

## A Spatial Analysis of Farm Payment Recipients Using the FSA 1614 Dataset

Michael Brady and Vince Breneman\*

We report results from preliminary analysis of the recently constructed dataset from the Farm Service Agency, FSA 1614. FSA 1614 provides the location of the farm and the farm payment recipient for all Title I payments. This makes it possible to analyze the spatial dispersion between landowner and farm more precisely than previously possible. A discussion of what research questions could be informed through the use of this data is provided. We find that a significant percentage of payments are sent to individuals that are likely to be absentee landowners, although this value is much smaller when looking at the total value of payments. These national results are compared to four corn belt states.

*Selected Paper prepared for presentation at the American Agricultural Economics Association Annual Meeting, Orlando, FL, July 27-29, 2008.*

---

\* Economic Research Service, U.S. Department of Agriculture, 1800 M Street, NW, Washington DC, 20036. Please do not cite, reproduce, or distribute without permission of the authors. The views expressed are those of the authors and do not necessarily correspond to the views or policies of the Economic Research Service or the U.S. Department of Agriculture.

## **Introduction**

Approximately half of all farmland in the U.S. is leased (ERS, 2003)<sup>1</sup>. This has important implications for how labor, land, and capital are brought together to produce this country's food and fiber. Landlords contribute more than 30% of all farm assets, which are almost exclusively in land and buildings<sup>2</sup>. Many landowners, or landlords, do not live on the farm, which can affect a number of aspects of the production process. For instance, do absentee landlords use cash rent contracts more often than share contracts? Is a large portion of the ethanol tax credit likely to be captured by absentee landowners that do not live in a rural area near the farm?

A recently constructed dataset from the Farm Service Agency, commonly referred to as FSA 1614, provides more detail about the spatial relationship between landowners and farms than previously available. In this paper we discuss how this unique dataset can improve our understanding of how absentee landlords affect the agriculture sector and the rural economy, particularly with respect to policy. While previous data has provided general information about where landowners live relative to the farm, the FSA 1614 data provides very precise information for their location and that of the farm for all recipients of Title I farm payments<sup>3</sup>. In the next section we consider if and when it is important to account for the presence of absentee landlords. This is followed by a discussion of our preliminary analysis of the FSA 1614 data nationally and for a few select states. We

---

<sup>1</sup> The exact percentage varies by region.

<sup>2</sup> Summary results from the Agriculture Economics and Land Ownership Survey, National Agricultural Statistics Service, U.S. Department of Agriculture.

<sup>3</sup> This consists primarily of direct payments.

conclude by summarizing how these results and the FSA 1614 data can be developed in future research.

### **Absentee Landowners in Agriculture**

While information technologies have reduced the importance of physical distance between transacting parties in many instances, it remains a key characteristic of agriculture and always will. Over the course of the 20<sup>th</sup> century the U.S. saw a large portion of the population move from the farm and rural areas to urban centers. Increasingly, the owners of farmland, often retired farmers, no longer lived on the farm. This raises a number of questions about what the effect will be of an increasing distance between farm and landowner.

The health of the rural economy in the U.S., where 20% of the population currently resides (Bureau of the Census, 2008), has been a concern since the population of the country started migrating in large numbers from rural to urban areas as the 20<sup>th</sup> century progressed. Rural economic growth has lagged behind the national trend for some time (Henderson and Akers, 2007). While agriculture is vital to some rural areas it is not for all. Twenty percent of nonmetro counties are classified as dependent on agriculture, and they are concentrated in the western corn belt and plain states (Ghelfi and McGranahan, 2005). This region does not generally supply the natural amenities that drive growth in non-farm employment, which reinforces the reliance on agriculture (McGranahan and Sullivan, 2005).

This raises a question as to whether a significant portion of farm payments made to farms in these areas pass through to absentee landlords that live in other regions.

While helping rural economies is not a goal of farm programs they are likely to be an important element in these agriculturally intensive regions since they constitute a significant percentage of total net farm income and affect land values (Barnard, et al. 1997). The FSA 1614 data cannot answer the pass-through question, but it does inform whether a significant amount of farm payments are received by absentee landlords that reside at a significant distance from the farm. A number of other studies have considered whether farm payments, particularly after the introduction of decoupled or lump-sum payments in 1996, are capitalized into land values where they are captured by landowners as opposed to operators (Morehart, et al. 2001; Barnard, et al. 1997; ERS 2003). We discuss this question in our review of the data.

