the Kentucky Horse Council issued a Request for Proposals for an economic impact study and contracted with the University of Kentucky Center for Business and Economic Research (UK-CBER) to conduct the analysis. The result was the following study of the economic and fiscal impacts of the Kentucky equine industry.

The principal findings of the study are listed below. When analyzing these results, however, note that this study was designed to capture the activity of horse breeders, owners, trainers, boarders, and farriers, as well as businesses that offer trail riding and lessons. The study also was designed to measure the activities of equine auction houses and Kentucky's major equine tourism attractions including racetracks, the Kentucky Horse Park and the Kentucky Derby Museum. Together, these represent a great majority of the overall activity of the Kentucky equine industry,

But, due to the scope of the study, some portions of the industry are not reflected in the results below. Results below do not reflect the activity of larger businesses engaged in providing equine veterinarian, transport, and business services. Results also do not reflect the activity of smaller equine tourism businesses and horse shows. A study that also captured these portions of the industry would show somewhat higher economic and fiscal impacts than are presented below.

The principal findings of the study were:

- A survey of horse owners, breeders, trainers, borders, farriers, and riding trail operators was used to estimate that 180,000 horses reside in

Kentucky. This figure is somewhat of an underestimate since it excludes horses that reside at racetracks.

- Equine industry expenditures including horse owners, breeders, trainers, boarders, and related industries were estimated at $1.41 billion in 2002. Other equine services and equine tourism businesses were estimated to add almost another $600 million in expenditures.

- The direct economic impact after adjusting for sales between Kentucky equine businesses and households was estimated at $1.13 billion.

- The direct impact is combined with economic "multipliers" to yield the overall impact on the Kentucky economy in 2002. The total economic impact was estimated at $1.77 billion. Associated with this economic impact was an employment impact of 31,800 jobs with earnings of $630 million.

- The tax revenue impact from sales, income, and occupation taxes, along with corporate, property and pari-mutuel taxes paid by the equine industry was estimated at $102.6 million.

I. Introduction

The economic impact of the Kentucky equine industry in Kentucky is generally accepted by citizens and policy makers to be substantial, but the magnitude of this impact is perhaps not fully appreciated. Further, the importance of other equine industries, such as veterinary, specialized feed, tourism attractions, transportation, horse boarding and riding businesses, and other industry support services, are even less well known. An evaluation of equine industry activity could aid in achieving a better comprehension of these impacts, as well as illustrate to the general public the significance of this industry. This study provides such an evaluation, and does so by performing three fundamental tasks: ascertaining the number of horses in Kentucky, and quantifying the overall economic and fiscal impact of the equine industry.

The Kentucky Horse Council accepted a bid by the University of Kentucky Center of Business and Economic Research (CBER) to provide this report based on a careful and conservative survey and impact calculation methodology. The first task of this study was to determine, through research and estimation, the number of horses located in the state of Kentucky. This number was estimated using the results of a comprehensive CBER survey of horse owners, breeders, and others that would house horses, and then checked through comparison with existing data such as from the U.S. Department of Agriculture.

The second task was to assess the contribution of the equine industry on tourism. This tourism impact occurs at major organizations, such as the Kentucky Horse Park, but also occurs at smaller equine industry institutions such as riding and training establishments that are likely to have been included in the recreation business category in previous studies. With the quality and reputation of the equine industry in Kentucky, these establishments can attract a substantial number of customers from other states, particularly for specialized activities such as classes and camps.

The final task was to quantify the economic and fiscal impact of the equine industry. Spending and employment supported by out-of-state sales, and net of double-counting issues, was the direct economic impact of the equine industry on the Kentucky economy. Tourism activity was then added to this direct impact to yield the total direct impact. The direct impact is the principal impact of the equine industry on the economy, and is certainly the more visible part of the industry's impact. However, there is also an additional indirect impact or "multiplier effect" which occurs as money attracted to the state by the equine industry circulates further in the economy. The total impact of the equine industry is the sum of the direct impact and the "multiplier effect." Fiscal impacts are driven by business taxes, sales, and income taxes. These fiscal impacts were calculated along with the total economic impacts.

II. Equine Industry Survey

This study was designed to identify the number of horses that reside in Kentucky and the economic impact of the industry, which principally results from horse owners, breeders, trainers, boarders, and related businesses. The information necessary to estimate these impacts is not for the most part available from existing published data, and therefore, needed to be gathered directly. To this end, the UK Center for Business and Economic Research designed and administered a mail survey of equine industry businesses. The survey form is presented in Appendix 1.

As can be seen from Appendix 1, the survey asked a variety of detailed questions regarding the number of horses that reside at each business. The survey inquired about the types of revenue for each business, as well as the types of expenditures and employment.

The survey begins by asking whether the respondents are active participants in the horse industry. The respondents who fit this category (who answer yes to this question) are asked to complete the rest of the survey. All but a handful of the more than 200 respondents answered yes to this preliminary question.

Question 1 inquired about the activities of horse industry participants responding to the survey. The participants were asked to indicate their primary activity and other equine-related activities. The activity categories are: horse owner or lessee, horse breeder, horse competitor, horse trainer, horse stabling or boarding, riding lesson provider, farrier, and provider of other services. Table 1 below shows the primary activity of survey respondents who answered this question.

