The Influence of the Agricultural Cluster on the Fayette County Economy

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Executive Summary

In 2012, the Fayette County Kentucky Farm Bureau funded a project by the University of Kentucky College of Agriculture to investigate the impact of Fayette County agriculture on the county's economy. The project contains multiple studies that use different methods and information sources to gain a more complete picture of a complex topic. The studies contained in this report are:

I. Economic Impact of Agriculture in Fayette County, Kentucky
II. Interviews with Fayette County Business Leaders
III. The Impact of Equine Sales and Horse Racing Facilities on Non-Agricultural Industries

The purpose of the project is to gather evidence useful in guiding local policies and economic development strategies. Each component of the project is summarized below.

I. Economic Impact of Agriculture in Fayette County, Kentucky

Historically, employment associated with agriculture in Fayette County has been limited to production agriculture. Recently, the Ag Cluster has been extended to include agricultural inputs and food processing and manufacturing. However, there are hundreds of establishments in the county that are service-based (finance, veterinary, recreation), transportation, communications, as well as wholesale and retail businesses that are 100% dedicated to agriculture. These businesses have never been included in an economic impact study exploring the impact of agriculture in Fayette County. Ignoring these businesses underestimates the value of the agricultural sector. This is particularly important in Fayette County because of its competitive advantage in the equine industry. After an extensive search, and the creation of a new agriculture business directory, we now have recent data about employment in many industries that are part of the Ag Cluster.

When the Ag Cluster is defined to include business services and retail and wholesale trade solely dedicated to agriculture, in addition to the traditional way agriculture has been measured, it is estimated that a total of 16,676 jobs are attributed to this cluster. In addition, there are approximately 1,520 jobs associated with a proportion of the hospitality sector (25% lodging and 5% restaurants) in Lexington. In essence, given total employment in the county (147,000) these results suggest that roughly one out of every 9 jobs is directly or indirectly associated with the Ag Cluster.

In addition, the Ag Cluster generates approximately $2.4 billion in output annually and $1.32 billion dollars in additional income, profits, and dividends. Finally, it is estimated that a little over $66 million in tax revenue is collected from state income tax and sales tax, as well as approximately $7 million in occupational license taxes for Fayette County from the Ag Cluster.

II. Interviews with Fayette County Business Leaders

Over the summer and fall of 2012, 12 informal conversations were held with representatives from Lexington businesses in the design, health, financial, hospitality/tourism, marketing, advanced manufacturing, construction, food service, and nonprofit sectors. The conversations focused on factors that make Fayette County a desirable place to operate a business, to work, and to live. Despite the diversity of businesses, common themes emerged.

The quality of life in Lexington was consistently identified as a source of Lexington's economic vitality, with landscape being a key aspect. "Without our landscape, we have no hook to differentiate ourselves from other small cities in the Midwest or the southeast." Quality of life is important in professional workforce recruitment. "The attractiveness of the green space, the farms, so easily accessible to the heart of the city does make a difference for our employees – it is a part of what attracts them and keeps them here."

Lexington's agricultural base provides economic opportunities for other sectors. Equine-related tourism is a driver of the hospitality sector. "The dining and hotel choices that we have here, the entertainment are pulled in by the presence of the Thoroughbred industry. These amenities would go away without the horse industry ..." Agriculture supports other sectors, as well. "The horse farms are like Toyota, ... It is these different layers of related businesses that make the horse farms and the cattle farms and all the others so important to our economy."

The discussions indicated that quality of life and benefits to business would be diminished with a loss in the agricultural landscape. This was a special concern of those in the hospitality sectors as illustrated by the following: "The landscape is fundamental to what we do. If the landscape and the horse farms disappeared, we would have no brand."

III. The Impact of Equine Sales and Horse Racing Facilities on Non-Agricultural Industries

Fayette County agricultural sales are dominated by the equine industries. This study measured the impact of equine sales and the presence of horse racing on six other industries: hospitality, recreation, finance, real estate, professional services, and retail trade. We report only the impacts that passed a stringent threshold of statistical significance, so the results are conservative estimates.

An additional 10% of equine sales is associated with 10 additional business establishments in the professional services, real estate, recreational, and financial industries, $6 million of additional annual payroll in the professional services industry, and $45 million of additional annual sales in the professional services, real estate, and retail industries.

The presence of a horse racetrack in a county has strong impacts on the hospitality, recreation, and retail industries. In Fayette County's case, 15 additional recreational establishments, $88 million in additional annual payroll in these three industries, and $74 million in additional recreational sales are attributed to the racetracks' presence.

The analysis quantifies how important Fayette County's distinctive brand is to major components of the local economy. Agriculture imports wealth into Fayette County that is spent locally by industry participants and visitors. The area's nationally-recognized character is a catalyst offering businesses a framework on which to build their own image. The quantitative results of this study mirror the statements of business leaders reported in Part II of this project.

The Influence of the Agricultural Cluster on the Fayette County Economy

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II. Interviews with Fayette County Business Leaders

III. The Impact of Equine Sales and Horse Racing Facilities on Non-Agricultural Industries

I. Economic Impact of Agriculture in Fayette County, Kentucky

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Introduction

The economy of Fayette County is diverse as many industries are well represented through employment opportunities. For example, manufacturing represents just 5.7% of all jobs in Fayette County. The county has a larger than average government sector. In 2012, government (including public education [K-12 and higher education] and city government) represented 19% of all jobs. Agriculture, which is often only measured as employment associated with production agriculture, is also considered an important component to the regional economy.

While employment associated with production agriculture has declined over the last decade in the county, there are still roughly 5,500 jobs in this sector. Figures 1 and 2 provide an overview of the farm employment in Fayette County and how it relates to total employment in the county and Kentucky farm employment, respectively.

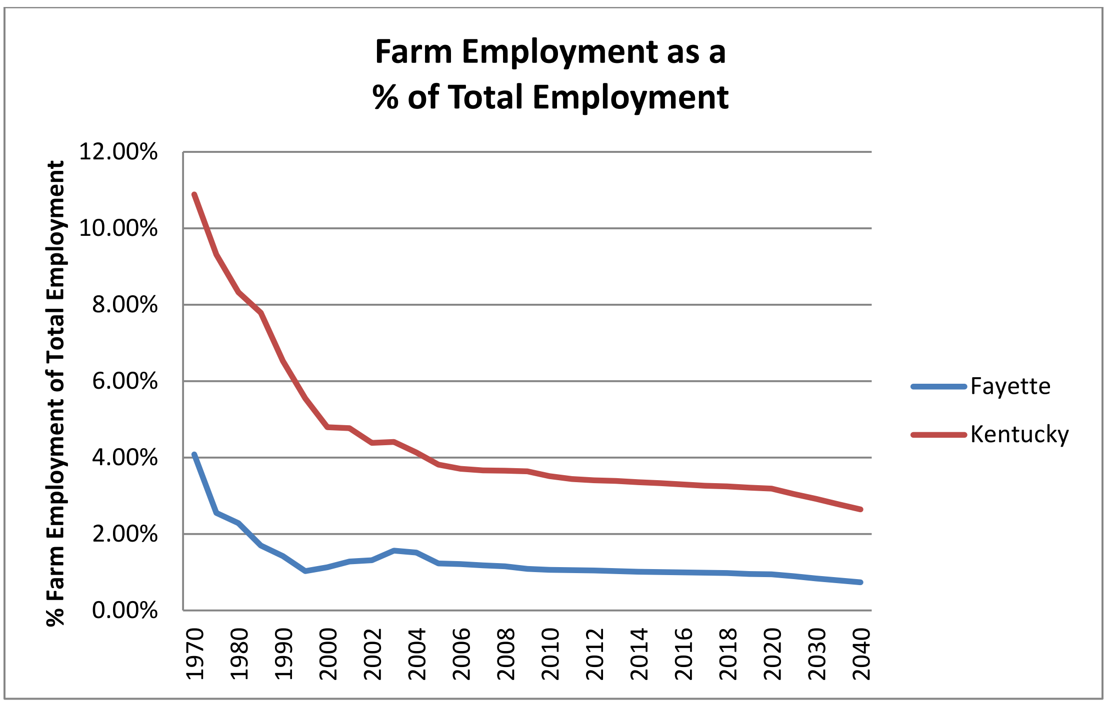

Figure 1. Fayette Farm Employment as % of Total Employment
Source: Bureau of Economic Analysis

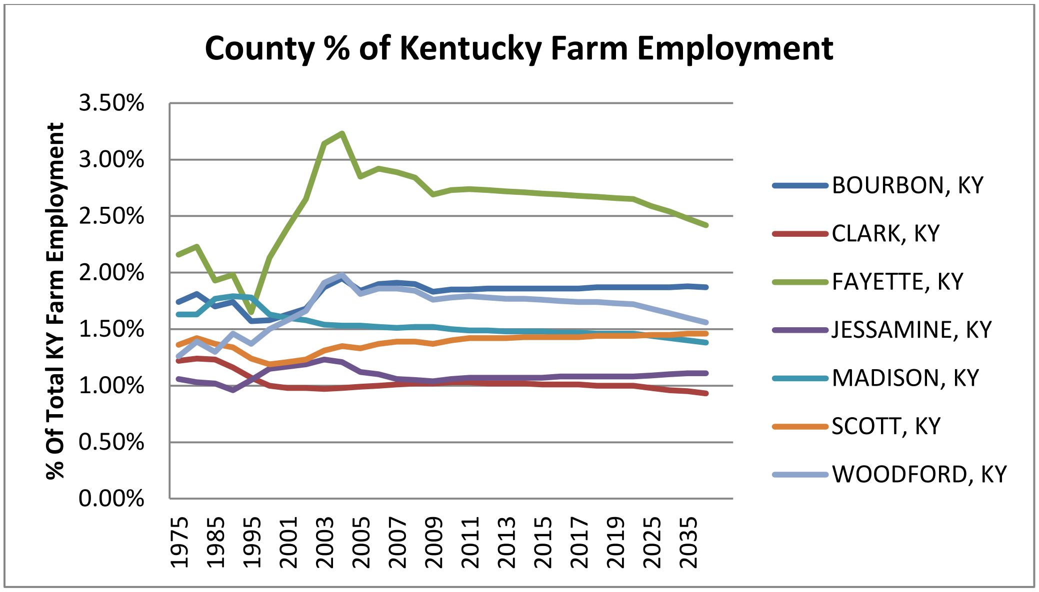

Figure 2. Fayette County Farm Employment as % of Kentucky Farm Employment
Source: Bureau of Economic Analysis

The relative concentration of industry in a particular location is often measured using a location quotient. A location quotient identifies the relative size of the industry (by employment) relative to employment in that same industry in a base area, in this instance, Kentucky. If the location quotient is greater than 1 then the industry is considered "relatively concentrated" and is usually considered an export sector. In Fayette County, only the information, arts and recreation, government and finance industries are considered export sectors. The LQ for each of these industries is still less than 1.5. In contrast, the equine industry has a location quotient of 5.2. In most instances when a location quotient is large there will likely be supporting industries in close proximity because of the opportunities for horizontal and vertical integration. This is the case for the Fayette County Equine Industry[1].

The Agricultural Cluster

Today agriculture is defined in much broader terms and it is now measured as production agriculture, agricultural inputs, and food processing/manufacturing[2,3]. These businesses have never been included in an economic impact study exploring the impact of agriculture in Fayette County. Ignoring these businesses underestimates the value of the agricultural sector. This is particularly important in Fayette County because of its competitive advantage in the equine industry. There are an additional 686 jobs in these additional agriculture and food sectors. Specifically there are jobs associated with fertilizer manufacturing, the Coca Cola plant and Jif, the peanut butter processing facility. Wineries and breweries are relatively small in Lexington but these are both rapidly growing industries. Alltech

[1] There are hundreds of establishments in surrounding counties but the focus of this research is solely on Fayette County.

[2] Goetz, Shields and Wang. 2004. Agricultural and Food Industry Clusters in the Northeast U.S.: Technical report. Regional Rural Development Paper No. 26. Northeast Regional Center for Rural Development.