Another federal policy that can benefit agriculture and rural areas is the promotion of biofuels in energy policy. The 2007 Energy Act has called for a significant increase in the use of ethanol in transportation fuel through the Renewable Fuel Standard. This has led some to ask whether energy will “refuel” the rural economy (Henderson and Akers, 2007). The mixing of ethanol in gasoline is promoted through the use of an exemption of the gasoline tax. Taheripour and Tyner (2007) perform a comparative statistics analysis to consider where along the ethanol supply chain this subsidy is likely to be captured. Their general conclusion is that the bigger the ethanol market becomes and the more corn that is used to produce it the more that the ethanol subsidy will be captured by landlords. Given trends in the last few years this appears to be what is likely to happen. In that case, it will be important to understand more accurately the geographic distribution of landlords.

Another aspect of agriculture that may be affected by the physical distance between landlord and farm is in the design of lease contracts. Cash-rent arrangements have replaced share contracts as the more popular form in many areas in recent years. As discussed in Allen and Lueck (1993), there are important differences in the incentive structure for operators between the two contract choices. For instance, output in a share contract has to be measured and split. This provides an incentive to underreport production, which is made easier if the landlord lives a long way from the farm. This same incentive is not present in cash-rent contracts.

According to the 1999 Agriculture and Economics Land Ownership Survey (AELOS), nonoperator landlords owned 221 of the 434 million acres of cropland in the U.S. (ERS, 2003), and many of these nonoperator landlords live within 50 miles of the farm, and consist largely of retired farmers. As of the time of the survey in 1999 their average age was 63. This introduces an interesting question as to whether landowners are likely to remain as close to the farm in the future. Much of this land is likely to be sold or passed down within families in the next decade to children that did not go into farming and are more likely to live further away. Support for this can be seen by comparing results across the AELOS Surveys in 1988 and 1998. Figure 1 shows the total farm acres owned by non-operator landlords by age range. The 70+ category was by far the largest. While the younger age classes do contain smaller age bounds, the total for the oldest category is larger than the combination of the 55 to 69 age classes. Also, the increase in acreage owned by landlords in the 70+ increased by 40 million acres from 1988 to 1998, which is larger than the total for any of the other 5 year age classes. The total land owned by non-operator landlords was also larger in 1998 than 1988 which is likely due in part to

the retirement or passing on of land from former operators. While it is not possible to say without further analysis, the other category with the largest increase was in the 50 to 54 group. This would be a likely age for children of retired farmers in their 70's and 80's. This could play a role in continuing the trend towards cash-rent contracts.

### **The FSA 1614 Dataset**

FSA 1614 was constructed by order of Congress as a condition in the 2002 Farm Bill in section 1614 of the Farm Security and Rural Investment Act of 2002 to attribute all payments to individuals and not just to corporations or co-ops as was done previously. It contains records for more than 2.3 million entities or individuals with 64 million individual transactions. The data identifies for all agricultural payments the location of the farm, the address where the farm payment was sent, and the amount of the payment. A significant limitation of the data is that we can only identify absentee landlords that are using share contracts. Payments for land farmed under a cash-rent contract are sent to the operator rather than the landlord. Therefore, we are likely to be capturing less than half of all absentee landlords.

We use the data for 2004 that contains 1,381,949 customer accounts with total payments of over \$15 billion. To define the spatial relationship between landlord and farm we create a categorization scheme that is motivated to recognize both the spatial distance between land and landlord and urban versus rural areas. Urban areas are defined according to the Census definition of either an urbanized area or urban cluster. The IR category combines payments sent to the farm and to another rural area within the same county for two reasons. It is not clear that checks sent to a different address in a rural

area in the same county are absentee since many operators own and farm multiple parcels of land. Also, from questions related to the connection between agriculture and the rural economy the benefits of a farm program or changes in agricultural markets will be felt in the immediate rural area.

- **In-County Rural Area (IR):** Payment sent to the same location as the farm or to another rural area in the same county as the farm.
- **Out of County Rural Area (OR):** Payment was sent to a rural area in a different county.
- **In-County Urban Area (IU):** Payment sent to an urban area in the same county as the farm.
- **Out of County Urban Area (OU):** Payment sent to an urban area in another county.