As revealed in Table 1, over half of the respondents (57%) indicated that their primary activity was being a horse owner (or lessee). More than one-quarter (28%) of respondents indicated that their primary activity was as a breeder, while 5 percent indicated that their primary activity was as a competitor (racing or other equestrian events), and another 5 percent indicated horse stabling or boarding as the primary activity.

TABLE 1: Primary Activity Reported By Survey Respondents.

Expenditure Category	**Number**	**Percent of Total**
Horse Owner	116	57%
Horse Breeder	57	28%
Horse Competitor (racing or other equestrian events)	11	5%
Stabling or Boarding	13	6%
Other (riding lesson provider, farrier, horse trainer, other).	8	4%
Total	205	100.0%

Source: CBER Survey of the Equine Industry

The second question asked for the gross total household/business income in 2002 and the respondents were given five ranges of income levels. The third question asked participants to indicate the breeds of horses primarily housed at their business, the number of horses of each breed, and the uses/disciplines of the horses. The breeds listed on the survey were: Thoroughbred, Quarter Horse, Standardbred, Arabian, Paint, Saddlebred, Appaloosa, Rocky Mountain Horse, Tennessee Walking Horse, Morgan, and other. The uses listed are: racing, showing, other competition, recreation, work, and other. Results of this question were utilized to estimate the number of horses residing in Kentucky.

The fourth question asked respondents to estimate the gross income earned from horses or equine-related activities. The activities listed were: stud fees, horse leasing, horse sales, riding lessons, boarding or stabling, training, shoeing/farrier, trail riding, and other. The question also asked for an estimate of gross income earned from prizes and purses. The respondents needed to specify whether income was earned from activities in Kentucky or in other states. This question was key in determining the extent of equine business revenue that represents new income for Kentucky versus transactions between pairs of Kentucky businesses.

The fifth question was the most detailed and asked for estimates of operating expenses that are horse-related or in support of equine related activities. The respondents were given multiple categories and asked to estimate their expenditures in each category. One key question, for example, asked about the wages and benefits paid in the equine industry. The respondents were asked to specify whether expenditures were connected to activities in Kentucky or to activities in other states. Data on Kentucky expenditures form the basis for estimating the economic impact of the equine industry.

The sixth question asked for the number of employees related to the horse industry on the payroll during 2002. More specifically, it asked for the total number of full-time year-round employees, full-time seasonal employees, part-time employees, and volunteers or family members not receiving wages. These questions were then utilized to determine the paid employment among equine businesses in Kentucky. The last question asked for the zip code where the respondent is located.

The Sample

A sample of equine businesses was assembled based on existing mailing lists or registries for equine businesses and horse enthusiasts in Kentucky. The research team used numerous breed associations as sources for the sample.

The following is an enumeration of all the associations (lists) used:

- Kentucky Natural Gaited Horse Association
- Kentucky Horse Council
- Pinto Horse Association of America
- United States Trotting Horse Association
- Kentucky Thoroughbred Association
- Paso Fino Horse Association
- Kentucky Quarter Horse Association
- Kentucky Thoroughbred Farm Managers' Club
- United Professional Horsemen's Association
- American Haflinger Association (Kentucky Owners)
- American Hackney Horse Society
- Draft Horse Association (Belgian and Clydesdale)
- American Miniature Horse Association
- American Morgan Horse Association
- Trails & Stables from Kentucky Horse Council Listing
- Appaloosa Horse Club
- Kentucky Arabian Associations
- American Saddlebred Horse Association
- American Paint Horse Association
- Tennessee Walking Horse Breeders & Exhibitors Association

The research team combined all of the information from the above mentioned associations. A number of horse owners, breeders, and the like are included in multiple lists, particularly larger ones with a variety of activities. This being the case, extensive efforts were made to check for duplicates among the various lists. The result was a universe of more than 11,000 equine industry participants for sampling.

Next, a random sample of 1,000 entries was drawn for surveying. A questionnaire was mailed to these to these 1,000 participants. After one month, a second mailing was conducted including all the non-respondents to the initial mailing and excluding bad addresses (approximately 50). The response rate after the two mailings was 24 percent, a typical response rate for a mail survey.

III. Estimate of Number of Horses

Official equine censuses are conducted by the United States Department of Agriculture as part of the Census of Agriculture conducted every five years. The most recent census was conducted in 2002, with results due to be released in the spring or summer of 2004. In the absence of more recent data, the 1997 Census of Agriculture figure of 95,932 is the most-often cited number pertaining to the number of horses located in the state of Kentucky. It must be noted that the Census of Agriculture only counts horses that are located on farms.[1] All farms that receive a census form are required by law to respond to the census even if they did not operate a farm in the survey year. Table 2 displays the number of horses and ponies from the last three Censuses of Agriculture. What the Census of Agriculture figure fails to capture are the horses, ponies, and mules, that are not located on a farm. Hence, the census figure most likely significantly understates the actual number of equine located in a given geography.