[3] Deller, Steven C. and David Williams. 2009. The Contribution of Agriculture to the Wisconsin Economy. UW-Cooperative Extension.

Lexington Brewing and Distilling Company has been in operation in Fayette County since 2000. West Sixth Brewery is a new establishment but has an increasing presence and there is an expectation that there will be new breweries opening in Lexington soon (the numbers associated with West Sixth Brewery are not included in the analysis because the establishment is too new).

In addition, there are hundreds of establishments in the county that are service-based (finance, veterinary, recreation), transportation, communications, as well as wholesale and retail businesses that are 100% dedicated to agriculture. After an extensive search, and the creation of a new agriculture business directory, we now have recent data about employment in many industries that are part of the Ag Cluster. In total, we found that there were a minimum of 4,851 jobs associated with this cluster. The majority of the establishments were identified by searching through a national business database using the following keywords: equine, horse, agriculture, farm, grain, hay, tobacco, cattle, fertilizer, fence, racing, tack, bridle, and thoroughbred. Each business was then verified online by searching through the businesses website to confirm that the business was still operating and to double check the number of employees reported in the directory with the number of employees reported on the business website. The directory is not all inclusive of all agriculture specific firms in the county but rather is a first attempt to inventory the number of establishments and employment. It is expected that this directory will grow once it becomes publicly available.

The perfect analysis would incorporate employment within all industries that support the Ag Cluster even if the business also serves other industries. Including all employment overstates the importance of agriculture and excluding all employment understates the value of agriculture. There are service industries including legal, accounting, insurance, banking, retail, food and drinking places, and accommodations that clearly support the Ag Cluster but without having specific information detailing the distribution of employment devoted to the Ag Cluster, the authors felt uncomfortable including these non-agriculture specific industries in the analysis and assumed that a percentage of the real employment associated with agriculture would be picked up in the multiplier impact.[4]

Figure 3 provides a mapping of the industries that are considered part of the Ag Cluster. Agriculture production is the center of the cluster. Historically, employment associated with agriculture has been limited only to production. More recently, agriculture cluster studies across the nation have measured the agriculture cluster to include inputs to production and food processing and manufacturing. Our study is unique in that it also includes the other sectors that are a byproduct of production agriculture. Each of the industries provided in Figure 3 consists of businesses that are solely dedicated to agriculture. When appropriate, examples of specific firms are included. Although professional services, for example, is one of the components of the cluster, recall that only businesses 100% devoted to agriculture are included in the analysis.

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[4] The analysis does include several conservative estimates about the share of three industries to the Ag Cluster: warehousing, real estate, and wood/pallet manufacturing. For each of these industries we assume that 5% of their production is devoted to agriculture.

Figure 3. The Ag Cluster

Table 1. The Production Agriculture and Food Processing Cluster

Implan Sector	Industry	Direct Employment from Ag	Output	Employee Compensation	Value Added	Proprietor Income	Other Property Type Income	Indirect Business Tax
1-19	All Production Agriculture	5,556	$412,961,786	$145,621,319	$234,847,344	$27,918,883	$51,562,827	$9,744,315
42	Other animal food manufacturing	36	$43,895,287	$2,722,439	$6,156,272	$115,798	$3,211,735	$106,301
51	Confectionery manufacturing / chocolate	18	$5,362,669	$422,193	$973,053	$34,515	$510,175	$6,169
54	fruit and vegetable canning, pickling, & drying	61	$33,001,862	$3,454,135	$8,239,804	$246,400	$4,476,364	$62,905
62	Bread and bakery Product manufacturing	94	$14,422,086	$1,844,673	$3,486,900	$44,738	$1,441,554	$155,936
65	Snack food manufacturing	127	$91,204,247	$7,552,701	$26,840,293	$171,046	$18,897,013	$219,534
68	Seasoning and dressing manufacturing	2	$1,047,488	$127,729	$186,546	$5,359	$46,864	$3,595
69	All other food manufacturing	69	$23,422,190	$3,636,946	$6,366,126	$209,620	$2,467,330	$52,230
70	Soft drink and ice manufacturing	208	$142,885,117	$9,715,296	$13,925,461	$0	$3,785,471	$424,694
71	Breweries	21	$1,088,779	$71,924	$355,736	$0	$105,027	$178,785
72	Wineries	5	$1,787,474	$110,725	$237,022	$0	$33,321	$92,976
74	Tobacco product manufacturing	39	$62,517,227	$1,918,158	$42,467,313	$0	$28,155,479	$12,393,675
130	Fertilizer manufacturing	6	$7,572,560	$219,699	$574,655	$36,424	$263,414	$58,118
	Total Ag and Food	**6,242**	**$848,191,397**	**$178,881,847**	**$346,951,022**	**$28,782,783**	**$114,956,574**	**$23,499,233**

Source: IMPLAN (2010), County Business Patterns (2010), Census of Agriculture (2007), Individual Business Websites

Employment and Sales in the Ag Cluster

Table 1 provides employment, output, employee compensation, and value-added for each of the industries included in the production agriculture and food processing cluster. There are a total of 6,242 jobs and $848 million in output in this cluster with nearly $179 million in employee compensation. These 2010 data are primarily provided by IMPLAN (Impact Planning for Analysis) but augmented by Census of Agriculture and County Business Pattern data. IMPLAN uses a combination of Census of Agriculture data, Bureau of Labor Statistics and Bureau of Economic Analysis data to compile a county-specific database.

The details on the remaining employment and sales associated with the businesses that directly support agriculture are provided in Table 2 (pages 16-17). There were 46 additional IMPLAN sectors that are included in the agriculture cluster. These sectors range from retail, transportation, communications and publishing, civic and professional organizations, spectator sports, wholesale trade, construction of non-residential properties (fencing), etc. In total there are 4,851 jobs associated with including these additional establishments that directly support agriculture. These establishments are estimated to generate approximately $654 million in sales.

Economic Impact of the Ag Cluster

To estimate the value of agriculture in Fayette County we used an input-output (IO) model with 2010 IMPLAN data. The full economic impact of agriculture includes the “multiplier effect” which summarizes the total impact that can be expected from a change in a given economic activity. For example, a new manufacturing facility, or an increase in exports by a local firm, are economic changes which can spur ripple effects or spin-off activities. Multipliers measure the economic impact of these new exports, including the resulting spin-off activities. While there are several types of multipliers, the Type II multiplier is most widely used in IO analysis. A Type II multiplier includes the effect of direct or initial spending, indirect spending or businesses buying and selling to each other as well as including household spending based on the income earned from the direct and indirect effects. Essentially, these latter induced effects represent employees spending on goods and services.

The output multiplier estimates the total change in local sales resulting from a $1 increase in sales outside of the study area. Multiplying the increase in sales of the industry by the output multiplier provides an estimate of the total increase in sales for the study area, including the initial $1. The output multiplier is used to assess the interdependence of sectors in the local economy. Separate multipliers were estimated for each of the agriculture sectors identified in Tables 1 and 2. As a result, the final economic impact from the Ag Cluster is approximately $2.4 billion. This includes the direct effect of $1.5 billion and an addition $900 million in output because of indirect and induced effects.

The employment multiplier measures the total change in employment resulting from an initial change in employment in the Ag Cluster. In Fayette County, there are 11,093 individuals who work directly for the Ag Cluster. However, total employment associated with the Ag Cluster is 16,676 individuals after including indirect and induced effects. In essence, given the total employment in the county, these results suggest **that roughly one out of 9 jobs in Fayette County is directly or indirectly associated with the Ag Cluster.**

The value added multiplier provides an estimate of the additional value added to the product as a result of the Ag Cluster. Value added includes employee compensation, indirect business taxes, proprietary and other property income. Value added is often interpreted as new income paid to workers or profits and dividends. The value added of the Ag Cluster is $759 million. The full economic impact is $1.3 billion, meaning that this is the "value" that is added to products in other industries affected by the Ag Cluster.

Table 3 below provides an overview of the economic impact of the entire Ag Cluster. In summary, there are a total of 16,676 associated with the Ag Cluster. Of the 16,676 workers, 5,583 jobs were created as a result of business (indirect effect) and household (induced effect) spending. In total, there is just over $2 billion in sales associated with Ag Cluster including direct, indirect, and induced effects. Total value added is just over $1 billion.

Finally, it is estimated that a little over $53 million in tax revenue is collected from state income tax and sales tax, as well as approximately $6 to $7 million in occupational license taxes for Fayette County as a result of the Ag Cluster.

Table 2. The Economic Impact of the Ag Cluster

	Total Employment with Multiplier	Total Output with Multiplier	Total Value Added with Multiplier
The Traditional Ag and Food Processing Cluster	9,235	$ 1,228,694,245	$ 567,408,654
Secondary Ag & Equine Businesses	7,441	$ 1,196,661,589	$ 732,940,326
Total Ag Cluster Impact	16,676	$ 2,425,355,835	$ 1,300,348,980

Source: IMPLAN, 2010

Notes about the methodology:

a. The indirect effects capture the degree to which there are transactions between agriculture and other industries. To avoid double counting, the indirect effects were reduced by the direct employment attributable to the agriculture. For example, the results suggested that there would be an additional 145 jobs in real estate as a result of indirect effects from production agriculture. However, there were 70 jobs included in the business directory and these jobs were included as direct agriculture-related employment. Thus, there is the potential for double counting. As a result, we have subtracted the direct employment from the indirect effects and in this example the indirect effects would result in 75 new real estate jobs, not 145 jobs.
b. The estimated employment multipliers for this analysis ranged from 1.2 to 6.45. The largest multipliers were associated with food processing and agricultural inputs which is not unique to this study. There were only two employment multipliers larger than 4 (other animal food manufacturing and fertilizer manufacturing). The output multipliers ranged from 1.3 to 2.15 and

the value added multipliers ranged from 1.18 to 5.29 where only four of the value added multipliers were greater than 3.

c. The input-output methodology relies on national transaction matrices that suggest the ratio at which one industry purchases from another. We hypothesize that while this serves as a good starting point that the agriculture industry, specifically the equine industry in Fayette County, is unique and there is likely a different transaction matrix that if modeled accurately would result in larger indirect effects than what is provided in Table 3. However, without having specific information about the transactions associated with the Ag Cluster in Fayette County, we are limited to these findings.

Industries Impacted by a Loss in Agriculture

With the increasing pressures on land use in a growing county, it is interesting to explore what happens to the overall Fayette County economy when there is a loss in production agriculture. Because of the linkages between agriculture and the other industries, a $1 loss in production agriculture will reverberate throughout the rest of the economy. For example, if we expect production agriculture in Fayette County to decline by 10% ($41 million), there will be an overall additional decrease of $26 million in output.

Table 3. Industries with a loss in sales of at least $100,000 with a 10% reduction in agricultural sales

Industry	Loss in Sales
Production ag (In addition to the initial 10% loss)	$ 1,819,962
Other animal food manufacturing	$ 1,477,156
Real estate establishments	$ 1,294,216
Monetary authorities and depository credit intermediation activities	$ 1,274,043
Wholesale trade businesses	$ 679,273
Petroleum refineries	$ 547,601
Transport by truck	$ 471,714
Fertilizer manufacturing	$ 306,349
Maintenance and repair construction of nonresidential structures	$ 285,642
Other state and local government enterprises	$ 280,481
Nondepository credit intermediation and related activities	$ 206,918
Accounting, tax preparation, bookkeeping, and payroll services	$ 147,864
Legal services	$ 144,950
Warehousing and storage	$ 128,213
Electric power generation, transmission, and distribution	$ 124,686
Securities, commodity contracts, investments, and related activities	$ 122,951
Telecommunications	$ 119,639

Source: IMPLAN, 2010

Tables 4 and 5 provide detail about those industries that would be most affected with a decrease in production agriculture. Table 4 suggests that production agriculture, other animal food manufacturing, real estate, banking, and wholesale trade would be most affected by a loss in agriculture due to indirect effects. In essence if there is a decline in production agriculture then producers would need fewer agricultural products and would not need the same level of real estate services, banking, etc. to support their enterprise. There would be an $11 million reduction in sales from business spending in addition to the direct loss of $41 million in agriculture sales.

