

The Importance of Agriculture for Fayette County, Kentucky

**Agricultural Economics — Extension No. 2006-16
October 2006**

By:

ALISON DAVIS REUM

University of Kentucky
Department of Agricultural Economics
400 Charles E. Barnhart Bldg.
Lexington, KY 40546-0276

Phone: 859-257-5762

Fax: 859-323-1913

<http://www.uky.edu/Ag/AgEcon/>

The Importance of Agriculture for Fayette County, Kentucky

Alison Davis Reum, Ph.D.
 Department of Agricultural Economics
 The University of Kentucky

Agriculture in Fayette County, Kentucky consists primarily of the equine industry along with tobacco and hay production. As of 2002, the horse industry made up 53% of the agricultural production in the county.¹ The recent tobacco buyout might cause those numbers to change when the next of Census of Agriculture is completed in 2007. Figure 1 provides a summary of farming in Fayette County. In addition, Table 1 provides an overview of the top commodities produced, in terms of market value of sales, in the county.

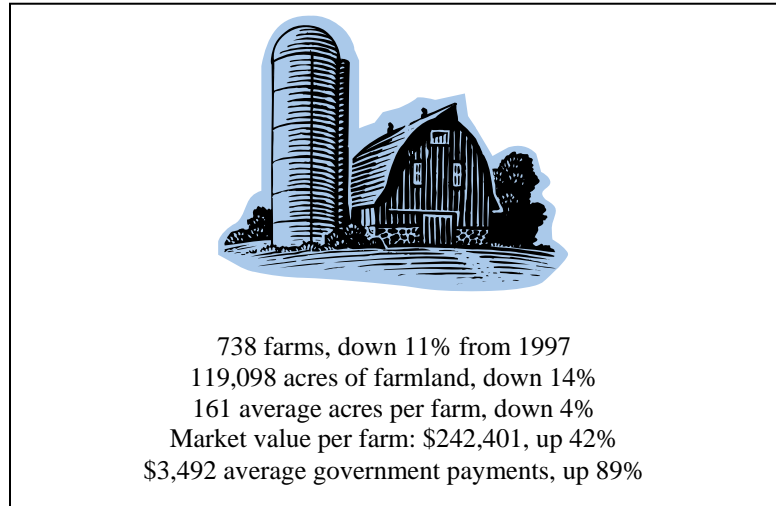


Figure 1 Overview of Fayette County Agriculture

Table 1 The Most Valuable Agricultural Commodities

Commodity	Value of Sales	Ranking in State
Horses, mules, burros	\$156 Million	1
Other livestock	\$7.5 Million	(D)
Tobacco	\$7.9 Million	14
Nursery, Greenhouses	\$4.2 Million	7
Other crops and hay	\$0.8 Million	31

While Fayette County and the surrounding Bluegrass Region are known primarily for the equine industry, the area is also experiencing relatively high growth in non-equine related. Population increased by 15% in the nineties and is expected to increase by about 9% this decade. With the migration of new households into the area, there is a demand for development in the areas surrounding downtown Lexington that continues to push outward toward rural areas. This need for development raises the issue about what areas should be considered as candidates for development. Economic theory suggests that efficiency occurs when land is being used in its most productive, or most valuable, state. Thus it is important to determine the value of agriculture and thus the value of the land. These values should then be compared to the value of development for residential or commercial development.

To determine the value of agriculture in Fayette County we will use an input-output (IO) model with 2003 IMPLAN data. The IO model provides us several key pieces of information. Three different types of multipliers are derived. These multipliers give us an indication of the impact of an industry on employment, output, and income on the local economy. Multipliers measure the total change throughout the economy from a one unit change for a given sector. 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

¹ Census of Agriculture, 2002.

initial spending, indirect spending or businesses buying and selling to each other as well as it includes 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. Table 2 provides an overview of the market value for all agricultural products in Fayette County as well as the entire State of Kentucky. In addition, the three different multipliers are provided at the bottom of the table. The employment multiplier is defined as the number of new jobs created when \$1 million is spent on agricultural production. In this instance a total of 32.46 new jobs are created. This includes 21.55 jobs from direct effects, 6.5 jobs from indirect effects, and 4.41 jobs from induced effects. The income multiplier suggests that when the agricultural sector realizes a \$1 change in income, total income in the study area changes by \$2.14 from direct and indirect linkages.