TABLE 2: Census of Agriculture Equine Statistics

Item	1997	1992	1987
Horses and ponies, inventory (farms)	13,400	12,370	15,168
Horses and ponies, inventory (number)	95,932	78,083	89,902

Source: 1997 Census of Agriculture, U.S. Department of Agriculture

As part of the CBER survey sent to horse farms and horse owners in the state, respondents were asked to identify how many horses they owned by breed. Given the sample used in distributing the survey, survey results captured horses housed at businesses, households, and small farms as well as farms included in the Census of Agriculture Census. This methodology provides a sounder estimate of the actual number of equine located in the state. In 1998, the National Agricultural Statistics Service (a division of the U.S. Department of Agriculture) updated the 1997 Census of Agriculture farm census to produce an estimate of the number of all equine in the United States as well as in each individual state. This report provides an estimate of all horses not on farms in addition to those that are located on farms.[2] This procedure for estimating total equine stocks was completed in both 1998 and 1999. Table 3 shows this estimate for Kentucky in 1998 and 1999.

[1] The Census of Agriculture defines a farm as "…a place which produced and sold, or normally would have produced or sold, $1,000 or more of agricultural products during…" the survey year. United States Department of Agriculture, 1997 Census of Agriculture.

[2] The complete methodology for obtaining the total equine inventory can be found at http://www.usda.gov/nass/pubs/reportname.htm#equine.

TABLE 3: Total Equine Estimates for the U.S. and Kentucky

	United States	Kentucky
1998	5,250,400	150,000
1999	5,317,400	155,000

Source: United States Department of Agriculture, National Agricultural Statistics Service

In addition to the equine counts produced by the National Agricultural Statistics Service, the American Horse Council commissioned a study in 1997 to assess the economic impact of the equine industry at the national, as well as state, level. This study, conduced by the Barents Group, also produced equine head counts at the national and state level. As of the release of the study, there were an estimated 150,000 head of equine in Kentucky.[3]

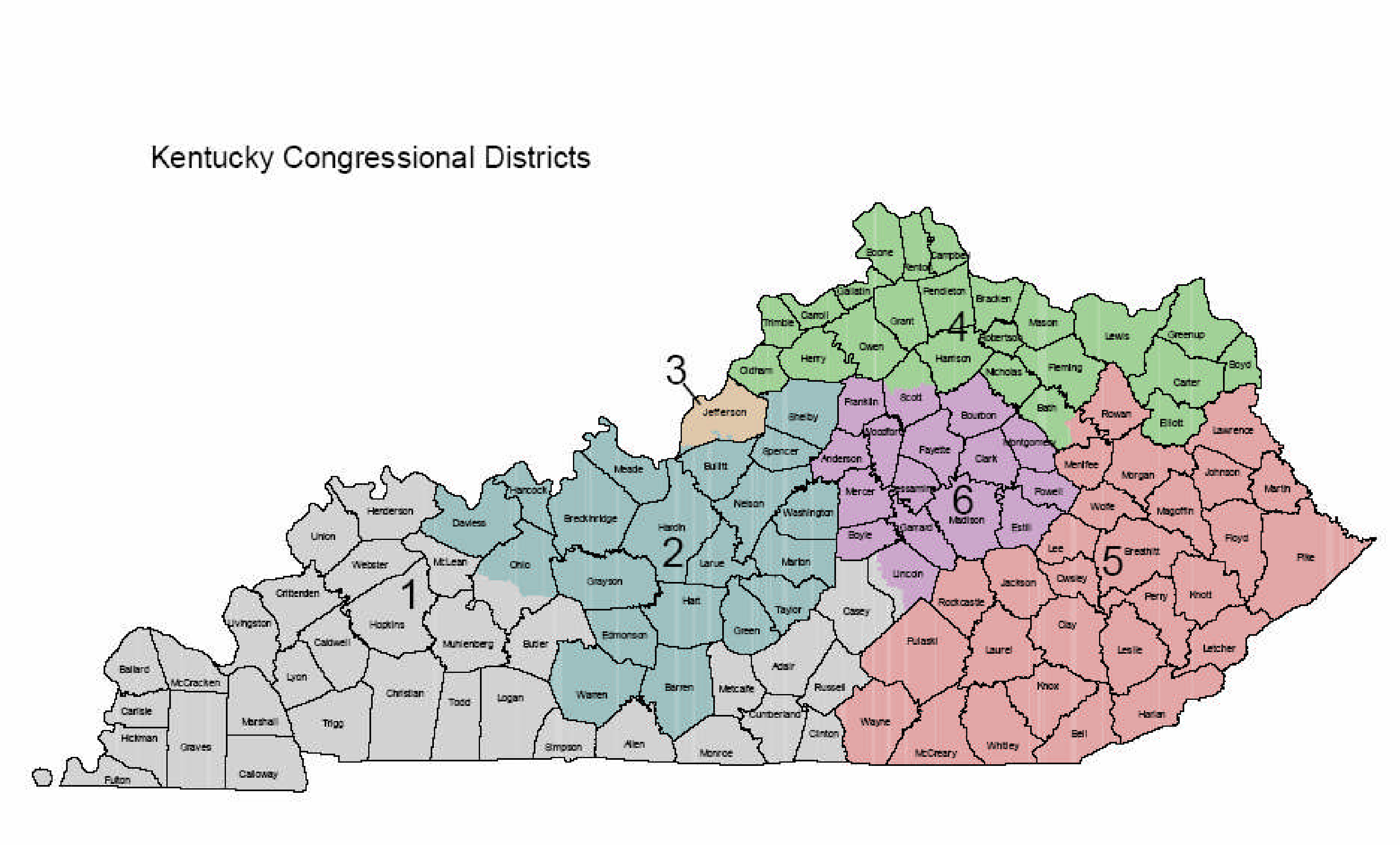
Results from the University of Kentucky CBER Equine Survey provided a result that was higher than, but consistent with the results of the National Agricultural Statistics Service and American Horse Council (Barents Group) study. Higher results from the CBER study reflect the development of the comprehensive mailing list described above. CBER study results, after being scaled according to the sampling methodology outlined earlier, provided an estimate of approximately 180,000 head of equine in Kentucky. This estimate includes horses of all breeds, and includes an estimated 67,000 Thoroughbreds. This estimate, like the U.S. Department of Agriculture and Barents Group estimates, includes both equine located on and off of farms. The CBER survey results, however, would not capture the number of horses that reside at Kentucky racetracks at any one time. Estimates also were broken out by Congressional District, as is seen in Table 4.