Results for the entire country are shown in Table 1 and Figure 2. A small portion, about a tenth of a percent, are dropped due to missing information. Slightly more than half of all payments<sup>4</sup> are sent to the farm or a rural area in the county of the farm. This includes payments for farms that are owner operated, leased from landlords living in a rural area in the same county under any contract arrangement, or leased using a cash-rent contract from landlords living anywhere. The next largest category is OU at 17.39%. Combined with IU, approximately 27% of payments are sent to an urban area. While we have a high level of confidence that OU is capturing absentee landlords, a portion of IU is likely to contain operators. In terms of the total value of payments, the amount sent to urban areas is 18%, or a decrease of 9%. For reasons mentioned earlier, the OU category

---

<sup>4</sup> This refers to the number of payment checks, not the value of all payments.

does not account for farms owned by absentee landlords using cash contracts. Therefore, this estimate is very conservative.

We also perform a separate analysis by expanding the IR category to include adjacent counties. It is likely that operators own land in neighboring counties, so the IR category may overstate the spatial distance between landowner and farm. Results shown in Table 2 and Figure 3 demonstrate that this is likely the case. The OR category shrinks significantly down to 5%. This conforms with previous results, particularly the AELOS survey, that a large portion of nonoperator landlords live within close proximity of the farm in rural areas. It does not appear that there are a significant portion of absentee landowners living in rural areas that are at a significant distance from the farm, which is expected given data from other surveys.

These aggregate national numbers provide a useful overview, but the nature of agriculture varies significantly across regions. We now turn to looking at a few select agriculturally intensive states provide information more relevant to issues such as biofuels. Figure 4 shows the location where farm payment checks were sent for all farms in Illinois. As expected, a large portion are sent to the farm or another location in Illinois. Payments sent outside the state are concentrated in areas of high population density. It is interesting that the concentration appears to be similar across these urban centers including Southern California, the Bay Area, the Northeast, and the Southeast. Approximately half of all checks were not sent to a rural address in the same county as the farm. More than 30% went to urban areas either in or out of the county. As was reflected in the national statistics, the OR category shrinks significantly when including adjacent counties. Again, landowners in this category tend to live close to the farm. In



terms of total value of payments, 30% are sent to an area other than the rural area in the same county (Figure 5). This is \$441 million out of a total of \$1.2 billion. The OU category shrinks to about 7%, and the amount sent to urban areas in total is just less than 20%. Whether or not this represents a significant percentage really depends on the question. If trends in absentee landlords are similar for cash-rent contracts then a slightly conservative estimate would put the OU category at a little less than 15%. The aging issue discussed earlier is important here since there is a significant amount of land owned by non-operator landowners that is likely to change hands in the next decade. Accounting for absentee landowners is going to be more important for questions that relate to the number of farms as opposed to the total size or size of the payment.

In Nebraska, 20% of payments are sent to out of county urban landowners. By payment volume the total is only around 5%. The OU Category for Ohio is even smaller at 9% of all payments and less than 3% by volume. When adjacent counties are included in the IU category it constitutes over 90% of the total value of all payments. An important step in future research will be to integrate data on the prevalence of cash versus share contracts to inform what portion of all absentee landowners this is capturing. Values for Indiana and Iowa are more similar to Ohio than Illinois.

## **Discussion**

In this paper we report preliminary findings from an analysis of the FSA 1614 Database that provides detailed information on the spatial arrangement of farms and landowners along with a general discussion of whether it is important to account for absentee landowners with respect to a number of questions related to how capital, land,

and labor are brought together. This data improves our ability to more precisely locate where absentee landowners are relative to their farms. A significant drawback to the data is that it is only possible to capture landowners using cropshare contracts. A significant aspect of future research will be to use other data sources on contract choice to evaluate what percentage of all absentee landowners this data captures. Our findings show that nearly 28% of all farm payments are sent to urban areas either in or out of the same county as the farm, and 18% of the total value of payments are sent to urban areas for the country as a whole. Just under 10% of payment recipients live in an urban area in another county. Comparing results across states in the cornbelt show significant variation with Illinois appearing to have more absentee landowners than Ohio, Iowa, or Nebraska. As has been found in previous research, many landowners still reside in rural areas near the farm. These results also show that it is more important to account for absentee landowners when looking at questions related to the number of farms as opposed to the total land owned by absentees. An important question related to the use of the FSA 1614 data, and research on absentee land ownership in general, is how land ownership will change in the next decade given the significant amount of farmland owned by people in their 70's and 80's. Our objective for future research is to move away from the very general spatial categories developed to exploit completely the precise distances in the data to address a range of questions.

