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U.S. Farmland Ownership, Tenure, and Transfer

Daniel Bigelow, Allison Borchers, and Todd Hubbs

United States Department of Agriculture

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Abstract

Farmland tenure shapes many farm decisions, including those related to production, conservation, and succession planning. The relatively advanced age of many farmers raises questions about land ownership, especially how land will be transferred to the next generation of agricultural landowners and operators. This study provides a descriptive baseline analysis of land ownership and then focuses on more detailed aspects of land tenure, including non-operator landlords, rental agreements, the acquisition and transfer of land, and how decisionmaking is shared by landlords and their tenants. The report is designed to support broad discussions related to agricultural land ownership and to provide a starting point for more detailed statistical analysis.

Keywords: land tenure, land ownership, rental agreements, landlords, TOTAL survey, AELOS survey, estate planning, succession planning

Acknowledgments

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U.S. Farmland Ownership, Tenure, and Transfer

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What Is the Issue?

Farmland ownership, tenure, and transfer have important implications for land accessibility, particularly for young and beginning farmers. The advanced age of many farmers raises questions about how land will be transferred to the next generation of agricultural landowners. Despite the significance of these issues, a number of information gaps remain. For example, to what degree are non-operator landlords involved in the farm sector, what barriers exist to accessing land in the rental market, and do operators and non-operators plan to transfer their land (when not through sales) through different channels, such as wills, trusts, or as gifts? In addressing such questions, the study provides information from a 2014 survey that will be useful both for farmers and for policymakers aiming to promote land access.

What Did the Study Find?

Approximately 39 percent of the 911 million acres of farmland in the contiguous 48 States is rented. More than half of cropland is rented, compared with just over 25 percent of pastureland. In general, rental activity is concentrated in grain production areas; cash grains such as rice, corn, soybeans, and wheat, and also cotton, are commonly grown in areas where over 50 percent of farmland is rented.

Smaller family farm operators are more likely to be full owners of land they operate. Forty-five percent of farmland is in small family farms, and nearly half (46 percent) of this land is found in operations that own all the land they operate. Fifty-one percent of land in farms is in midsized and larger family farm operations, which are most commonly a mixture of rented and owned land. Nonfamily farms account for 4 percent of all farmland, 28 percent of which is found in full-owner operations.

The majority of rented acres are owned by non-operator landlords. Eighty percent of rented farmland (283 million acres, 30 percent of all farmland) is owned by non-operator landlords, those that own land used in agricultural production but are not actively involved in farming. The remaining 20 percent of rented land (70 million acres) is owned by other farm operators (referred to as "operator landlords").

Retired farmers make up 38 percent of non-operator landlords. In addition, farmers approaching retirement are more likely to be landlords than younger operators. Twenty-seven percent of land operated by those under 34 years of age is associated with full-tenant operations, while just 8 percent is fully owned by the operator. On the other hand, 7 percent of land operated by those who are 65 or older is found in full-tenant operations and 43 percent is fully owned by the operator.

Landlord input to farm management decisions on rented land varies by type of decision. Decisions on short-term farm management practices, such as cultivation practices, crop choice, and harvesting, are commonly made with no input from landlords. Landlords are more likely to be involved in long-term decisions, such as adopting permanent conservation practices and participating in Government programs. In general, operator landlords tend to have more input in farm management decisions than their non-operating counterparts.

Most tenants rent land from multiple landlords. In addition, 57 percent of rented acres, accounting for 70 percent of lease agreements, are renewed annually. These findings highlight the considerable time and effort that some tenants must expend in managing and negotiating rental contracts.

Most landlords have long-term relationships with their tenants, suggesting that access to new land through renting may be limited. Seventy percent of acres rented from operator landlords have been rented to the same tenant for over 3 years and 28 percent for over 10 years. Non-operator landlords tend to have even lengthier relationships with their tenants; 84 percent of acres have been rented to the same tenant for over 3 years and 41 percent for over 10 years.

Non-operator landlords are more likely than operator landowners to acquire land through inheritance. Operator landowners acquired over 50 percent of their owned land through a purchase from a nonrelative, while non-operating landlords acquired over 50 percent through an inheritance or gift. Of the 45 percent of non-operator landlords who have no prior experience with farming, more than two-thirds either inherited or received their land as a gift. Thus, although a considerable fraction of non-operator landlords have not farmed, some familial or personal relationship to farming may exist.