TABLE 4: Total Equine Estimates for Kentucky and by Kentucky Congressional District

	Number of Horses
Total	180,000
Congressional District 1	20,000
Congressional District 2	21,000
Congressional District 3	5,000
Congressional District 4	21,000
Congressional District 5	12,000
Congressional District 6	100,000

Source: United States Department of Agriculture, National Agricultural Statistics Service

[3] American Horse Council, *The Economic Impact of the Horse Industry in the United States*. This study can be ordered at http://www.horsecouncil.org/statistics.htm


Kentucky Congressional Districts
1
2
3
4
5
6
Boone
Kenton
Campbell
Gallatin
Pendleton
Bracken
Trimble
Carroll
Grant
Mason
Lewis
Greenup
Owen
Robertson
Henry
Harrison
Oldham
Nicholas
Fleming
Boyd
Carter
Jefferson
Franklin
Scott
Shelby
Bourbon
Bath
Rowan
Elliott
Lawrence
Woodford
Montgomery
Spencer
Anderson
Fayette
Clark
Bullitt
Meade
Menifee
Morgan
Johnson
Hancock
Mercer
Jessamine
Powell
Martin
Henderson
Nelson
Washington
Madison
Wolfe
Magoffin
Daviess
Breckinridge
Hardin
Garrard
Estill
Union
Boyle
Lee
Breathitt
Floyd
Webster
McLean
Ohio
Larue
Marion
Pike
Lincoln
Jackson
Owsley
Knott
Perry
Crittenden
Grayson
Hopkins
Hart
Taylor
Casey
Rockcastle
Livingston
Caldwell
Muhlenberg
Butler
Edmonson
Green
Clay
Pulaski
Leslie
Letcher
Ballard
McCracken
Lyon
Adair
Laurel
Christian
Todd
Logan
Warren
Barren
Metcalfe
Russell
Knox
Harlan
Carlisle
Marshall
Trigg
Cumberland
Wayne
Bell
Hickman
Graves
Simpson
Allen
Monroe
Clinton
Whitley
McCreary
Calloway
Fulton

IV. Equine Industry Expenditures

Kentucky is home to world class horse farms, training facilities, equine auction venues, and equine-related recreation/tourism attractions such as racetracks. Each of these types of venues makes substantial contributions to the Kentucky economy. Among these contributions, these equine businesses bring over a billion dollars into the Kentucky economy and supports supplier businesses throughout the state.

Such contributions are typically measured by calculating an industry's economic impact on the state. The economic impact in turn is driven by the expenditures of the industry.

This section reports on the expenditures of the equine industry in Kentucky, providing a key measure of the size of the industry, and forming a basis for the economic and fiscal impact calculations made in the next two sections. There are three main sources of expenditures stemming from the equine industry. The first is the expenditures of industry participants that were part of our survey: owners, breeders, trainers, riding establishments, and the like. The second is additional equine service businesses such as horse auction businesses located in Kentucky. The third is equine recreation/tourism businesses such as racetracks.

The principal source for estimating expenditures was the CBER Equine Industry Survey which was described earlier. Respondents provided expenditures in thirty-five categories (see Appendix 1) including worker wages and benefits, horse purchases and stud fees, hay and bedding, and routine business operating expenses such as telephone and office supplies. Reported expenditures were scaled to reflect the over 11,000 horse industry participants in the sample and yielding an estimate of industry expenditures by owners, breeders, trainers, and boarders in Kentucky.

Kentucky expenditures for 2002 are reported in Table 5 below. Results from the 35 expenditure categories were combined into nine groupings that are reported in Table 5: horse supplies, horse acquisition, services for horses, rider education, competition costs, worker wages and benefits, general business expenses, taxes, and other. Results show total industry expenditures of $1.41 billion during 2002. These expenditures were spread widely among the expenditure categories. Services for horses accounted for 23.1 percent. Main expenditure categories within the horse expenditure grouping were boarding, training, and veterinary fees. Horse acquisition including horse purchases or leasing and stud fees accounted for 22.5 percent. Worker wages and benefits accounted for 18.2 percent of costs. General business expenses such as advertising, insurance, utilities, office supplies, and maintenance accounted for 14.2 percent of costs. Horse supplies such as feed, bedding, and tack accounted for 11.2 percent of costs. Remaining costs went to taxes, rider education, and travel and registration costs associated with competitions.