Table 4. Loss in sales from a reduction in household spending with a 10% reduction in agriculture

Industry	Loss in Sales
Imputed rental activity for owner-occupied dwellings	$ 1,973,200
Offices of physicians, dentists, and other health practitioners	$ 998,809
Food services and drinking places	$ 857,621
Private hospitals	$ 802,851
Monetary authorities and depository credit intermediation activities	$ 713,959
Real estate establishments	$ 696,371
Wholesale trade businesses	$ 595,016
Nondepository credit intermediation and related activities	$ 447,724
Telecommunications	$ 421,160
Insurance carriers	$ 376,272
Other state and local government enterprises	$ 321,830
Securities, commodity contracts, investments, and related activities	$ 321,364
Retail stores - motor vehicle and parts	$ 279,391
Retail stores - general merchandise	$ 264,651
Legal services	$ 264,157
Medical and diagnostic labs and outpatient and other ambulatory care services	$ 261,633
Nursing and residential care facilities	$ 253,305
Retail stores - food and beverage	$ 242,495
Civic, social, professional, and similar organizations	$ 235,131
Petroleum refineries	$ 184,449
Retail stores - clothing and clothing accessories	$ 145,435
Private junior colleges, colleges, universities, and professional schools	$ 144,543
Retail stores - health and personal care	$ 138,546
Insurance agencies, brokerages, and related activities	$ 137,784
Grantmaking, giving, and social advocacy organizations	$ 137,748
Retail nonstores - direct and electronic sales	$ 136,342
Data processing, hosting, ISP, web search portals and related services	$ 132,656
Transport by truck	$ 126,116
Accounting, tax preparation, bookkeeping, and payroll services	$ 117,949
Retail stores - miscellaneous	$ 115,223
Soft drink and ice manufacturing	$ 113,924
Retail stores - building material and garden supply	$ 111,471
Services to buildings and dwellings	$ 107,577
Personal care services	$ 106,627
Automotive repair and maintenance, except car washes	$ 104,965

Table 5 suggests that the induced effects, a reduction in household spending, associated with the ripple effects of a decrease in production agriculture would most affect rental activity, visits to the doctor and hospital, going to restaurants, banking, and real estate. Thus if workers have less money in their pocket to spend, Table 5 reflects those sectors that will be affected the most (industries affected by more than $100,000). The total reduction in sales from a decrease in household spending would be just over $15 million.

The Hospitality Sector

The equine industry draws visitors from around the state, country, and world. In a 2007 study of the economic impact of the Kentucky Horse Park, Dr. Coomes found that there were 473,000 unique visitors to the Horse Park, where just under half of the visitors lived outside of Kentucky.[5] Thus, those individuals would need hotels and would also purchase food and other "things to do" during their visit. The full economic impact of the tourism aspects of the equine industry is outside the scope of this project. However, not including any aspects of tourism underestimates the true value of the Ag Cluster. By incorporating some basic assumptions we can estimate a conservative impact of the tourism sector due to the equine industry. We will assume that somewhere between 25 to 50% of all hotel visits are for the purpose of visiting the Kentucky Horse Park or going to Keeneland for either the races or sales. In addition, we will assume that 5% of restaurant sales are associated with outside visitors eating and drinking at Lexington food establishments. There are a total of 1,561 jobs in the accommodations sector and 16,335 in food services and drinking. The results suggest that there are approximately 1,519 jobs associated with a proportion of the hospitality sector (25% lodging and 5% restaurants) in Lexington. This is expected to be the minimum impact. The economic impact of these tourist activities would only include dollars spent by individuals visiting from outside the county, hence the small percentage of restaurant sales included in the analysis. If in fact 50% of the hotel visits are related to the Ag Cluster, then there would be an additional 390 jobs associated with the tourism sector. Again, it is important to note that this is not a comprehensive study evaluating the full tourism impacts of the Ag Cluster. Instead this is a rough estimate of the impact of individuals purchasing accommodations and food at restaurants. A comprehensive study would entail site interviews with visitors at the various tourist venues and gathering data on travel costs and spending behavior.

Table 5. Hospitality Sector Employment Impact

	Direct Employment	**Total Employment**
Accommodations (25% of total jobs in county)	390 Jobs	606 Jobs
Food and Drinking Places (5% of total jobs in county)	816 Jobs	913 Jobs
Total Hospitality Jobs	1,206 Jobs	1,519 Jobs

Conclusion

This report provides an overview of the economic impact of a newly-defined Ag Cluster in Fayette County. By broadening the definition of the cluster to include businesses that strictly support the Ag Cluster, we can now capture a more accurate value of agriculture in the County. While in the past employment estimates for agriculture have been very low, by incorporating production agriculture along with food processing in addition to the businesses that have located in this county to support primarily

[5] http://monitor.louisville.edu/hospitality/horse%20park%20report.pdf

the livestock market (both cattle and horses), these employment numbers are substantially larger than previously documented. The results suggest that nearly one in nine workers in Fayette County is either directly or indirectly associated with the Ag Cluster. These are likely conservative numbers, as the analysis does not fully account for businesses that partially support agriculture. In addition, these numbers do not include the full tourism impacts of the two large ag-related destinations: the Kentucky Horse Park and Keeneland. Undoubtedly there are many important clusters in Fayette County, including healthcare, public education and research, management and professional services, to name a few. These results suggest that agriculture is also an important component to this diverse, growing economy.

Table 6. Industry Detail for Businesses that DIRECTLY Support Agriculture

Implan Sector	Industry	% Ag	Direct Employment	Output	Labor Income	Value Added
39	Maintenance of nonresidential structures	3.4%	56	$6,730,838	$3,101,899	$3,589,131
100	Wood container and pallet manufacturing	5.3%	5	$568,962	$85,127	$189,772
148	Plastic bottle manufacturing	4.1%	2	$781,076	$133,908	$256,509
319	Wholesale trade businesses	9.3%	578	$93,737,708	$45,843,064	$74,846,588
320	Retail - motor vehicle and parts	1.8%	40	$4,013,968	$2,266,557	$2,464,074
323	Retail - building material & garden supply	9.4%	146	$11,557,790	$5,842,137	$8,126,679
324	Retail - food and beverage	0.7%	21	$1,040,129	$555,908	$777,544
327	Retail - clothing and clothing accessories	0.3%	7	$333,550	$123,582	$176,605
328	Retail - sporting goods, hobby, book & music	3.7%	40	$1,823,035	$833,768	$1,215,507
330	Retail - miscellaneous	2.1%	37	$1,938,790	$987,023	$1,359,272
335	Transport by truck	4.3%	80	$9,881,941	$4,915,585	$5,705,525
336	Transit & ground passenger transportation	20.6%	50	$1,941,306	$1,048,277	$1,551,989
338	Scenic and sightseeing transportation	20.7%	60	$5,132,059	$2,490,092	$2,873,290
340	Warehousing and storage	9.3%	170	$14,973,910	$7,955,069	$9,975,291
341	Newspaper publishers	30.4%	118	$14,160,887	$6,906,470	$8,323,533
342	Periodical publishers	5.9%	7	$1,826,852	$500,091	$680,270
344	Directory, mailing list, and other publishers	8.5%	4	$1,023,190	$100,290	$336,977
348	Radio and television broadcasting	0.9%	5	$836,958	$258,649	$280,973
352	Data processing and related services	0.2%	4	$803,408	$211,665	$625,389
355	Nondepository credit intermediation	0.4%	9	$1,180,087	$619,211	$257
356	Securities, commodity & investments	0.2%	4	$562,129	$97,361	$104,121
358	Insurance agencies & brokerages	3.3%	61	$8,248,486	$4,493,868	$5,268,319
360	Real estate establishments	1.0%	70	$5,843,972	$1,127,132	$5,249,982
368	Accounting, tax preparation & bookkeeping	5.9%	124	$13,189,974	$8,571,471	$10,882,782
369	Architectural, engineering & related services	0.1%	2	$238,398	$151,763	$153,868
370	Specialized design services	7.9%	5	$561,710	$254,694	$480,071
374	Management, scientific & consulting services	0.8%	6	$626,624	$409,234	$426,884
376	Scientific research & development services	1.5%	6	$900,104	$493,671	$493,924
377	Advertising and related services	0.7%	8	$775,294	$383,672	$601,625
378	Photographic services	2.1%	3	$232,916	$78,447	$187,841
379	Veterinary services	45.5%	405	$34,290,473	$25,297,747	$25,350,787
382	Employment services	0.2%	13	$396,021	$305,760	$327,035
383	Travel arrangement & reservation services	2.2%	7	$700,256	$231,095	$395,554
388	Services to buildings & dwellings	0.0%	1	$58,632	$25,386	$32,209
389	Other support services	2.7%	6	$464,370	$165,321	$279,409

390	Waste management & remediation services	3.3%	5	$893,327	$292,394	$536,532
392	Colleges, universities & professional schools	0.5%	13	$904,268	$349,551	$147
393	Other private educational services	20.1%	178	$8,222,753	$4,406,458	$4,312,309
396	Medical and diagnostic labs	3.8%	68	$7,737,054	$3,185,829	$3,998,221
398	Nursing and residential care facilities	0.3%	6	$369,172	$229,666	$261,261
403	Spectator sports[6]	57.1%	361	$251,800,000	$112,806,400	$108,651,700
404	Promoters of performing arts and sports	0.3%	3	$116,593	$33,871	$41,929
406	Museums, historical sites, zoos & parks[7]	100.0%	79	$4,636,059	$1,289,313	$2,511,606
409	Amusement parks & gambling industries	2.2%	16	$666,250	$340,984	$411,105
410	Other amusement and recreation industries	64.2%	210	$10,976,076	$4,646,163	$7,269,150
420	Death care services	2.0%	3	$211,025	$164,395	$148,474
422	Other personal services	0.5%	3	$332,286	$82,128	$95,892
424	Grantmaking, giving & social advocacy orgs	4.4%	62	$5,626,253	$2,482,173	$2,400,297
425	Civic, social, professional & similar orgs	20.7%	291	$31,639,605	$19,239,654	$19,215,789
438	State and local government – education	4.9%	1,271	$75,349,242	$68,230,364	$75,349,245
439	Federal government/ non-military	5.8%	122	$13,856,302	$12,776,164	$13,856,302
	Total		**4,851**	**$654,712,069**	**$251,832,359**	**$412,649,543**

Source: Source: IMPLAN (2010), County Business Patterns (2010), Census of Agriculture (2007), Business Websites, and Interviews with Business

[6] Employment in IMPLAN sector 403 includes Red Mile and Keeneland. These are seasonal establishments. Information we received directly from the tracks was used to estimate employee compensation and value-added.

[7] The Kentucky Horse Park (KHP) is a government enterprise and therefore would be included in sector 437, which aggregates all individuals who work for the state for non-education purposes. However, for this analysis we used the multipliers from category 406 because this most accurately reflects the production function of the KHP.

II. Interviews with Fayette County Business Leaders

Lori Garkovich

Introduction

Over the summer and fall, 12 informal conversations were held with representatives from diverse types of business firms in Lexington. These conversations provided a way to explore the meanings given to this community by individuals in the following economic sectors:

Design	Health	Financial
Hospitality	Marketing	Advanced Manufacturing
Construction	Food Service	Nonprofit

The following prompts guided these discussions:

> What makes Lexington an attractive location for you to do business? What makes Lexington an attractive location for your employees?
>
> Lexington has a diverse economy (e.g., manufacturing agriculture, professional services, the universities, healthcare). How do you see these different components of Lexington's economy affecting each other? Are any components competing or complementing each other?
>
> In what ways do the horse (e.g., Keeneland, Rolex) and agriculturally-related (e.g., Farmer's Market) activities in Fayette County influence your business? How much of your ongoing business do you attribute to the presence of horse and ag-related businesses?
>
> How would your views on Lexington as a "place to do business" change if the green space declined significantly?
>
> How would you describe Lexington to another business considering moving to this community?
>
> What would it take for you to consider moving your family or your business to another community?
>
> Do you have any other comments on this topic?