Table 2 Agricultural Multipliers

Fayette County		Kentucky	
Output	\$458 Million	Output	\$9.9 Billion
Value Added	\$184 Million	Value Added	\$4.5 Billion
Proprietor Income	\$23 Million	Proprietor Income	\$666 Million
Employment	9,890 Workers	Employment	144,302 Workers
Multipliers		Multipliers	
Employment	1.51	Employment	1.51
Income	2.14	Income	1.73
Output	1.83	Output	1.63

Table 3 provides the same types of multipliers but for the horse industry alone. These numbers suggest that for every \$1 million spent for horse production, a total of 27.7 new jobs are created. This includes 22.9 jobs from the direct effects, 3.2 jobs from the indirect effects and 1.6 from the induced effects. The income multiplier suggests that when the horse industry realizes a \$1 change in income, total income in the study area changes by \$2.26 from direct and indirect linkages.

Table 3 Horse Industry Multipliers

Fayette County		Kentucky	
Output	\$245 Million	Output	\$843 Million
Value Added	\$45 Million	Value Added	\$153 Million
Proprietor Income	-\$2.8 Million	Proprietor Income	-\$9.5 Million
Employment	5,637 Workers	Employment	45,105 Workers
Multipliers		Multipliers	
Employment	1.21	Employment	1.16
Income	2.26	Income	2.91
Output	1.39	Output	1.64

It is interesting to compare the multipliers across industries. Table 4 provides this comparison for the employment multiplier. There appear to be greater gains, in terms of a larger employment multiplier, for mining, manufacturing, education, and services than for agriculture. Table 5 reveals the same comparison but for the income multiplier. In this instance, the agriculture multiplier is now the largest.

Table 4 Fayette County Employment Multipliers for Different Industries

Industry	Employment Multiplier
Agriculture	1.51
Mining	1.89
Manufacturing	1.93
Education/Travel	1.55
Services (Accounting, law, etc)	1.88

Table 5 Fayette County Income Multipliers for Different Industries

Industry	Employment Multiplier
Agriculture	1.51
Mining	1.89
Manufacturing	1.93
Education/Travel	1.55
Services (Accounting, law, etc)	1.88

The Current Development Policy

The current proposal is to develop up to 7,000 acres of land in Fayette County. To determine the economic impact of this potential change, several assumptions must be made. First, we will provide an upper limit estimate by assuming that all 7,000 acres are currently used for horse production, the largest agricultural value of the land. It is unlikely that all 7,000 acres are dedicated to the equine industry but without further information about the distribution of the undeveloped land, we can assume nothing further. In addition, given the information from Figure 1, we can determine the total monetary loss from a loss of 7,000 acres. IO analysis suggests that there would be a \$10.7 million loss in output felt directly in the equine industry, but overall there would be a loss of \$14.8 million of output in all industries. In addition, there would be a total loss of \$2.6 million dollars in income and 297 workers. The industries outside of horse production that would be most negatively impacted would be: construction, wholesale trade, truck transportation, food and beverage services, insurance, real estate, veterinary services, and monetary authorities.

It is undeniable that there would be a loss felt from the loss of 7,000 acres of agricultural land. It is expected though that this land would be converted and rezoned for residential and commercial development. Economic efficiency suggests that a proposal should be implemented when the benefits of a policy outweigh the costs. We have determined the costs of the proposal above, in terms of the loss to agriculture industry. The benefits of the proposal depend on the intended use of the land. For example, if all 7,000 acres would be devoted to residential development, then the employment multiplier and income multiplier are 2.00 and 1.91 respectively. The employment multiplier is higher for residential development than horse production but the reverse is true for the income multiplier (see Table 3). In the end, it is difficult to determine exactly the benefits without more specifics about the plans for development. It also appears that there might also require some subjectivity in terms of deciding which decision criteria is more important: gains in employment or income. Finally, it is difficult to value the anticipated loss in culture and tourism monetarily. There are methods that approximate the value of non-market goods and these should be employed as well when determining the efficacy of the proposal.