The vast majority of the expenditures in Table 5 occurred in the state of Kentucky. Estimates from the survey indicate that nearly 92 percent of expenditures occurred in Kentucky.

TABLE 5: Expenditures by Type of Horse Owners, Breeders, Competitors, Trainers, Farriers, and Boarders.

Expenditure Category	Expenditures (Millions $)	Percent of Total
Horse Supplies	$158.5	11.2%
Horse Acquisition	$317.5	22.5%
Services for Horses	$325.7	23.1%
Rider Education	$1.9	0.1%
Competition Costs	$39.4	2.8%
Worker Wages and Benefits	$256.7	18.2%
General Business Expenses	$200.6	14.2%
Taxes	$34.0	2.4%
Other	$75.9	5.4%
Total	$1,410.3	100.0%

Source: CBER Survey of the Equine Industry

Other Equine Services

Expenditures reported in Table 5 account for a large share of the expenditures in Kentucky related to the equine industry, but there are others. A variety of equine services businesses were not included in the sample of industry participants covered by the CBER Equine Industry Survey. Horse auction facilities, veterinarians, equine transportation firms and equine business services firms are among the most prominent examples.

Expenditures of these service businesses should be included in calculations for the industry. To do so, the largest participants in these additional service industries were surveyed regarding expenditures, or estimated expenditures independently. For the horse auction businesses, information was gathered about sales in Kentucky at the auctions of Keeneland, Fasig-Tipton, and Tattersals during 2002. CBER estimated that 7 percent of these sales represented revenue to the auction houses based on entry fees and standard commissions. Using this approach, we estimated $560 million in equine sales and $39 million in revenue to support the expenditures of horse auction houses.

Firms operating in the other equine services such as veterinary, transportation, and business services (loans and insurance) were contacted regarding their sales, particularly to out-of-state customers, in order to include their export activities in economic impact estimates. Firms were contacted by e-mail as well as by telephone. Unfortunately, the majority of the firms surveyed declined to participate. As a consequence, the data that was gathered from those equine service firms willing to participate cannot be released in order to protect the privacy of respondents. Responding firms, however, did confirm that Kentucky equine service providers have customers throughout the country and abroad. Sales of services to these customers yield an additional economic impact for Kentucky beyond providing services to the Kentucky equine owners, breeders, trainers, and riding establishments whose expenditures were discussed in Table 5. Readers should bear in mind that the economic impact figures developed in this report do not reflect that.

Recreation and Tourism

There was more success in securing information from many of the major participants in the Kentucky equine-related tourism industry. Revenue and visitor information was gathered for several of the major horse racing tracks in the state, as well as three major equine-related tourism attractions: the Kentucky Horse Park, the Kentucky Derby Museum, and the Kentucky Fair and Exposition Center.

Kentucky is home to a number of internationally known racetracks. Thus it is no surprise that the revenues of racetracks account for a substantial share of equine tourism in Kentucky. This analysis focused on the activities of Keeneland and Churchill Downs. The finding was that these two racetracks had combined betting receipts of approximately $1 billion in the year 2002 from 1.3 million visitors. Assuming that net revenue to racetracks was roughly 25 percent considering net gaming revenue, track admissions, and food, drink, and retail sales, racetrack revenue was estimated to be $250 million.

Other equine tourism businesses also bring a substantial amount of new revenue to Kentucky. The Kentucky Horse Park's annual revenue stood at $158,000,000 for 2002 with an estimated 850,000 visitors. An estimated 60 percent of those dollars came from out-of-state patrons. The Kentucky Derby Museum brought in $3,500,000 in revenues for 2002 with 200,000 visitors. This tourist location was supported almost entirely by out-of-state visitors, as only 10 percent of patrons lived in Kentucky. The Kentucky Fair and Expo Center, which hosts exhibitions, conventions, trade shows, public gatherings, cultural activities, and other functions, had total revenues for 2002 of $25,070,000 and was visited by an estimated three million people. Of this, approximately 1 percent (of revenues) can be attributed to horse shows, resulting in over $250,000. The total equine-related tourism from these three attractions was approximately $162 million.

This figure of $162 million should be added to the $250 million attributable to racetracks to yield an estimate of $412 million in spending in Kentucky due to equine-related tourism attractions. These estimates, however, only include the revenue raised on-site by visitors to Kentucky's largest racetracks and other equine recreation and tourism businesses. The off-site spending of visitors also brings new income into Kentucky, particularly visitors from out-of-state. Based on the data provided above, it is estimated that there were roughly 2.38 million visitors to Kentucky's major equine tourism attractions in 2002. The average spending of these visitors was not available from the attractions surveyed, but data on average visitor spending is available from the Kentucky Department of Travel in the Kentucky Tourism Development Cabinet. These figures show the average spending by visitors to Kentucky attractions. The average spending of Kentucky attraction visitors is $49.46 per visitor per day outside of the attraction. Applying this figure to 2.38 million visitors yields an off-site spending of $118 million in 2002 by major equine tourism attraction visitors.

Combining this figure with the revenues of racetracks and other equine attractions yields a total spending impact of $550 million in Kentucky in 2002. Note that this spending estimate does not reflect the tourism revenue from horse shows, except to the extent that horse shows make up a portion of the activity at the Kentucky Horse Park and the Kentucky Fair and Exposition Center. The research team did not have success in contacting horse show organizers.