Ten percent (93 million acres) of all land in farms is expected to be transferred during 2015-2019, most of which (6 percent) will change hands through gifts, trusts, or wills. Of all land expected to be transferred, only about a quarter (21 million acres) will be sold between nonrelatives. Another 14 percent (or 13 million acres) is anticipated to be sold from one relative to another. While the amount of farmland expected to be sold is relatively small, some of the land transferred through trusts, wills, and gifts may then be sold by the new owners, bolstering the supply of land available for purchase.

How Was the Study Conducted?

The analysis is primarily derived from the results of the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey. The TOTAL survey was administered by USDA's Economic Research Service (ERS) and National Agricultural Statistics Service (NASS) as part of a special followup to the 2012 Census of Agriculture to collect data from the owners and operators of agricultural land. The report was supplemented with data from the Agricultural Resource Management Survey (ARMS) and Census of Agriculture to account for historical periods not covered by the 2014 TOTAL survey.

U.S. Farmland Ownership, Tenure, and Transfer

Introduction

Trends and patterns in the ownership of agricultural land are of perennial interest to all involved with the farm sector. Land is a primary input into farming, accounting for 81 percent of total asset value on the 2014 farm-sector balance sheet (USDA-ERS, 2016), and tenure shapes many farm decisions, including those related to production, conservation, and succession planning. Land renters and owners may have conflicting incentives regarding conservation and production practices, reflecting their financial interests in short- or long-term economic returns from agricultural land. In addition, the relatively advanced age of many farmers raises questions about land ownership, especially how land will be transferred to the next generation of owners. Land tenure and ownership, therefore, has significant bearing on both the current and future state of the U.S. agricultural economy.

By analyzing ownership and tenure patterns through the lens of land ownership and landlord-tenant relations, this report is intended to support high-level discussions on contemporary agricultural policy. A primary motivation for the report is to provide information to agricultural stakeholders on land availability and accessibility. Lack of access to land is often cited as a significant barrier to farmers seeking to expand their operations, an issue that is particularly salient for beginning farmers and ranchers (e.g., Ahearn and Newton, 2009). Given that the vast majority of farm-sector asset value is in real estate, the decision to rent or own farmland has a significant bearing on the ability of farmers to invest in production capital, meet debt obligations, and adapt to market and environmental conditions. While this report does not go into the financial aspects of farmland ownership and tenancy, it provides a contemporary overview of who owns farmland, where it is owned, how much is owned, rental agreement terms, land acquisition methods, and land transfer plans, yielding important information on land accessibility for current and future farmers.

U.S. Department of Agriculture (USDA) surveys typically focus on farm operations. However, according to the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey, 39 percent of all owned farmland is rented out to farm operators, and 80 percent of that land is rented from someone who is not a farm operator. USDA surveys, thus, do not typically account for a group of agricultural landlords that own 31 percent of all land in farms. Most USDA surveys also do not ask operators questions about their potential role as landlords. The detail provided in this report is made possible by USDA's 2014 TOTAL survey. The 1999 Agricultural Economics and Land Ownership Survey (AELOS) (USDA-NASS, 1999) was the last national land ownership survey. TOTAL is representative of all agricultural land, held by both operator and non-operator landowners, in the contiguous 48 States.

Although there is a dearth of national land ownership surveys, some are available on a smaller scale. For example, in Iowa, the State legislature mandates a study on forms of ownership and farmland tenancy. A survey and associated report have been completed in Iowa every 5 years since 1982 (Duffy and Johanns, 2012). In 2005, New York State undertook a survey of rural landowners to understand how owners were using their land and their plans for the land (USDA-NASS, 2005). The National Woodland Owner Survey (Butler et al., 2016), conducted by the U.S. Forest Service as

part of its Forest Inventory and Analysis program, is a similar survey that targets woodland owners. Tenure-related surveys focused on agriculture have also been completed for targeted research efforts on a sub-State scale. One example is a four-county study spanning five States in the Great Lake Basin to address conservation program outreach to absentee landowners (Petrzelka, Buman, and Ridgely, 2009).