## References

- Barnard, C.H., G. Whittaker, D. Westenbarger, and M. Ahearn. 1997. "Evidence of Capitalization of Direct Government Payments into U.S. Cropland Values." *American Journal of Agricultural Economics*, 79(5):1642-1650.
- Economic Research Service, U.S. Department of Agriculture. 2003. *Decoupled Payments: Household Income Transfers in Contemporary U.S. Agriculture*, Agricultural Economic Report 822.
- Economic Research Service, U.S. Department of Agriculture. 2004. *Decoupled Payments in a Changing Policy Setting*, Agricultural Economic Report 838.
- Henderson, J. and M. Akers. "Will Energy Markets Refuel the Rural Economy." *Economic Review*, Federal Reserve Bank of Kansas City, First Quarter, 2007.
- McGranahan, D. and P. Sullivan. 2005. "Farm Programs, Natural Amenities, and Rural Development." *Amber Waves*, February, 2005.
- Taheripour, F. and W. Tyner. 2007. "Ethanol Subsidies, Who Gets the Benefit?" *Working Paper*, Purdue University.
- U.S. Bureau of the Census. 2008 Statistical Abstracts. Available online at URL: <http://www.census.gov/compendia/statab/>.

## Tables and Figures

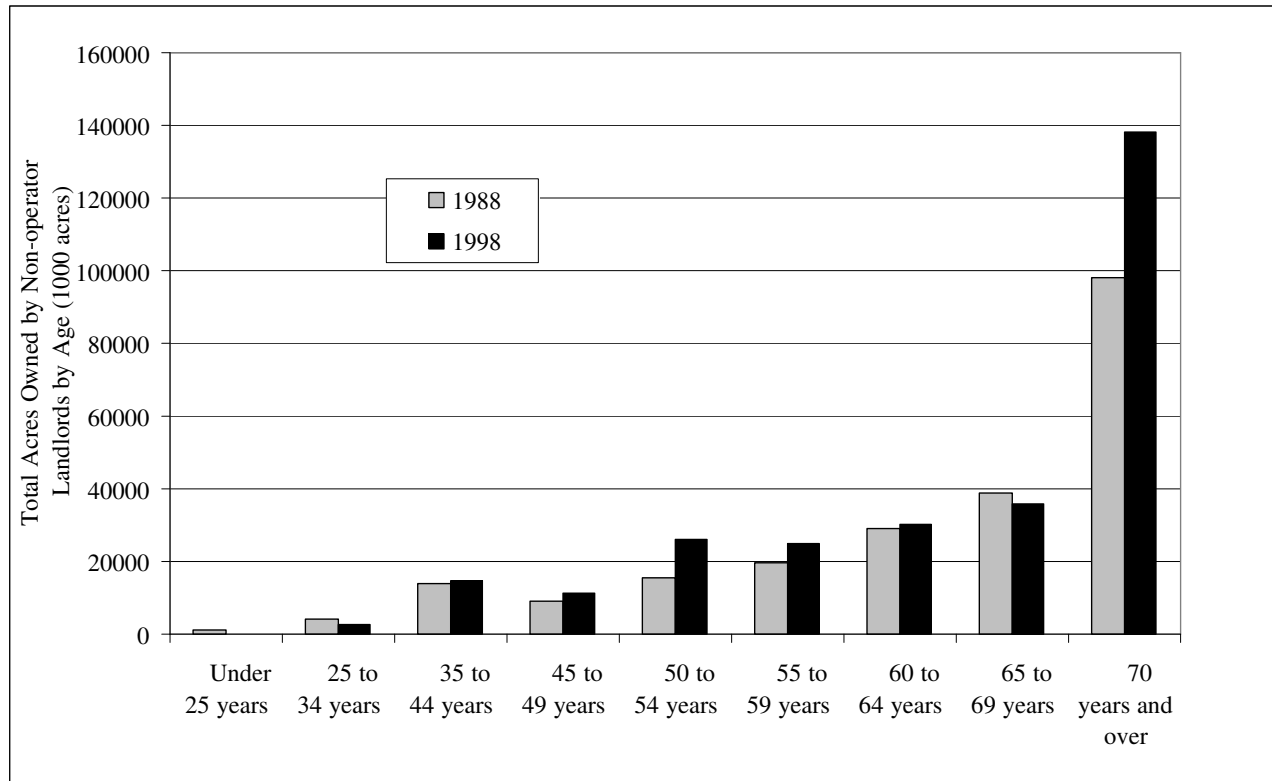


Figure 1. Amount of Farmland Owned by Non-operator Landlords by Age Class (Source: Agriculture Economics and Land Ownership Survey, 1988 and 1998, USDA NASS).

Table 1. Number of Payments and Percentage of Total Payments by Category.

|                  | Unkown | In County Rural Area | In County Urban Area | Out of County Rural Area | Out of County Urban Area |
|------------------|--------|----------------------|----------------------|--------------------------|--------------------------|
| Number of Farms  | 1,969  | 865,740              | 142,173              | 263,623                  | 268,029                  |
| Percent of Total | 0.13   | 56.16                | 9.22                 | 17.10                    | 17.39                    |
| Total Payments   |        |                      |                      |                          |                          |
| (Mil \$)         | 8      | 10,534               | 1,564                | 2,083                    | 1,154                    |
| Percent of Total | 0.06   | 68.65                | 10.19                | 13.58                    | 7.52                     |

Table 2. Number of Payments and Percentage of Total Payments by Category Including Adjacent Counties in IU.

|                  | Unkown | In County Rural Area | In County Urban Area | Out of County Rural Area | Out of County Urban Area |
|------------------|--------|----------------------|----------------------|--------------------------|--------------------------|
| Number of Farms  | 1,969  | 1,050,293            | 142,173              | 79,070                   | 268,029                  |
| Percent of Total | 0.13   | 68.13                | 9.22                 | 5.13                     | 17.39                    |
| Total Payments   |        |                      |                      |                          |                          |
| (Mil \$)         | 8      | 12,321               | 1,564                | 296                      | 1,154                    |
| Percent of Total | 0.06   | 80.29                | 10.19                | 1.93                     | 7.52                     |