Employment and Wages

Employment and wages are associated with the expenditure data described above for equine businesses, racetracks, equine sales, and the off-site spending of tourists. Employment and wages for employees of horse owners, breeders, competitors, trainers, farriers, and boarders were gathered directly by the survey of the Kentucky's equine industry. Employment at other equine service businesses, and equine recreation and tourism businesses was estimated based on the expenditure information reported earlier. The Micro IMPLAN model was utilized to estimate the ratio between expenditures and employment, and expenditures and worker earnings for each of these industries. These ratios were applied to expenditure estimates to yield the employment and wage estimates reported below in Table 6.

TABLE 6: Employment and Wages and Benefits in Kentucky Equine Industry

	Employment	**Wages and Benefits (Millions $)**
Equine Businesses	22,900	$256.7
Other Equine Services	500	$11.2
Recreation and Tourism	14,500	$230.4
Total	37,900	$498.3

Source: CBER Survey of the Equine Industry, Table 4, and Micro IMPLAN

V. Economic Impact

The expenditure figures presented above suggest that the equine industry has a substantial economic impact on the Kentucky economy. The size of this impact, however, depends on the extent to which spending by equine establishments is new income for Kentucky. Calculating this, in turn, depends on estimating how much of these expenditures are supported by out-of-state sales or sales to out-of-state business and individuals. The amount of Kentucky expenditures that are supported by out-of-state sales would be the direct effect of the equine industry.

Respondents to the CBER Equine Industry Survey were asked the percentage of their income from horse sales, boarding, stud fees, prizes and purses, etc., that were earned from activity in other states. More than $100 million in out-of-state sales were identified in this way. There was also approximately $660 more in sales of horses, stud fees, and boarding services in Kentucky than were recorded as expenditures for these in the state.[4] These two findings were combined to estimate that roughly 68 percent of sales of survey respondents were to out-of-state customers. As noted early, 92 percent of purchases occurred in Kentucky. Combining these two figures, roughly $886 million (63 percent) of the $1,410.3 million in expenditures by Kentucky equine businesses was supported by new revenue brought into the state and spent in Kentucky. This figure of $886 million is the estimate for the direct effect of businesses covered by the equine survey.

There was additional direct effect from other equine services. As reported earlier, the commissions on equine sales were valued at approximately $39.4 million in 2002. All of this should be counted as part of the direct effect, that is, as new income brought into Kentucky. These sales likely would have occurred at similar specialized equine sales organizations whether or not these facilities were located in Kentucky.

Kentucky recreation/tourism businesses such as racetracks, the Kentucky Horse Park, and businesses such as hotels and restaurants that service equine tourists off-site had net income estimated at $550 million in 2002. A substantial portion of this income is supported by out-of-state residents rather than by Kentucky residents. This is particularly true since Kentucky racetracks are located close to state borders, have a national or international reputation, or both. Estimates show that approximately 33 percent of visitors to racetracks are from

[4] CBER also conducted a follow up survey with a sample of respondents to inquire more about the residency of their customers. Results from this survey indicated that more than half of sales in Kentucky occurred in the state but was made to out-of-state customers. This finding also would lead to the movement of $600-$700 million in Kentucky sales into the out-of-state sales category.

out-of-state, along with 60 percent of visitors to the Kentucky Horse Park, and 90 percent of visitors to the Kentucky Derby Museum, as was reported earlier. Based on these figures, \$208.4 million of the \$550 million should be counted towards the direct effect. [5]

Based on this direct effect, the total economic impact of resort parks can be calculated as in Table 7. The multiplier effect (indirect and induced impact) is based on economic multipliers calculated for Kentucky using the Micro IMPLAN model. The multipliers illustrated in the table are the weighted average of those for each of the individual expenditure categories—horse supplies, horse acquisition, services for horses, and the like—that make-up the total expenditure data presented earlier. IMPLAN multipliers for other equine service (equine sales) businesses are taken from the Micro IMPLAN model as is the multiplier for recreation/tourism. The total economic impact from all sources, as is indicated in Table 7, was more than \$1.77 billion dollars in 2002.

Employment and Earnings Impact

The economic impact described above is a key measure of how the equine industry impacts the economy. However, there is also an employment and income impact that accompanies this economic impact on total economic activity. This section discusses this employment and income impact.

Table 8 illustrates the total employment and earnings impacts on the state economy, as well as the economic multipliers used to calculate total employment and earnings impacts from the direct effects reported in Table 7. Indirect employment and earnings multipliers are developed using weighted averages of Micro IMPLAN multipliers, as described above for total expenditure impacts. The total earnings impact of the equine industry is estimated at over 30,000 jobs and nearly two-thirds of a billion dollars of earnings.

[5] This figure also reflects that the share of racetrack purses that accrue to Kentucky owned horses was subtracted from the total revenue for racetracks since this revenue was already counted in the equine businesses category.

TABLE 7: Economic Impact of Kentucky Equine Industry 2002.

	Expenditure ($millions)	Percent of Expenditures Included in Direct Effect	Direct Effect	Spending in Kentucky Indirect Multiplier	Indirect (and Induced) Impact	Total Impact
Equine Businesses	$1,410.3	63%	$886.0	0.57	$504.0	$1,390.0
Other Equine Services	$39.4	100%	$39.4	0.68	$26.8	$66.2
Recreation/Tourism	$550.0	38%	$208.4	0.52	$109.1	$317.5
Total			$1,133.8		$639.9	$1,773.7

Source: Micro IMPLAN and author's calculations

TABLE 8: Employment and Earnings Impact of Kentucky Equine Industry 2002.