These questions encouraged broad-ranging discussions about the relationship between characteristics of Lexington and economic opportunities as well as challenges. Yet remarkably, given the very different sectors of the economy represented, there is a considerable consensus in participants' perspectives on Lexington.

A summarized listing of responses to each prompt appears below, with common themes appearing in italics, followed by supporting examples. Statements that amplify initial responses appear as indented items.

What makes Lexington an attractive location for you to do business? What makes Lexington an attractive location for your employees?

The quality of life in Lexington

The quality of life

> The lifestyle here is perfect – it is a clean, safe, and interesting environment with lots of opportunities.
>
> This is a fantastic place to raise kids. The schools here are competitive. No they are really better than those identified as top high schools in the state of New York where I came from. Honestly I would never have expected this when I moved here.
>
> I personally moved here in the 1990s and yes I have had opportunities to move elsewhere. What kept me here? Well of course family but also the quality of life.
>
> What are some other aspects of the quality of life here? The aesthetics of the stock of historic buildings.

The downtown is becoming more vibrant every day

> But for our customers, the diverse attractions that are available in Lexington make this a great location for the hospitality business. Lexington is primarily a leisure destination and the sports associated with UK, Keeneland, the horse shows and other events lead to a lot of weekend visitors.
>
> Thursday Night Live and the new restaurants and bars downtown, as well as the art galleries are very attractive for our visitors. Leisure travelers are looking for these types of opportunities and over the last 10 years these have grown tremendously.
>
> Lexington has an active arts scene.
>
> For me, the quality of life includes the arts and restaurants -- really you can have most anything you want here that you could find in a bigger city.

But the city is very easy to sell once someone comes here. Why do I say the city is a strong positive for our recruitment?

> Clean, safe, schools are extremely strong, adequate cultural base, good sports environment.

The university and its ability to attract international talent creates a pool of creative people

This is a college town with all the cultural and intellectual activities that come with being a college town.

There is an attractive tension between Lexington as a small city and Lexington as a big town -- it has the feel of both and much of this is due to the presence of the universities.

Traffic is so easy here compared to bigger places

Short commutes
Easy traffic

Cost of living is great

Real estate prices are reasonable.
Cost of living is low.

The balance in what we are makes this an especially attractive community for the under 35 professionals -- the dining, entertainment, the arts, education that we have here balanced by the incredible opportunities that come with all our green space

We are a footloose business. As someone once said, our primary assets go up and down the elevator every day. Our staff succeeds because they feel really good about living and working in Lexington. Some have been offered positions elsewhere but they choose to stay. More than my generation, the younger workforce want to be able to balance family and work and that is what they call quality of life.

We feel that we can draw creative talent from anywhere to Lexington and the northern part of this community. The truth is we can be here in Lexington and work for anybody anywhere and in our business, the bigger firms do a lot of subcontracting.

The truth is these talented people who work for this company are here not because of the job (they are talented enough to find work anywhere) but because of the quality of life in Lexington.

For employees, they get more bang for their buck – amenities, urban core with night life, shopping choices.

The quality of life here -- let me give you an example. We just hired two people who were born and raised in Kentucky and then went to work for big New York City firms, but we were able to attract them to our firm because of the quality of life in Lexington.

When I first begin to recruit professionals [in my field], people were reluctant to even consider "Lexington, KY." A lot of [these] professionals come with stereotypes of hillbilly Kentukcy and they don't realize all we have to offer. The quality of life here has surprised me as such a strong plus for my ability to recruit.

> Many international people work at our business and they are always surprised at how easy life is in Lexington as opposed to large cities or even small cities in other countries.

Lexington's landscape - the visual and environmental surroundings

Our landscape, especially the green belt, makes this a unique and attractive community

> The landscape is fundamental to what we do. If the landscape and the horse farms disappeared, we would have no brand. Whether it is a convention or families, one of our largest draws is our stunning and pristine landscape.

> I also know that visitors love to come here because of the landscape.

> Without our landscape, we have no hook to differentiate ourselves from other small cities in the Midwest or the Southeast.

> Without this greenscape, Lexington is just another wanna be big city that couldn't cut it. The charm and attraction of Lexington is the agricultural landscape that provides such a visually interesting lifestyle for us.

> The ring of horse farms and the scenic landscape are really important for our business and our customers because this is what they want. They want tightly located personal experiences that they can walk to or easily reach that will provide diversity for their visit.

The attractiveness of the green space, the farms, so easily accessible to the heart of the city does make a difference for our employees – it is a part of what attracts them and keeps them here.

> Here you can live on a farm and be at work in 15 minutes and have access to a cosmopolitan lifestyle.

I would say about a quarter of our staff bicycle to work or bicycle for recreation in the incredible green space that surrounds Lexington.

> The green space around Lexington -- I can get on my bike at home in downtown Lexington and be in the countryside in 10 minutes.

Part of the charm of Lexington is the countryside. When I really need to finalize a recruitment, I will take the person out along Pisgah Pike and then have lunch at Wallace. Station or dinner in Midway. This will always seal the deal.

> The environment is beautiful and the green space and the horse farms are a big part of this.

> Lexington has good green spaces for a “feel good” feeling.

The opportunities in Lexington's economy

We are a Midwestern institution and our parent firm is expanding into this area. Our parent firm sees the Lexington market as more of an agrarian economy. The Lexington economy is somewhat protected, as a result, from the broader economic cycles. Also as a regional hub, there are emerging opportunities here.

Lexington is a good environment for us to attract qualified employees for the level of responsibility they have in our business. We hire a lot of university students who are articulate, well-groomed, and friendly. Since nearly all of our staff are local, the quality of life is not a critical issue because we don't recruit a lot of staff from elsewhere.

> As a university town, Lexington attracts many young people for their education and some of them decide to stay after graduation. But Lexington also attracts young professionals because of its opportunities.

The size of this community is very attractive. It is a big enough market for us to have a client base but not so big that you can’t establish an identity that is recognizable.

> Because Lexington is a smaller community it is possible to become involved in a significant way, to be able to make a difference and make an impact quickly.

I got started in this business by helping to put on events and thought this could become a business opportunity. I attended a [meeting] in another place and heard people offer many different narratives about that place and thought this was also true of Lexington. I wanted to help people in Lexington change the perceptions of Lexington and develop a new narrative of this place.

> I and my business partners feel that Lexington is on the cusp of something -- not necessarily sure of what -- but we knew we wanted to part of helping that change to occur.

The amount of business travelers is somewhat small for a city of our size and this is because we have very few major corporate headquarters to attract those business travelers. So our business depends on being able to attract those leisure travelers.

This is where I am from and where I grew up.

Locational characteristics

Geographic location – Cincy, Nashville, Louisville – we do business in this whole region.

You have the proximity to Louisville and Cincinnati.

And our location allows us to find opportunities within two hours of Lexington and this has been a great help to our business.

Limitations

The airport here is pretty good, but you pay a premium on ticket prices compared to Louisville.

One negative is not enough public transport systems.

Lexington has a diverse economy (e.g., manufacturing agriculture, professional services, the universities, health care). How do you see these different components of Lexington's economy affecting each other? Are any component competing or complementing each other?

Lexington is a regional economy providing a mix of economic sectors and opportunities

Lexington doesn't seem to realize that it IS a regional player and not just any middle-sized city in the Midwest. The reality is our health, legal and financial services are all regional but we are retaining a small town charm in the face of an 850,000-person service base.

Our regional service area is a basis for future growth.

We are fortunate with a great mix of businesses anchored by the universities, health care and a growing set of smaller high tech companies.

However, we do seem to be becoming the health center for Kentucky!

There are significant business opportunities here. The university has a lot of people who want to start a business and they have the technical abilities to do so but need help with the marketing.

The different sectors of the local economy work together very well through organizations such as Commerce Lexington and the state chamber.

I do not see any conflicts among the different sectors of the economy.

Lexington has a balanced economy. Lexington does not seem unduly affected by the global economy.

> This is a healthy economy as a whole.
>
> The diversity of Lexington's economy does allow us to adapt to the ups and downs in different parts of the economy – we can pursue different opportunities. If agriculture or the Thoroughbred industry slows down, you can almost always find another sector that is growing.

The agricultural sector is a key component of the Lexington economy

The ag sector is as pervasive as these other sectors, but many people in Lexington don't realize this. When you go past one of the thoroughbred farms, if you start thinking about the layers of businesses that are needed to keep those farms functioning, you begin to realize how extensive their impact is on the local economy.

When Toyota moved to central Kentucky, that was great, but it was important because of all the ancillary businesses that came here because of Toyota. The horse farms are like Toyota, there are a lot of other businesses here because of the horse farms. It is these different layers of related businesses that make the horse farms and the cattle farms and all the others so important to our economy.

The agricultural sector, especially the horse farms, are a big factor that attracts our customers. The scenic vistas based on the horse farms and the other farms represent a big attraction factor for visitors. If we lost the horse farms and the green space, our business would definitely take a hit. This is what makes us unique and sets us apart from other communities our size.

The ag sector plays a huge role in the quality of life in this community. The dining and hotel choices that we have here, the entertainment are pulled in by the presence of the Thoroughbred industry. These amenities would go away without the horse industry because they are a big component of the clients of these amenities.

Our economic rebirth is going to be tied to the ag sector. For example, many of the businesses that are here are here because of the Thoroughbred farms and Keeneland.

Manufacturing and agriculture are not at odds in terms of land use.

In what ways do the horse (e.g., Keeneland, Rolex) and agriculturally-related (e.g., Farmer's Market) activities in Fayette County influence your business? How much of your ongoing business do you attribute to the presence of horse and ag-related businesses?

Indirect impact on ability to attract and retain employees or attract visitors

When we talk to visitors, what is interesting is that it is not just about the horse, it is the horse in the context of the landscape that is so attractive to visitors. Without the landscape that the diversity of farms provides, our business would be much more difficult.

These don't necessarily affect our business directly, but they are factors in our ability to attract and retain talented employees.

The quality of life here, including the beauty of the green space, makes recruitment and retention of quality employees so much easier.

These activities do not directly influence my business but do enhance the area for international customers and clients who visit with us and they never fail to be impressed….especially Keeneland and the Horse Park.

Our firm is smaller so we have tended to recruit from the region. But I know that bigger firms are better able to recruit professionals in our area from much larger cities due to the access to the fabulous rural landscapes we have because of the horse farms.

We are talking about expanding our recruiting to attract professionals nationally or even internationally in order to broaden the experiences we have in the firm. These are going to be much more "urbane" and we are not yet sure if professionals like this will be willing to come here.

I believe that the agricultural sector and the green space are critical to the success and growth of my firm

The local food system in Lexington

The growing local food movement is very exciting for us because it is something that is attractive to visitors. When people travel, they like to do two things -- shop and eat -- and increasingly, what they are looking for are locally sourced foods.

Our Farmer's Market showcases the community and its diversity of people and activities. Visitors are very interested in hands-on experiences and they often want to visit the Farmers Market because this allows them to connect to the people of the community.

And so many restaurants are showcasing local foods and this is resonating with travelers. The opportunity to eat local ranks as one of the top desires of travelers and they are requesting more and more information about local foods.

Besides the horse farms and the scenic vistas, the Farmer's Market is of interest to our visitors because it is within walking distance and is part of the national trend where people want to experience local foods and meet the producers of that food. The new location of the Farmer's Market concentrates this opportunity for visitors, but we need to expand this area and make it even more vital.

Lexington agricultural sector is a focus of some of our business

We do some work with horse farms and other types of ag producers as well as with urban ag organizations (e.g., Seed Leaf).