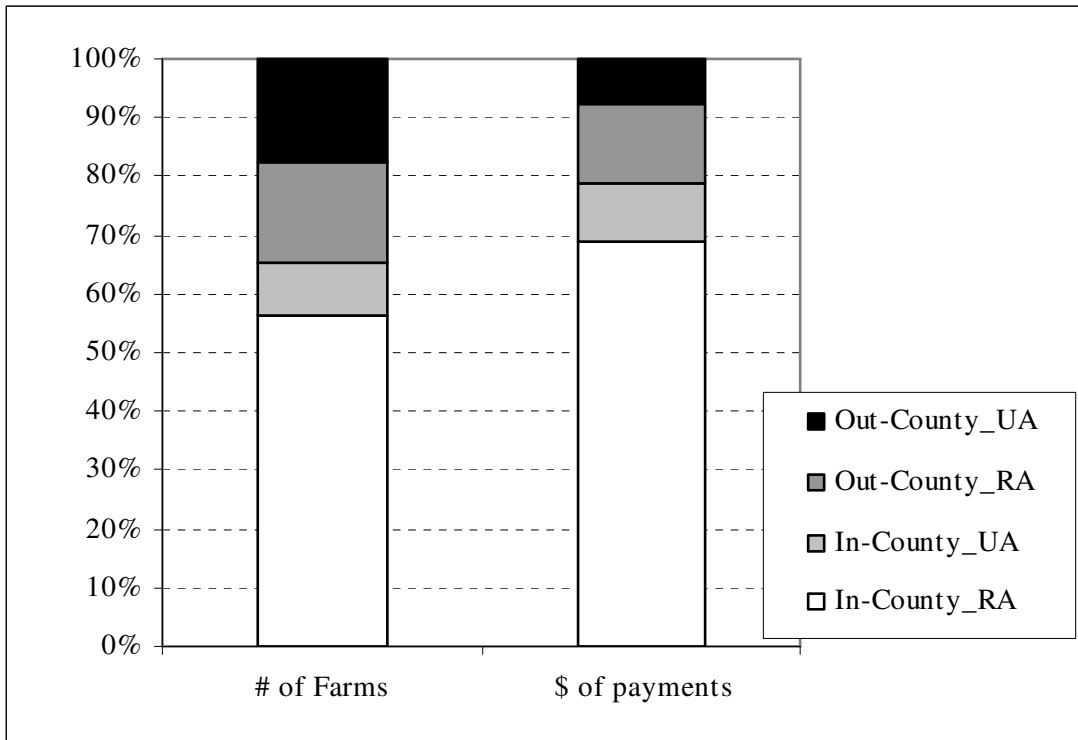


Figure 2. Percentage of Farm Payments and Total Value of Payments for all of the U.S. by Spatial Category.

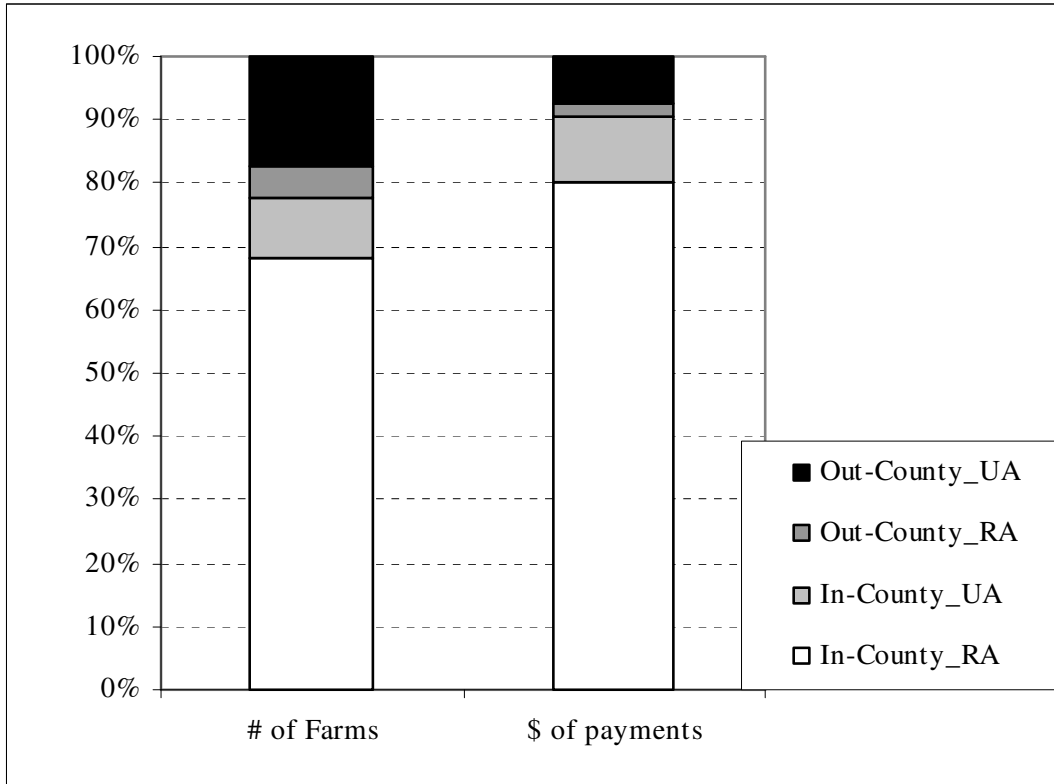


Figure 3. Percentage of Farm Payments and Total Value of Payments by Spatial Category with Adjacent Counties Included in In-County Rural Area.