	Direct Effect ($ Millions)	Kentucky Multiplier	Total Impact
		Earnings Multiplier	Earnings Impact ($ Millions)
Equine Businesses	$886.0	0.56	$495.9
Other Equine Services	$39.4	0.51	$19.9
Recreation/Tourism	$208.4	0.56	$117.3
Total	$1,133.8		$633.1
		Employment Multiplier (per $ Million)	Employment Impact
Equine Businesses	$886.0	26.5	23,500
Other Equine Services	$39.4	23.5	900
Recreation/Tourism	$208.4	35.7	7,400
Total	$1,133.8		31,800

Source: Micro IMPLAN and author's calculations.

VI. Fiscal Impact

A significant fiscal impact is associated with the economic impact of the equine industry. The increases in sales and income described above for the Kentucky economy due to the equine industry yield increases in sales and income taxes and occupation taxes, as well as other types of revenue. This section will review the income, occupation, and sales taxes generated in Kentucky due to the equine industry. Other taxes are not considered, the focus is on these major tax types. However, results do consider the corporate tax impacts and property taxes reported by participants in the survey, as well as revenues due to pari-mutuel betting.

Table 9 reports estimates of the revenue generated by the Kentucky equine industry. The direct sales impact is based on the sales of horses (direct sales and auction sales), and the sales of equine tourism businesses. The share of those sales which is subject to tax is estimated and then a 6 percent sales tax is implied. The indirect sales tax occurs since a portion of the goods and services purchases due to the "multiplier" effect are subject to sales tax. The share subject to tax is estimated at approximately 40 percent. A 6 percent sales tax is applied to the amount subject to the sales tax to estimate indirect sales tax impacts.

The income tax impact from the equine industry is derived from the worker earnings impact estimated earlier. As indicated in Table 8, the earnings impact was nearly two-thirds of a billion dollars. An average Kentucky income tax rate of 2.75 percent is applied. This is the effective income tax rate after adjusting the 6 percent top rate for exemptions, deductions, and progressive tax rates. Local occupational tax revenue, like the income tax, is based on the income impact. The average occupational wage tax calculated for Kentucky counties and cities was estimated at 0.9 percent. This occupational tax rate was applied to income taxes to calculate the occupational tax rate.

The survey respondents reported state corporate income and property taxes paid. These payments were multiplied by the share of respondent sales that occurred out-of-state to estimate a corporate or property tax impact. The pari-mutuel tax revenue paid in Kentucky is also added to the tax impact.

The total tax impact was the sum of the sales, income, occupational, and reported corporate and property tax impacts. This impact is a lower estimate, since it does not include a number of miscellaneous state and local taxes collected in Kentucky. However, it includes most major tax categories. The estimated tax impact for 2002 was $102.6 million dollars.

TABLE 9: Income and Sales Tax Revenue Impact of Kentucky Equine Industry 2002

Tax	Economic Impact Variable/Source	Amount of Economic Variable ($ Millions)	Percent Subject to Tax	Tax Base ($ Millions)	Tax Rate	Revenue Impact ($ Millions)
Direct Sales Tax	Direct Sales	$781.0	100%	$781.0	0.06	$46.9
Indirect Sales Tax	Indirect Sales	$639.9	40.0%	$256.0	0.06	$15.4
Income Tax	Personal Income	$633.1	100.0%	$633.1	.0275	$17.4
Occupation Tax	Personal Income	$633.1	100.0%	$633.1	.009	$5.7
Corporate Tax	Reported on Survey		68%			$2.0
Property Tax	Reported on Survey		68%			$7.0
Pari-Mutuel Tax	Reported by Kentucky Revenue Cabinet		100%			$5.2
Total Revenue						$102.6

VII. Conclusion

The equine industry is a leading part of the Kentucky agricultural sector and the overall Kentucky economy. Owners, breeders, boarders, trainers, and equine service providers generate sales and expenditures of over $1.41 billion per year. Additional portions of the industry such as auction houses and race tracks generate hundreds of millions of dollars in additional revenue and expenditure. These are large figures given that Kentucky had a gross state product of $120 billion in 2001.[6]

The first step in the study was to estimate the number of horses that reside in Kentucky. The estimate was that 180,000 horses reside in Kentucky. This estimate does not include any horses that reside at racetracks. The estimate is higher than, but consistent with recent estimates developed by the U.S. Department of Agriculture that estimate that 155,000 horses reside in Kentucky.

The survey of the equine industry further indicated that the expenditures of Kentucky horse owners, breeders, competitors, and equine service providers equaled $1.41 billion in 2002. Worker earnings at these businesses equaled $257 million for 22,900 jobs (full-time, part-time, and seasonal). Some of the expenditures of the Kentucky equine industry represented purchases from other portions of the industry, such as one Kentucky horse farm purchasing stud services or a horse from another Kentucky farm. After accounting for these, and out-of-state purchases, the direct effect of the horse owners, breeders, farriers, and the like on the Kentucky economy was estimated at $886 million in 2002. The overall direct effect of the Kentucky equine industry rises to $1.13 billion in 2002 upon adding in the direct effect of additional equine services such as horse auction houses, and the direct effect of the equine tourism industry.