[A thoroughbred related firm] has been a client of ours for over 20 years and we do a lot of business with other firms in the thoroughbred industry. I would say that we would have to phase out eight to 10 positions in our firm if the thoroughbred industry was gone from Lexington.

The ag sector creates opportunities because of the wealth of the horse industry. But the only way to break into this market, to grow, is by taking customers from others in the same business as we are. This is because many in the horse industry are already attached to [firms in our sector].

Agriculture is important for Lexington, but not for our sector

We would like to do business with the horse farms, but the challenge we have faced is getting in the door because the existing networks are so strong. New businesses like us have a hard time breaking in.

Let's face it, agriculture is big in the Lexington area. But from the perspective of our parent firm, the equine industry as a non-protected ag business. In other words, horse farms can't get protection for their investments like crop farmers who can get crop insurance. So horse farms are bad risks for lending. Really, horse farms are for the wealthy who can afford to take the big risks.

We would love to do more business with the horse farms but we can't offset the unprotected risks.

Our clientele are not typically among the horse farms in part because they prefer a more traditional design.

Other impacts

Truthfully, the green space may have a negative effect on our business because there are not as many opportunities for development land. But that does not mean just grow without any limits.

How would your views on Lexington as a "place to do business" change if the green space declined significantly?

Lexington would lose its appeal as a place to do business and a place to live

We have to figure out what we value as a community. I feel our quality of life is closely tied to the agricultural sector and our open land.

Our green landscape makes doing business here more special and unique.

Access to green space is an important part of the quality of life here.

We would lose our heritage and our quality of life.

Our business would change immensely. The number one request for things to do is horse farm tours and this trumps all other opportunities for visitors.

It would make a difference because if the green space decline this means we're not developing our urban spaces as densely as we can and this is a component of our business.

Most of Lexington's weaknesses arose with the expansion of the urban services area which can destroy the character of a community. Even though we would have many more opportunities to make money if that urban services area expanded, it still would not be a good thing for us ultimately to lose that community character.

Reduction of green space would have a huge impact on all businesses in Lexington. The surrounding horse farms play a huge part in attracting people to the Bluegrass and adding to the quality of life. Young families considering a move to Kentucky are far more inclined to come with the beauty of the countryside within minutes of the suburbs. It is a wonderful balance.

Recruitment and retention of employees would become more difficult

Without our green space, Lexington is NOT special and being SPECIAL is very important in the competitive world of recruiting health professionals.

It would not affect our business directly. But it would challenge us in recruiting and retention of quality employees.

There are certain types of employees who are here because of the kind of community this is. When people come here, it is clear that Lexington has made an effort to preserve its green space. This is not true in many other places and so this becomes a factor when we recruit new employees.

It would be ok trying to recruit a health professional to Lexington, but it would be more difficult.

My views would definitely change. We have to attract creative people to Lexington and that would be more difficult if sprawl occurred.

Lexington would lose its distinctive identity - its brand

For us in the hospitality business, it would make it difficult to continue being successful because we would have lost the thing that sets us apart. We would become just another mid-size southern city along with many others trying to attract visitors.

Really without Keeneland and the horse farms, Lexington would just be an also-ran community.

If the horse farms disappear our identity changes and this would make it more difficult for us to stand out. We would be put into a much more competitive market for attracting visitors without anything that would set us apart.

Our brand is so distinctive and so identifiable everywhere I go.

We just attracted a new staff member from Austin and he said that Lexington is just like Austin was 10 years ago before it got ruined by growth.

The ag sector and its green space is our soul. We can't kill our soul. No matter where you are in Lexington you are only 5-10 minutes away from a world class green space. This is what makes us unique -- it is our drawing card. We would lose our soul and our brand if our ag sector declined or we lost our green space.

The reality is that without agriculture and our green space, Lexington is just another Midwestern town. I don't know if you ever heard this but Gary Palmer once said that Lexington is the most beautiful place I fly into.

How would you describe Lexington to another business considering moving to this community?

Lexington is a great place to live, raise a family and find economic success because….

If you are starting a business you are not only investing in the business but also a place to live and Lexington is a great place to live and invest in. The amenities of a larger city are all here. And, you can live a very good life on much less money here than most other places.

The quality of life is significant in the decision-making in people's calculus.

This is a good place to raise a family. For example, you still see families come into Graeters at 6 p.m. who walked there from home. Kids in public schools in Lexington do better than those in private school.

Although I was raised here, I have worked in many other cities. But I was glad to return to Lexington when my children were in school because this was a good place for them to grow up.

We moved here from a rural small town near Chicago years ago. This is a great place for kids. But when we moved here, it was like moving back in time -- Lexington was like my Illinois town was only 10 years before.

As a city, Lexington is interesting because it has such approachable elegance. It is a nice city for living and doing things.

The urban aspects of Lexington have been transforming in very positive ways.

The downtown is becoming much more attractive and a more exciting place.

It is a great community of people and the breadth and depth of activities occurring here is amazing.

There is the diversity of restaurants in this community.

There is a burgeoning theater scene, a great music culture, and the gallery hop is a great tradition. Basically, Lexington has a living and vibrant arts scene.

From the mix of corporate headquarters, agri-businesses, farms, green space, as well as the diversity of restaurants, entertainment, theater, Lexington is unusual for a city of its size.

Friendly/good arts scene/ nice restaurants/two universities with diversity/child friendly/parks/sports/good airport/ easy highway access.

The influx of young adult professionals says that what we have is what they want - they want to live in a vibrant downtown and be able to easily experience what surrounds this downtown area.

It is clear that Lexington is consciously trying to become an attractive city for the young professionals (what others call the creative class) who are seeking a place to live and work. These types of young professionals and entrepreneurs, these types of people are typically more active than earlier generations – they want to be able to ride bike to work, or work from home, or be involved.

> Lexington is making great strides in increasing its diversity in the things that attract creative young professionals. Things like outdoor activities, green space, and entertainment are needed to attract these persons and while we aren’t there yet, we are making great strides in this area.

It is a safe city. You can get up in the dark of the early morning and walk to Starbucks and feel safe.

You get a great benefit for your employees – employee efficiency.

There is a sustainable scale of life in Lexington

Lexington is basically a 30 minute city -- you can be anywhere within Lexington within 30 minutes. So it is a very manageable city.

It is also important that you can be an important part of community life in Lexington. The scale makes this manageable.

Lexington is the Biggest Main Street Town you've ever seen and what I mean by this is that everyone wants to locate on Main Street. I mean this in a good way. It's a wonderful Main Street Town with all the big city trappings you could want -- restaurants, the arts, the universities.

> Lexington has the qualities of a small town combined with the best amenities of a big city.

This is a good place to do business. While it is not a rapidly growing economy, we have a sustainable market that generates a good income for many people.

Everybody talks about wanting to grow but they don't really mean it. But this is ok because we have a sustainable number of persons.

The natural beauty of the setting for Lexington

The green space is part of the unique qualities of Lexington.

Traditions are very strong here and they are what have kept the green space that makes Lexington unique.

But the biggest hook is the land -- its beauty - our green belt is pristine and unmatched.

In many ways, Lexington is very European. We have a thriving downtown core and 10 minutes away is the greatest green space in the world.

And, if you like horses this is a great place to be.

Lexington is the horse capital of the world and so we are unique.

This is a great community for bike road riding. The access to well-maintained rural roads is probably the best in the nation. And, you are within an hour of the Red River Gorge and world class waterways, hiking and rock-climbing and so many other opportunities.

Moreover, you can be in the country in 10 minutes from downtown which is a great asset and attraction. I appreciate the rural surroundings even though I don't necessarily use it. But having that rural environment combined with the downtown scene gives you the best of both worlds.

Lexington offers economic opportunities

Lexington is a great place to start a business. The costs of doing business are low; the work force is educated and motivated; and, it is a great place to raise a family. Considering its size, there are lots of leisure activities and a great culture arts scene (in part because of the universities).

What's exciting here is that you can be part of the evolution of Lexington and that is exciting because Lexington is growing -- just look at Jefferson Street and all the entrepreneurial businesses that are appearing all over Lexington.

People are open and excited about doing new things in Lexington.

Because of the size of the community, Commerce Lexington and the Herald-Leader provide good coverage of innovative businesses. Getting attention is easy here.

While there are ups and downs in the Thoroughbred business, it always seems to bounce back.

It is a small town with small town attitudes – but does offer opportunities for entrepreneurs – but it is tough, because there are small cliques that can influence your success.

We are a big small town and that's how we do business – it can be a benefit if you have the right networks or a challenge if you don't.

You are surrounded by great universities and colleges that offer many opportunities

The business resources of the university are very good -- the SBDC is very helpful.

The steady growth of UK has been good for Lexington.

The universities contribute to a younger spirit in this community.

Something else that makes a difference is education, and as a state and a nation we have to do a better job educating our students to be more competitive.

The influx of entrepreneurial talent to the university fosters innovation, and there is venture capital available here.

What would it take for you to consider moving your business or you and your family from Lexington?

I came here because of the challenge and really had no idea about Lexington as a community to live or work. I can say that when I retire I will continue to spend time here.

From a personal perspective, at this point, I would move for the right career opportunity, but it would have to be a very good one.

What would it take for me to leave? It would have to be a job offer that was two or three times more than I am making here with other great benefits in order for me to consider giving up my relationships and other opportunities to make a difference, to be involved here in Lexington.

You couldn't attract me and my business anyplace else. We have 31 people on staff who are under 35. These are highly talented people and they CHOSE this place --Lexington to live and work. Frankly, I am really encouraged by the type of big market talent that is being attracted to Lexington.

Our routines are a comfort zone and your friends make staying here healthy and leaving here difficult. Every day I meet people I know or at least recognize nearly every minute I am outside my office or my home. But when I travel and see places with amenities I would love to participate in that we don't have (e.g. a lake, vibrant ethnic enclaves) I think it would be nice to live there. It really comes down to family and friends.

We have an office elsewhere. But probably there is only one other place I would live – Nashville – the southern hospitality, diversity (in all aspects), and quality of life, many opportunities. But it would be hard to recreate another network.

I have lived and worked in about eight large-sized cities and I eventually choose to return to Lexington because of its liveability and the networks I had to grow my business.

Lexington is an 8.5 on a 10 point scale of liveability.

Perspectives on the challenges Lexington faces

Identifying growth strategies that retain unique characteristics of Lexington

I think there is huge potential for infill in Lexington for future growth without destroying the surrounding beauty. Other cities manage growth with dedicated industrial areas. Satellite towns and cities thrive all around Lexington and maybe that should be the growth areas for Lexington.

Frankly it would probably positively affect our business because after all, we are in construction. But that doesn't mean we should just develop everything if it comes at the cost of what makes Lexington the liveable place that it is.

The problem is the emphasis on infill is placing pressure on an aging infrastructure and this will cause problems in the future.

Smart growth is very attractive, because it does create different types of opportunities.

With smart growth it is tougher; you need to be more creative in redevelopment of existing urban spaces. And, this needs more leadership at the top – with a farm or open space it is easy to have a large enough parcel to develop. But with urban land, you have to be able to assemble a big enough parcel or be really creative in how you redesign that area so that it is useable but also profitable for someone to redevelop.

With urban land, you already have infrastructure. But our problem in Lexington is that this infrastructure has to be upgraded because it is old and deteriorating and standards have changed. So, in my business, even the presence of existing infrastructure does not offset the costs of having to put new infrastructure onto open land.

What we need are more tools and incentives and better regulations to capture the value of redevelopment on urban land. This needs incentives -- not just money – but also bold moves like declaring areas as blighted (because they are) and then redeveloping them. But this is socially and politically a challenge.

Need to ensure agriculture and green space remain

We need a position in the mayor's office that is devoted to developing in creative ways the economic growth opportunities associated with the agricultural sector.

We need someone who gets up every day looking for innovative and creative ways to build on our greatest asset -- our agricultural sector.

Need one dedicated and passionate person focused on agricultural land-based development. We need a leadership role in this area if we are going to fully utilize our greatest opportunities.