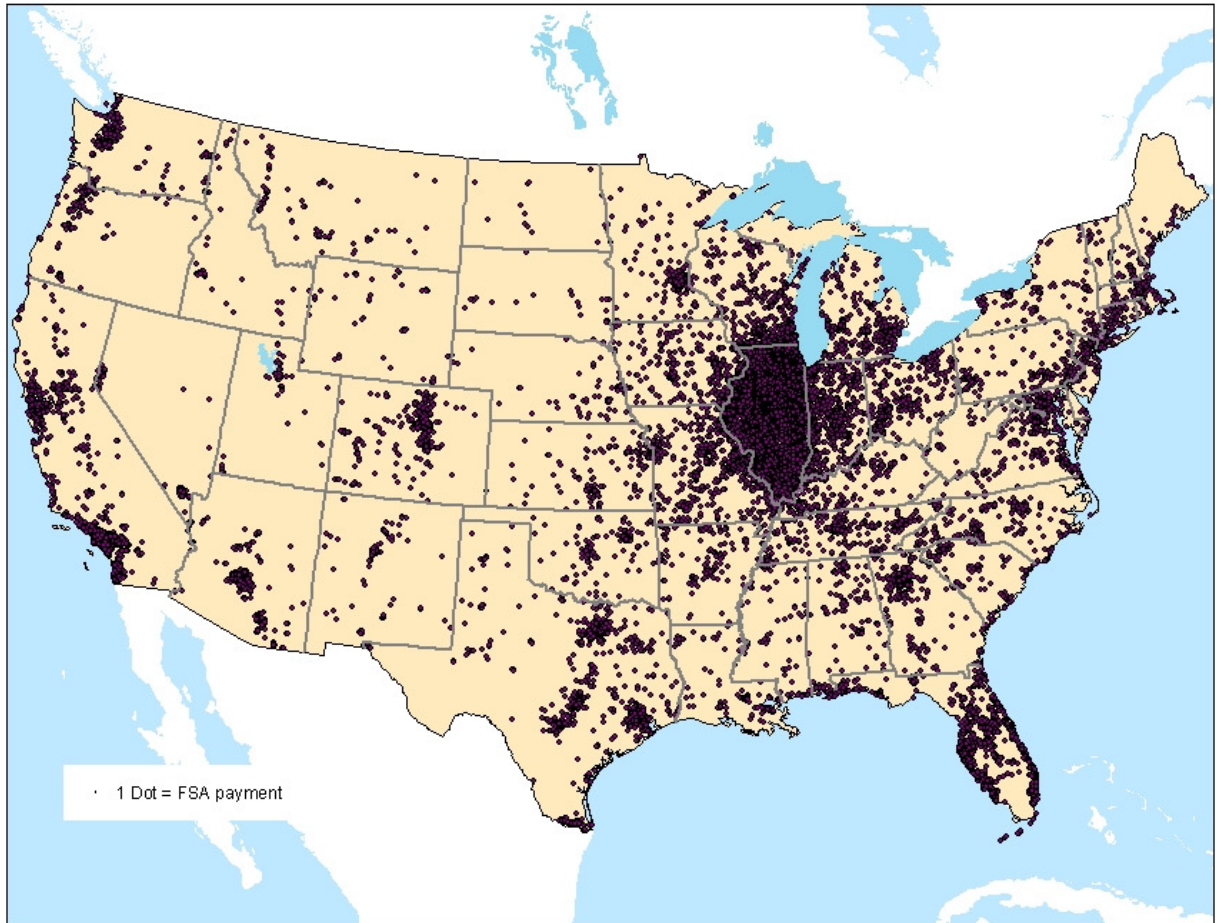


Figure 4. Locations Where Farm Payments were Sent for all Farms in Illinois in 2004.