The total economic impact of the equine industry including the direct effects discussed above and "multiplier" effect is $1.77 billion. There are jobs and worker's earnings associated with this impact of $630 million, and 31,800 jobs.

The fiscal impact from Kentucky sales taxes, income taxes, occupational taxes, and others was estimated based on these economic impact figures. The estimated fiscal impact from these sources was $102.6 million. This figure does not include a variety of miscellaneous and property tax impacts.

[6] Source: www.bea.gov

Appendix 1

Kentucky Equine Survey

1. Are you presently an active participant in the horse industry as a horse owner, breeder, competitor, or equine service provider (i.e., stable owner, trainer, riding lesson instructor, farrier, etc.)?

☐ **Yes** ☐ **No**

If you answered **NO** to Question 1, please return the questionnaire in the enclosed business-reply envelope. Thank you for your participation in this important study of the equine industry in Kentucky.

If you answered **YES** to Question 1, please indicate in Column A of the chart below which **one** activity in the equine industry best describes your current, primary role in the industry. In column B, check any other activities from which you received income in 2002 or in which you actively participated last year (2002). (**CHECK ONLY ONE IN COLUMN A AND ALL THAT APPLY IN COLUMN B)**

	A	**B**
	Your Primary Activity (**CHECK ONE)**	Your Other Equine-Related Activities (**CHECK ALL THAT APPLY)**
Horse owner or lessee		
Horse breeder		
Horse competitor (racing or other equestrian events)		
Horse trainer		
Horse stabling or boarding		
Riding lesson provider		
Farrier		
Provider of other services for horses you own or lease (please specify activities)		
Provider of other services for horses you do not own (please specify activities)		

2. What was your gross (before taxes) total household/business income in 2002? (**CHECK ONLY ONE**):

________ $0-$24,999 ________$75,000-$99,000
________$25,000-$49,999 ________$100,000+
________$50,000-$74,999

3. In the table below, please indicate the number of horses primarily housed at your business as of December 31, 2002, for each of the disciplines or uses listed.

	TOTAL NUMBER OWNED	**Racing**	**Showing**	**Other Competition**	**Recreation**	**Work**	**Other**
Thoroughbred							
Quarter Horse							
Standardbred							
Arabian							
Paint							
Saddlebred							
Appaloosa							
Rocky Mountain Horse							
Tennessee Walking Horse							
Morgan							
Other (please specify type(s))							

4a. In the chart below, please estimate your gross income earned from your horses or equine-related activities in 2002. Please specify whether income was earned from activities in Kentucky or in other states. Where sales are involved, please estimate proceeds from those sales, not net profits.

	TOTAL GROSS INCOME, 2002	
Activity	**In Kentucky**	**In Other States**
Stud fees		
Horse leasing		
Horse sales		
Riding lessons		
Boarding or stabling		
Training		
Shoeing/farrier		
Trail riding		
Other activities (Please specify)		
TOTAL INCOME		

4b. Please estimate your gross income earned from **prizes and purses** in 2002 by where the winnings took place.

Location	**Amount of Total Prizes and Purses Won, 2002**
Kentucky	
Outside of Kentucky	

5. In the chart below, please estimate the expenditures you made **on your horses or in support of your equine-related activities** in 2002. Please specify whether expenditures were for activities in Kentucky or activities in other states. Please estimate all categories to the nearest dollar.

	TOTAL EXPENDITURES, 2002	
Operating Expenses	**In Kentucky**	**In Other States**
Feed		
Bedding		
Medicine and vitamins		
Grooming supplies		
Tack and equipment		
Horse purchases		
Other horse supplies		
Boarding		
Equine training		
Rider education and lessons		
Shoeing/farrier		
Veterinary fees		
Trailering and horse transport		
Travel and accommodations		
Horse lease payments		
Entry fees		
Stud fees		
Registration Fees		
Other horse services		
Wages, benefits, commissions		
Advertising		
Car and truck maintenance		
Horse farm equipment		
Insurance		
Office supplies		
Facilities maintenance/improvement		
Licenses		
Utilities (except telephone)		
Telephone/Fax		
Dues and subscriptions		
Federal corporate income tax		
State corporate income tax		
Property taxes		
FICA taxes for employees		
Other expenses (Please specify)		
TOTAL EXPENDITURES		

6. Please indicate the number of employees related to the horse industry that were on your payroll during 2002. Do not include yourself or any co-owners outside your household with an ownership interest.

   a. Total number of **full-time**, **year-round** employees. __________
   b. Total number of **full-time**, part-year, **seasonal** employees _______
      What is the average number of weeks worked by the seasonal employees? __________________
   c. Total number of **part-time** employees. ____________
      What is the average number of weeks worked by the part-time employees? _____________
      What is the average number of hours worked each week by the part-time employees? ___________________
   d. Total number of **family members, friends, and volunteers** involved with your horses, but **not receiving wages**. ___________________

7. In what zip code is your business located?___________________

Thank you for your participation in this important study. Please return the completed survey in the enclosed, business-reply envelope. Your responses to this survey will be kept **strictly confidential and anonymous**.