Creating more visitor opportunities at horse farms

One of the biggest changes in tourism these days is that people don't want to just visit a museum or see an historic presentation. Now they want to be able to DO things, they want to have a personal experience. This is called experiential travel.

The problem is we have a disconnect. In Lexington getting access to the horse farms is difficult. I understand that balancing farm security and protecting the landscape with access for visitors is a challenge. But we must address it. As a nation, we take great pride in our national parks and they are a great example of how to permit access to millions of visitors while preserving our most sensitive and precious landscapes. It's kind of ironic that it is nearly impossible for a visitor to ride a horse in Fayette County. But farmers have mixed feelings about opening to visitors and I understand this.
The ag sector -- especially the horse farms -- need to promote their interests. In the long term, opening up the farms to visitors so they can see and experience what the horse farms are and mean is critical to building a concern for their survival among most people who live in Lexington. The reality is, for most of us in Lexington, the only contact we have with the horse industry is at Keeneland and that is not enough to create a passion for preserving the horse farms.

We need to have a mission statement as a community to move forward

To this point, we have worked hard to discover and build on what makes us special but we are still groping our way toward an answer.

In truth, it is hard to think of many cons. I guess one thing is that Lexington is still feeling its way to what's next and it has not yet figured out what that next is. When I first came here, IBM dominated Lexington and now while ag is important, it does not dominate the economy. There is more balance and I feel that Lexington is headed to a better place but we are not there yet and I don't think we have figured out what "there" is.

I feel that this is one of our biggest issues – we have a problem identifying ourselves to ourselves. From a land use perspective, we haven't decided what is really great about us as a community and then act to ensure that what we value as our identity is protected and built on.

Other comments

We could always use more diversity in our economy to help us be more insulated from downturns.

III. The Impact of Equine Sales and Horse Racing Facilities on Non-Agricultural Industries

Leigh Maynard and Tarrah Dunaway

Policy Questions

Ongoing policy debates motivated an analysis of how the equine and agricultural industries influence the economy of Fayette County, Kentucky. Current policies preserve farmland at public expense, and discourage sprawl by restricting land use. Related debate exists about economic development priorities: Should the county attempt to lure manufacturing firms, or capitalize on its brand as the "Horse Capital of the World?"

We do not expect the equine and agriculture industries themselves to be an important source of employment or payroll tax revenue. We do hypothesize, however, that the presence of the Thoroughbred breeding and racing industry, in particular, imports wealth into the county that directly contributes to business activity in other sectors of the economy. We focus on the following industries: retail trade; hospitality (which includes accommodations and food services); finance (which includes insurance); professional services (which includes scientific and technical services), recreation (which includes arts and entertainment); and real estate. We further hypothesize that the amenities provided by the equine, agricultural, and local food industries encourage business location and retention in the selected industries. These amenities include greenspace, unique scenery, "character," and national reputation. The analysis reported here addresses one aspect of agriculture's role in the Fayette County economy: the impact of quantifiable agricultural business activity on other industries. This study is one component of a larger project addressing additional aspects such as perceptions of business leaders and housing values.

Previous Evidence

Previous studies that quantitatively measure the impact of agriculture on a local economy use different approaches. A common approach is an input-output analysis that uses pre-determined linkages between producing and consuming industries to predict impacts. The most popular tool for doing such studies is IMPLAN, and results are typically presented as multipliers related to employment, income, or output. For example, a sales multiplier of 2.5 implies that for each dollar spent directly on an activity, additional indirect and induced sales of $1.50 occurred because of the activity.

Rephann (2011) used IMPLAN to estimate the 2010 economic impact of the horse industry in Virginia, which was associated with an estimated 16,000 jobs, $65 million in state and local taxes, impact on gross domestic product of $670 million, and total sales impact of $1.2 billion. Stewart et al. (2009) used IMPLAN in an evaluation of Tennessee's agricultural and forestry industries, with an emphasis on labor productivity measurement. Reum (2007) addressed the importance of agriculture to Fayette County using IMPLAN, and found an employment multiplier of 1.5, and an income multiplier of 2.1. Compared to an industry such as manufacturing or a competing land use such as residential development, agriculture has a lower employment multiplier and a higher income multiplier. The analysis was not able to measure impacts on equine-related industries such as veterinary services, spectator sports, and food and lodging.

In the case of Fayette County, we expect that agriculture's main contribution to the economy is not direct employment or payroll taxes. American agriculture long ago transitioned into a land- and capital-intensive industry, not a labor-intensive industry. The same is true for Fayette County's equine-dominated agricultural activities. Where employment is affected, we expect it to be in other industries that serve the producers and consumers of agricultural activities. Fayette County's agricultural activities are also sufficiently unique that the pre-determined linkages underlying an IMPLAN analysis are unlikely to be valid at the county level, and modifications by the analyst would be arbitrary and suspect. Therefore, we chose statistical analysis of publicly available data as a more appropriate alternative to IMPLAN, and one that would allow an explicit focus on Fayette County's service industries.

The approach we used is most similar to the methods in Goetz and Rupasingha (2002). They used regression analysis to identify whether county-level clustering of high-tech firms occurs. The goal of a regression analysis is to explain a variable (such as high-tech firm location) using other variables that are expected to have an impact. In this case, the authors used the presence of other high-tech firms to explain firm location, and they controlled for many other socioeconomic factors. Any statistical analysis requires as many observations as possible to increase the reliability of the results, and the authors collected county-level data from sources such as the U.S. Census Bureau, the Bureau of Labor Statistics, and the U.S. Department of Agriculture.

Dorfman, Partridge, and Galloway (2011) used a similar county-level approach to test whether natural amenities influenced where high-tech firms locate, but did not find conclusive evidence, suggesting diverse behavior among firms. A third example of using regression methods to measure determinants of business activity is Lambert, McNamara, and Garrett (2006), who quantified factors affecting Indiana manufacturing investment.

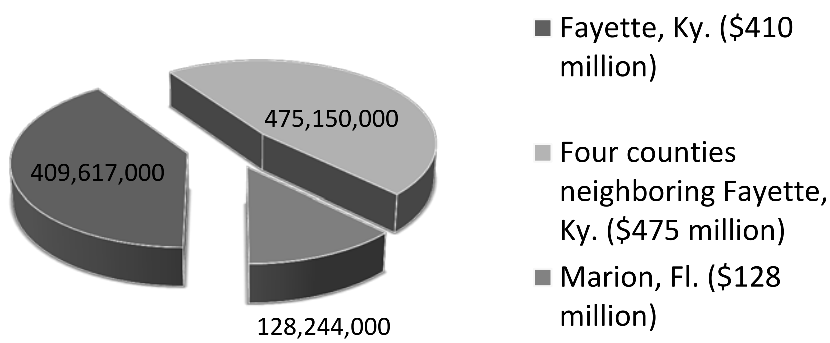
Methods and Data Used in This Analysis

We use quantitative methods in this component of the project. The analysis is a set of statistical regressions using cross-sectional, county-level data for U.S. counties with populations between 100,000 and 500,000. The variables to be explained are the number of establishments, annual payroll, and annual sales in each of the six selected industries (i.e., 18 regressions). The variables used to explain business activity in these six industries fall into two groups. The first and most important group for policy purposes is measures of agricultural business activity. The discussion below explains how those measures were chosen.

Fayette County leads the nation in equine sales. Business establishments located in Fayette County accounted for $410 million of equine sales in 2007 (USDA, 2012). For a perspective on how dominant Fayette County is in equine sales, see Figure 1 and consider that the next highest-ranking counties were

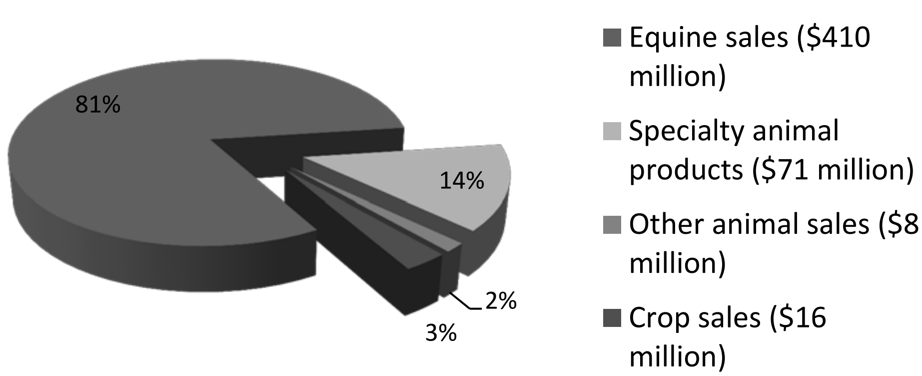
Woodford, Ky. ($213 million), Marion, Fl. ($128 million), Bourbon, Ky. ($121 million), Jessamine, Ky. ($96 million), and Scott, Ky. ($46 million). Except for Marion County, Florida, which leads the nation in equine inventory, the top counties in equine sales are all adjacent to each other in the Bluegrass region of Kentucky. Following these six counties, one must total the next 161 ranked counties to equal Fayette County's equine sales (USDA, 2012).

Figure 1. Fayette County, four of its neighbors, and Marion County, Fl. dominate U.S. equine sales



As Figure 2 shows, the second major component of Fayette County's agricultural sales is designated in the 2007 Ag Census as "Specialty Animal Totals." In the questionnaire sent to agricultural establishments (USDA, 2009: Appendix B-41), this category consists of "other animals and other animal products, including bees, embryos, fur-bearing animals, honey, horns, manure, rabbits, semen, other animal specialties, etc." Given that Woodford County, Ky. leads the nation in this category with sales of $107 million, Fayette County follows at $71 million, and the next highest-ranked county has sales of only $14 million, we expect this component of Fayette County's agricultural economy consists almost entirely of equine breeding services.

Figure 2. Sales of horses and breeding services account for 95% of Fayette County ag sales



The combination of an urban center and 498 business establishments with equine inventory create a high-priced land market in Fayette County. In 2007, the average value of agriculture land in Fayette County was $6,594 per acre (USDA, 2012), putting it in the 93rd percentile of U.S. counties and third in Kentucky after Jefferson and Woodford Counties. Even within the Bluegrass region that has easy access to Lexington's markets, there are counties with vastly lower land values, including Scott County ($3,850 per acre), Clark County ($3,349 per acre) and Garrard County ($2,622 per acre). Non-equine agricultural establishments have strong profit incentives to locate in lower-cost areas, explaining why cattle, tobacco, corn, soybean, vegetable, horticultural, and all other sales combined are only 5% of Fayette County's agricultural business activity.

Given the dominance of the equine industry in Fayette County's agricultural business activity, and the association of the equine industry with racing at Keeneland and The Red Mile, we selected annual equine sales and the presence of a horse racetrack as the variables expected to impact business activity in other industries. Only 7% of U.S. counties in the 100,000 – 500,000 population range contain a horse racetrack.

Non-equine agricultural measures were not included, except as a control variable, because $24 million of annual sales were not considered substantial enough to impact other Fayette County industries with annual sales ranging from $164 million (recreation) to $4.8 billion (retail). Fayette County contains considerable greenspace not being used for equine business, and Lexington's character is influenced by thriving local food markets. This analysis is one component of a broader project, and the benefits of greenspace and local food markets are best evaluated in those other components.

The second group of variables used to explain business activity in non-agricultural industries are simply control variables. By including them, we avoid confounding their impacts with those of the agricultural variables we are truly interested in. These control variables are as follows: population, unemployment rate, median household income, median housing value, real estate tax rate, crime rate, commuting time, various types of land use, the number of agricultural establishments, manufacturing industry sales, and a natural amenity index constructed by McGranahan (1999).