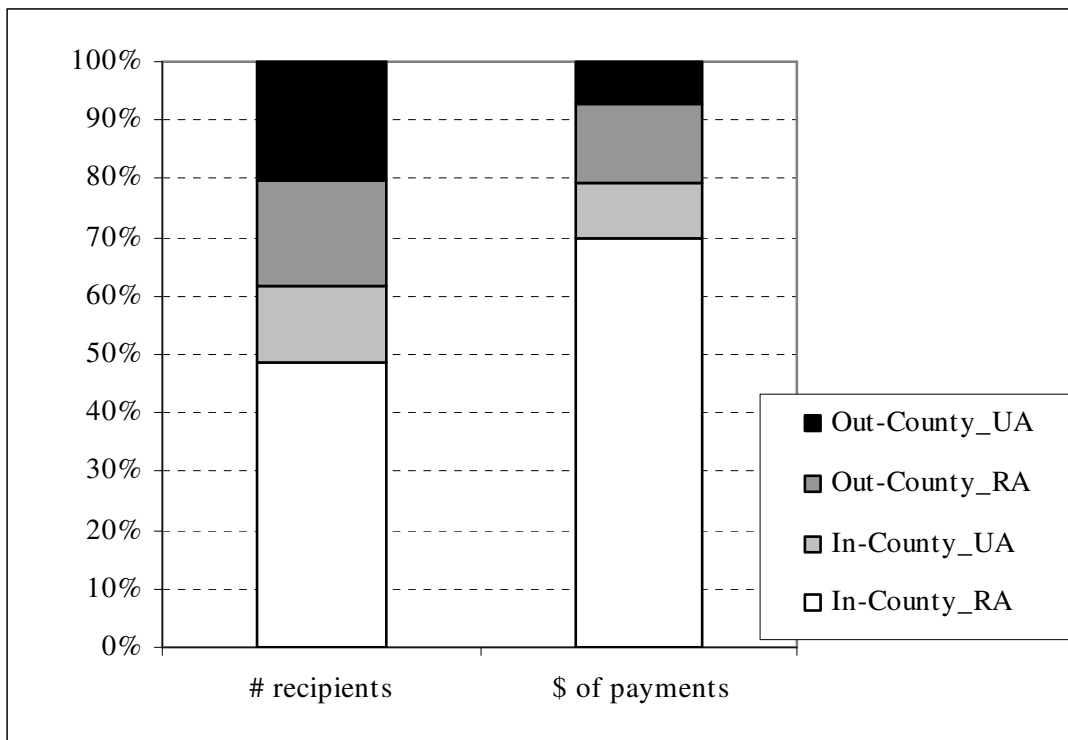


Figure 5. Percentage of Farm Payments and Total Value of Payments by Spatial Category for Illinois.

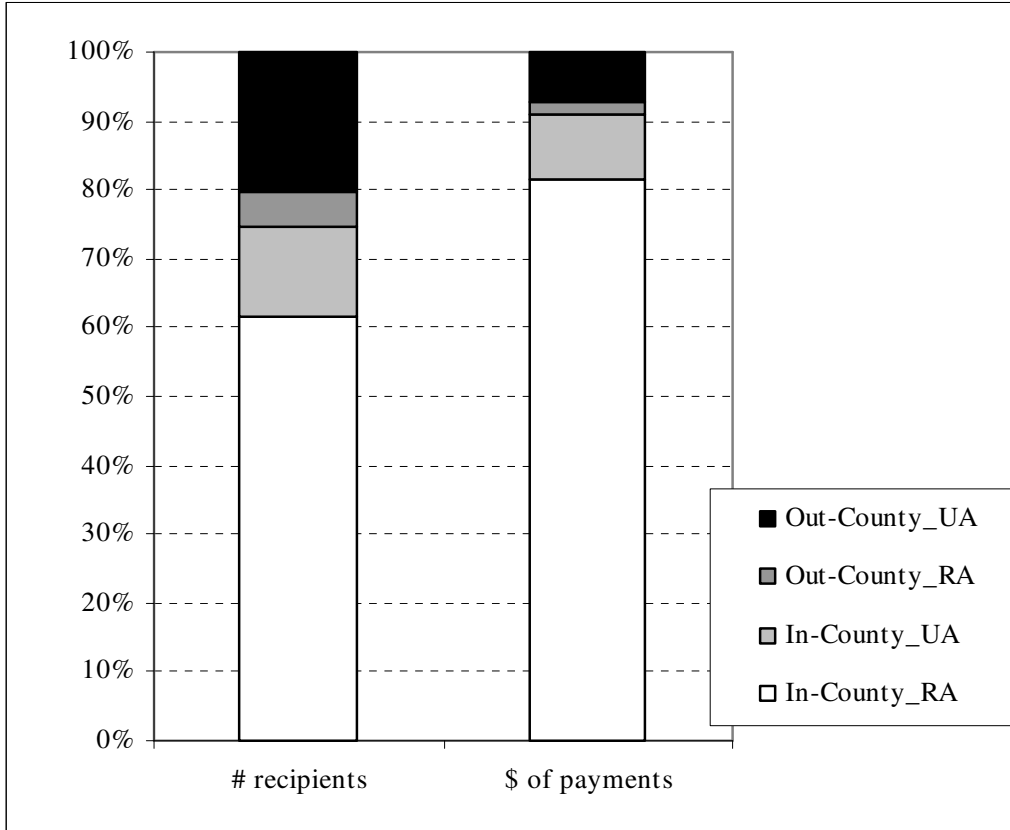


Figure 6. Percentage of Farm Payments and Total Value of Payments by Spatial Category with Adjacent Counties Included in In-County Rural Area for Illinois.