Table 1 lists U.S. average and Fayette County values for each of the control variables. Relative to the U.S. average for counties in the 100,000 – 500,000 population range, Fayette County has a slightly higher average household income, but a substantially larger portion of its population living below the poverty level. Consistent with a high poverty rate is a relatively high crime rate. The total area of Fayette County is only 28% of the U.S. average, but Fayette County has 40% more population than the average county in the 100,000 – 500,000 population range. Property taxes are lower than average, and despite the relatively high population, commuting times are shorter than average.

Table 1. Factors controlled for in the analysis, U.S. average[a] vs. Fayette County, Kentucky

	U.S. Average	Fayette County
Unemployment rate	8.47%	7.20%
Percent below poverty level	14.72%	20.40%
Housing value	$ 181,086	$ 161,900
Commuting time (minutes)	23.59	19.50
Population	211,417	295,803
Natural amenity index	3.67	2.00
Crimes reported	226	1,724
Household income	$ 64,753	$ 68,846
Real estate tax rate	1.04%	0.86%
Agricultural establishments	1,012	810
Manufacturing sales	$ 4,011,525,000	$ 3,040,740,000
Water acres per capita	0.06	0.00
Urban acres per capita	0.24	0.22

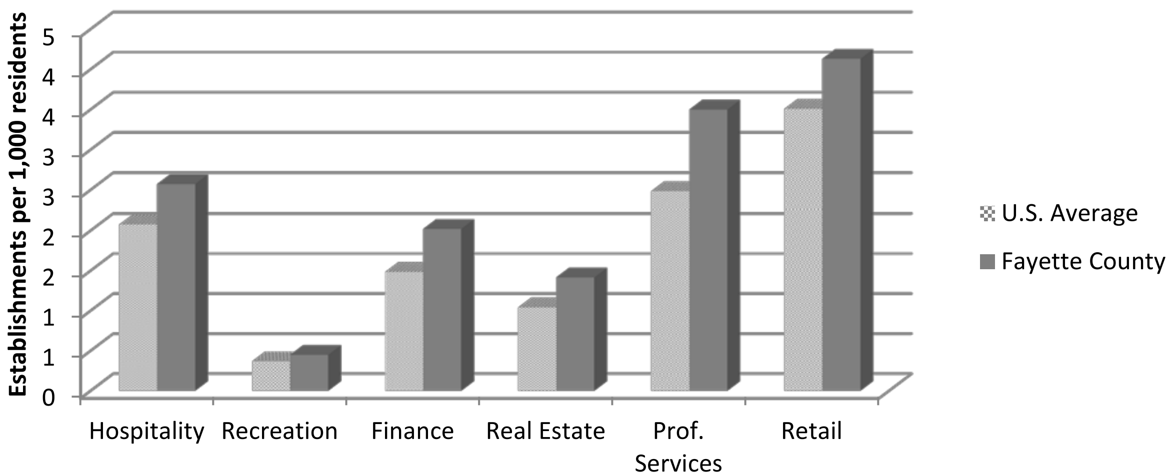
[a] U.S. average of counties with population between 100,000 and 500,000

Data sources include the 2010 American Community Survey, the 2007 Survey of Business Owners, and 2010 and 2006 County Business Patterns data from the U.S. Census Bureau, the 2007 Census of Agriculture from USDA, the Bureau of Labor Statistics, and NOAA. We use 2010 sources for the variables we are trying to explain, and earlier sources for the variables used to explain business activity. This increases the likelihood that we are measuring causality, not just correlation.

Results

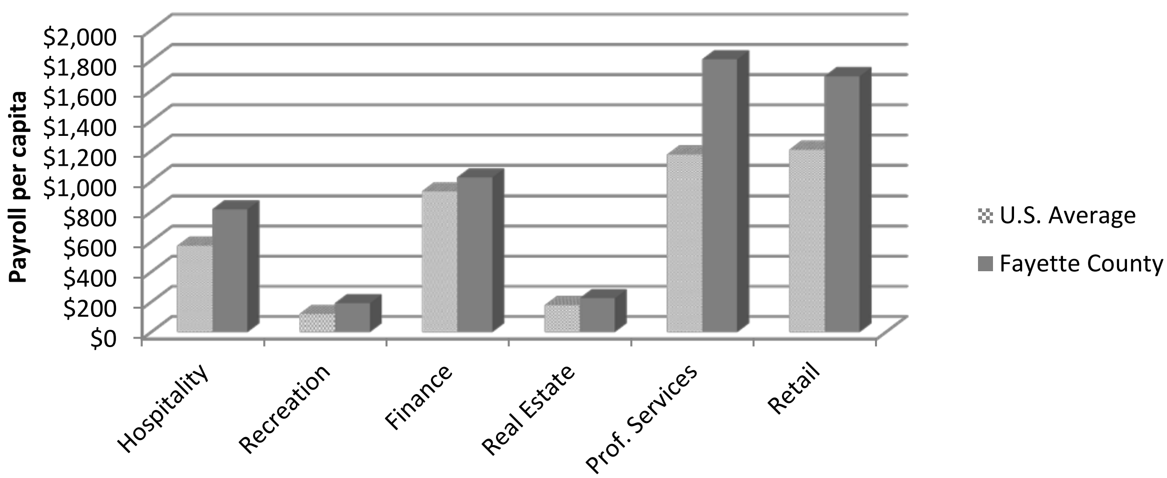
We evaluate six non-agricultural industries that were expected to benefit most from Fayette County's agricultural economy. Within each industry, we evaluate three measures of business activity: number of establishments, annual payroll, and annual sales. Figures 3 - 5 show Fayette County outperforming the national average in per capita business activity for each of the six industries, with the exception of financial sales. Fayette County is especially strong in the professional services industry, with the retail and hospitality industries also well above the national average for similar-sized counties.

Figure 3. Business establishments per 1,000 residents in six industries, U.S. average[a] vs. Fayette County, Kentucky



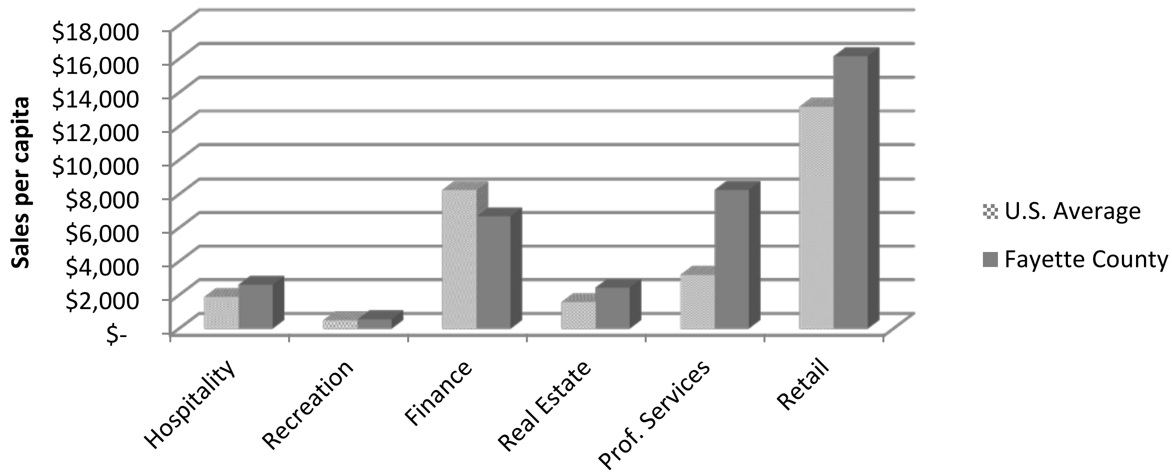
[a] U.S. average of counties with population between 100,000 and 500,000

Figure 4. Annual payroll per capita in six industries, U.S. average[a] vs. Fayette County, Kentucky



[a] U.S. average of counties with population between 100,000 and 500,000

Figure 5. Annual sales per capita in six industries, U.S. average[a] vs. Fayette County, Kentucky



[a] U.S. average of counties with population between 100,000 and 500,000

In each case, we are most interested in whether the two measures of agricultural activity help explain business activity in a given industry. The two measures of agricultural activity are:

(1) equine sales in the county,
(2) the presence of a horse racetrack in the county.

By controlling for several additional factors in the regressions (the factors shown in Table 1), we get more valid results about the impact of agricultural activity.

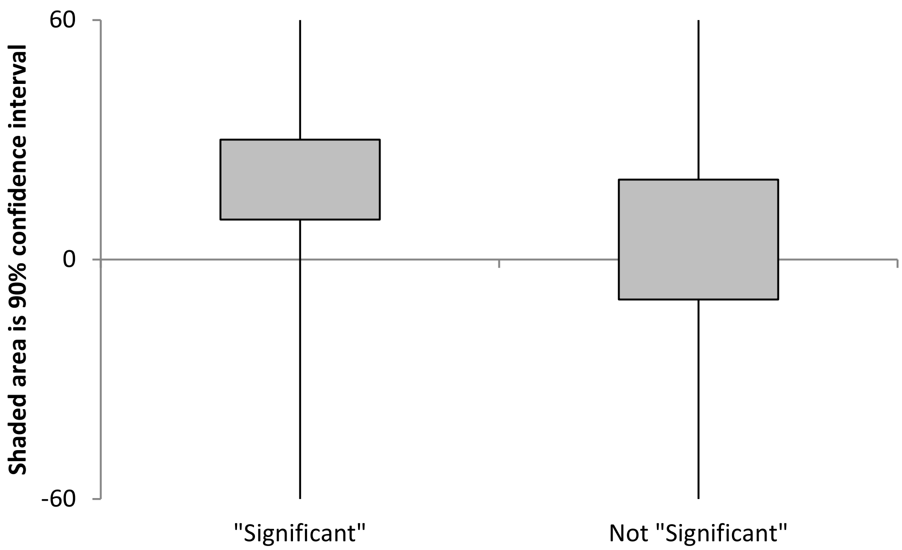
When viewing the results, three issues are important. First, is the impact of an agricultural measure positive or negative? If it is positive, then increasing the agricultural measure should lead to higher business activity in the industry being evaluated. If the impact is negative, increasing the agricultural measure should lead to lower business activity in the non-agricultural industry.

Second, what is the magnitude of the impact on Fayette County? In this evaluation, we quantify the impacts from a 10% increase in equine sales, and we compare the impacts of having at least one racetrack in a county versus having no racetracks. The impacts are expressed in terms of percentage changes, dollar amounts, and number of business establishments.

Third, how sure are we that the impact is really different from zero? We are using data from over 400 counties to disentangle the impact of many factors on business activity in a given industry. Statistics are useful when we do not have enough information to discover the absolute truth. The regression results tell us two things: (1) the expected impact of each factor on non-agricultural business activity, holding all the other factors constant, and (2) the interval within which we are 90% confident the truth lies.

Figure 6 shows an illustration of which results we consider conclusive enough to report. The shaded area shows the 90% confidence interval, and the impacts we discuss are the midpoints of those shaded intervals. When there is both a strong and clear relationship between a factor and business activity in a given industry, the 90% confidence interval will cover a relatively tight range that does not include zero. In this study, we only report the impacts that are "statistically significant," when we are at least 90% confident they are different from zero. If a factor's impact cannot be distinguished from zero, it might be because the impact is small. However, it might be because the impact is large but highly variable across counties.

Figure 6. Illustration: Impacts that are statistically significant have a 90% confidence interval that does not overlap with zero



Tables 2 – 3 show the impacts that could be distinguished from zero, beginning with the impact of equine sales in Table 2. Equine sales have strong links to the professional services and real estate industries. A 10% increase in equine sales in Fayette County would be about $40 million, which is associated with about $26 million in additional sales of professional services each year, $14 million of additional retail sales, and $5 million of additional real estate sales. In terms of employment, 10% more equine sales is associated with about $6 million of additional annual payroll in the professional services industry, and seven additional professional services establishments. The number of establishments would also grow slightly in the recreational, financial, and real estate industries.

Is a 10% change in equine sales reasonable to expect? In the volatile world of equine markets, many year-to-year changes in sales exceed 10%. Also, note that the results presented here refer to impacts strictly within Fayette County. Additional impacts would spread beyond the county's boundaries.

Table 2. Impact of equine sales on other industries

A 10% increase in equine sales leads to …
0.5 more recreational establishments
1 more financial establishment
1 more real estate establishment
7 more professional services establishments
a 1% increase ($5.6 million) in professional services payroll
a 1% increase ($26.3 million) in professional services sales
a 1% increase ($5.2 million) in real estate sales
a 0.3% increase ($13.6 million) in retail sales

The presence of a horse racetrack in a county has an especially strong impact on business activity in other industries, as Table 3 shows. A racetrack and the activities connected with it lead to the creation of an estimated 15 establishments in the recreation industry, which includes arts and entertainment. Impacts on the annual payroll in the hospitality, recreation, and retail industries total $88 million, with retail trade leading the way. Given that racetrack activities would be a sizeable portion of most counties' recreational sales, it is not surprising that a track leads to a 45% increase in recreation industry sales. In Fayette County, this translates into $74 million per year of additional sales.

Table 3. Impact of a horse racetrack on other industries

The presence of a racetrack in a county leads to …
15 more recreation industry establishments
a 10% increase ($25.2 million) in hospitality payroll
a 42% increase ($23.8 million) in recreation industry payroll
an 8% increase ($38.5 million) in retail payroll
a 45% increase ($74.4 million) in recreation industry sales

In some cases, policymakers must choose between efforts that promote agriculture versus manufacturing. To clarify the tradeoffs involved, we repeated the analysis to measure the impact of a 10% increase in manufacturing sales on the six selected industries, with the results shown in Table 4.

Although Fayette County's manufacturing industry is smaller than the U.S. average among similar-sized counties (annual sales of $3 billion versus $4 billion), it is a major contributor to the county's economy, exceeded only by retail trade. A 10% increase in manufacturing sales is thus many times larger than a 10% increase in equine sales. The estimated impact on the six other industries was a net addition of two establishments in the financial industry, $2 million of additional payroll in the retail and recreational industries, and $23 million of additional retail sales. Overall, the manufacturing impacts on the six selected industries were modest; perhaps manufacturing linkages to other industries are stronger. A test of impacts on one good candidate, the construction industry, suggested a 1.3% ($5 million) increase in construction payroll and a 0.8% ($20 million) increase in sales, which is still modest given the $300 million magnitude of a 10% increase in manufacturing sales.

Table 4. Compared to agriculture, manufacturing has weaker linkages to other industries

A 10% increase in manufacturing sales leads to …
3 more financial establishments
1 fewer real estate establishments
an 8% increase ($0.5 million) in recreation industry payroll
a 2% increase ($1.2 million) in retail payroll
a 5% increase ($23.3 million) in retail sales

Conclusions and Policy Recommendations

This analysis estimated the impact of agricultural business activity on the number of establishments, the annual payroll, and the annual sales of six non-agricultural industries. The industries selected were those expected to have the strongest linkages to Fayette County's equine-dominated agricultural industry: hospitality, recreation, finance, real estate, professional services, and retail trade. After collecting data from over 400 counties nationwide with populations between 100,000 and 500,000, we see that Fayette County does indeed produce more per capita business activity in these six industries than the national average.

Equine sales and the presence of a horse racetrack in a county have large impacts on business activity specifically within that county, not even considering spillover effects on other locations. As examples, a 10% increase in Fayette County's equine sales is linked to $45 million of additional annual sales in professional services, real estate, and retail trade, and the presence of a racetrack is linked to $88 million of additional annual payroll in the hospitality, recreation, and retail industries.

The policy relevance of this study is its evidence that the agricultural industries do not operate in isolation, but are an important driver of Fayette County's economy. While many business and community leaders assume this to be true, the analysis provides quantitative estimates that can be used for planning.

The results are statistical estimates obtained from publicly available data, and the analysis controlled for many other potential drivers of business activity. They are conservative in the sense that we only report those results for which we are at least 90% confident that the true impact is different from zero.

This analysis provides quantitative evidence that agricultural business activity significantly affects multiple industries in the local economy. A natural question is how the impacts of agriculture compare to the impacts of other business activities. One often hears calls for policies encouraging manufacturing firms to locate in Fayette County, so we tested the impact of manufacturing sales on the six selected industries. Surprisingly, there were few significant linkages between manufacturing and the six industries, and even the linkage with a seventh industry, construction, was modest.

The results suggest that if one were to enact policies promoting manufacturing, the goal should be limited to direct impacts on manufacturing activity, with few expectations of benefit to other local industries. In the case of policies promoting agriculture, the opposite is true; the expected benefits to other industries are approximately as large as the direct benefits. As an example, note in Table 2 that a $40 million increase in equine sales is associated with approximately the same boost in retail, real estate, and professional services sales. Economic development is not a zero-sum game, but one where both vicious and virtuous cycles are possible. Agriculture may be more prone to virtuous cycles if business inputs are sourced locally, profits are spent locally, and if participation in agriculture (for example, attending a Keeneland auction) entails spending on complementary goods (for example, financial services, legal services, restaurants, and accommodations).

Explaining why the results exist requires judgment on the analysts' part. Reasonable speculation would include at least four factors. The first and most direct factor is that Fayette County's unique agricultural status allows it to import tremendous wealth from outside the region that is then invested and spent within Fayette County in a wide range of industries.

Second, the combination of historical, cultural, and visual amenities that accompany this investment gives Fayette County a distinctive brand that generates a virtuous cycle of business activity. A visit to the Lexington city government and Chamber of Commerce websites illustrates this brand, with about half of the rotating photos on their front pages depicting farms, Keeneland, or agritourism. Forbes.com placed Lexington 37th in its 2011 ranking of best places for business and careers (see http://www.forbes.com/places/ky/lexington/). Major industries are listed as "agribusiness, horses, technology," and the profile links the city's identity to the surrounding farms and its historic racetracks.

Third, Fayette County's character and amenities have a positive influence on workforce recruitment and retention. An example is the September, 2012 decision by law firm Bingham McCutchen LLP to locate 250 new professional positions in Fayette County. Lexington and two other final candidates offered similar incentive packages, but quality of life was reported as a deciding factor (Sloan and Musgrave, 2012). Recognition by the World Monuments Fund of the Inner Bluegrass Region as a renowned cultural and agricultural landscape is evidence of how agriculture contributes to quality of life in Fayette County. The interviews with business leaders described in Part II of this report contain many quotes about the link between Fayette County's agricultural character and workforce recruitment.

Fourth, Fayette County and local businesses have invested in a vibrant, entrepreneurial local food and entertainment industry. The Lexington Farmers Market, under the recently constructed 5/3 Pavilion, was recognized as one of the country's top large farmers markets by the American Farmland Trust (Goins, 2012), and several other successful farmers markets operate in Fayette County. The addition of downtown businesses such as West Sixth Brewing, Shorty's Grocery, FoodChain Urban Farm, Country Boy Brewing, Town Branch Distillery, and several new restaurants and bars in the area near Cheapside Park are all linked by a distinctive local character that blurs the lines of the agricultural, hospitality, and recreation industries.

At a time when many municipalities are actively trying to establish a brand that will promote growth, Fayette County is fortunate to be nationally recognized for its longstanding agricultural character. Agriculture alone does not create Fayette County's unique image; it is the combination of the visual amenities of its farms, the glamour of its equine events, and the deep cultural history evident throughout the area. Bourbon distilling, originally a way to preserve the value of corn in an easily transported form, blends well with Fayette County's agricultural and equine heritage, strengthening the area's appeal to visitors and residents alike. Having a strong character makes Fayette County a fertile place for business creation. This is particularly true for local agricultural and food businesses that rely on consumer perception of place as a component of their value.

Fayette County's brand is analogous to a stock of capital that was acquired over a long period, and now yields returns without diminishing the endowment. Economic growth strategies that work well in one area, given its endowments and historical development, may not be appropriate for another area. Distinctiveness, however, is a key component of any growth strategy. Promoting Fayette County's distinctiveness can be the deciding factor in attracting and retaining both businesses and a vibrant workforce. Similarly, encouraging not just retention but growth of indigenous firms that have already demonstrated that they are a good fit for the area's characteristics may efficiently contribute to economic growth and sustainable employment.

References

Bartik, T.J. (1985). "Business Location Decisions in the United States: Estimates on the Effects of Unionization, Taxes, and Other Characteristics of States." *Journal of Business and Economic Statistics* 3,1: 14-22.

Bureau of Labor Statistics. (2012). "Labor Force Data by County." data accessed 2012 via http://www.bls.gov/lau/laucntycur14.txt .

Dorfman, J.H., M.D. Partridge, and H. Galloway. (2011). "Do Natural Amenities Attract High-Tech Jobs? Evidence from a Smoothed Bayesian Spatial Model." *Spatial Economic Analysis* 6,4: 397-422.

Goetz, S.J. and A. Rupasingha. (2002). "High-Tech Firm Clustering: Implications for Rural Areas." *American Journal of Agricultural Economics* 84: 1229-1236.

Goins, M. (2012). "Lexington Farmers Market Tops Kentucky List, Ranks 8th in Nation." *Lexington Herald-Leader*, September 21, accessed September 21, 2012 at http://www.kentucky.com/2012/09/21/2345662/lexington-farmers-market-tops.html .

Lambert, D.M., K.T. McNamara, and M. Garrett. (2006). "An application of Spatial Poisson Models to Manufacturing Investment Location Analysis." *Journal of Agricultural and Applied Economics* 38(1): 105-121.

McGranahan, D.A. (1999). "Natural Amenities Drive Rural Population Change." Agricultural Economic Report No. 781, Food and Rural Economics Division, Economic Research Service, U.S. Department of Agriculture.

Middleton, T. (2011). "Local Economic Development: Researching Clusters in Woodford County, Kentucky." Graduate capstone paper, Martin School of Public Policy and Administration, University of Kentucky, Lexington, Ky.

NOAA. (2012). "Land Use H Data." National Oceanic and Atmospheric Administration, data accessed various dates via http://coastalgeospatial.noaa.gov/data_table.html .

Rephann, T.J. (2011). "The Economic Impact of the Horse Industry in Virginia: A Study Prepared for the Virginia Horse Industry Board." Center for Economic and Policy Studies, Weldon Cooper Center for Public Service, University of Virginia, Charlottesville, Va.

Reum, A.D. (2006). "The Importance of Agriculture to Fayette County." PowerPoint presentation, Department of Agricultural Economics, University of Kentucky.

Sloan, S. and B. Musgrave. (2012). "Law Firm Operations Center to Bring 250 Jobs to Lexington." Lexington Herald-Leader, September 12, accessed September 12, 2012 at http://www.kentucky.com/2012/09/12/2334086/law-firm-operations-center-to.html .

Stewart, L, D.M. Lambert, M.D. Wilcox, and B.C. English. (2009). "Tennessee Agriculture and Forestry Industry Clusters and Economic Performance, 2001-2006." *Journal of Agricultural and Resource Economics* 34(1): 172-195.

Suggett, R.H.G. (1999). "Horses and the Rural Economy in the United Kingdom." *Equine Veterinary Journal* 28, Supplement: 31-37.

U.S. Census Bureau. (2012). "American Community Survey and Survey of Business Owners." data accessed various dates via American FactFinder, http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t .

USDA. (2009). "2007 Census of Agriculture: United States, Summary and State Data, Volume 1." Geographic Area Series, Part 51, AC-07-A-51. United States Department of Agriculture, National Agricultural Statistics Service. Washington, DC.

USDA. (2012). "2007 Census of Agriculture." United States Department of Agriculture, National Agricultural Statistics Service. data accessed various dates via http://151.121.3.59/ .

Woods, T.A. and J. Mansfield. (2005). "Strategies for Developing Agricultural Opportunities in the Greater Lexington Area: A Special Report Prepared for the Fayette County Farm Bureau and the Fayette County Agribusiness Task Force." Department of Agricultural Economics Extension Numbered Series 2005-11, University of Kentucky, Lexington, Ky.