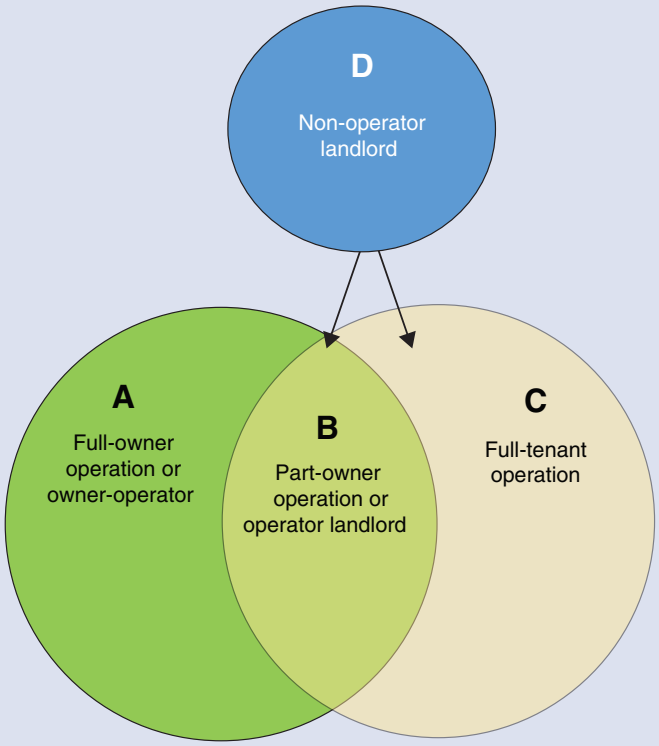
The report has two major sections. The first section focuses on land ownership and tenure patterns across U.S. farm operations, where geographic patterns and temporal trends are discussed. Additional breakdowns by farm production specialization and typology are included. The second section deals specifically with landowners and yields new insight into their characteristics, rental practices, and relationships with tenants. In discussing ownership and tenure from the viewpoint of both farm operators and agricultural landowners, the report provides a comprehensive examination of who owns and rents farmland in the United States and develops a foundation for more detailed statistical analysis.

Box 1

Definitions

Land tenure broadly refers to the laws, rules, and customs regarding the use, control, and transfer of land, including methods of gaining access to land and the associated arrangements (FAO, 2002). In this report, "landowner" denotes a person or entity (e.g., a corporation) that owns agricultural land, while the term "landlord" is reserved for a landowner who rents land to one or more agricultural operators. There are three types of landowners, which include two types of landlords discussed throughout this report. First, the term "owner-operator" refers to agricultural landowners who operate some or all of the land they own. Second, the phrase "operator landlord" describes farm operators who rent a portion of the land they own to other farm operators. A given farm operator who rents out land is both an owner-operator and an operator landlord. Last, the term "non-operator landlord" describes landlords that own and rent out agricultural land but are not actively involved in farming. In addition, the term "operator landowner" is used to collectively describe both owner-operators and operator landlords, or the land owned by them.

The Venn diagram below presents a stylized depiction of the most common interconnections between landowners and farm operations. When viewed from the perspective of farm operations, area A represents those farms where all of the land contained in the operation is owned by the operator, a group referred to as "full-owner" operations. In contrast, area C denotes farm operations in which all of the land is rented, termed "full-tenant" operations. The overlapping area, B, can be interpreted in two different ways. From a farm operation standpoint, B denotes "part-owner" operations, where some of the land is owned by the operator and the remainder is



continued—

Box 1

Definitions—continued

rented. The figure may also be interpreted from the perspective of landowners, in which case area A represents "owner operators," who may also be "operator landlords" if they rent land to other operators (area B). Area C has no analogous landowner interpretation, as full-tenant operations, by definition, do not contain any owned land. Last, area D represents landowners who are not actively involved with a farm operation but rent their land out to farm operators. This group is referred to as "non-operator landlords," and, as the arrows indicate, their land may be rented to either part-owner or full-tenant farm operations.

USDA has commonly used tenure classes to relate farm operations and operators. For example, farms can be classified according to whether the operator is a full owner, part-owner, or full tenant, who, as noted above, owns all, a portion, or none of the land in the operation, respectively. Because this report often describes results in terms of farmland acreage, as opposed to a count of farm operations, it is sometimes useful to evaluate land tenure as a relative measure (e.g., in 2014 *37 percent of land* in midsized family farms was rented).

Survey questionnaires administered by the USDA often use the phrase "rent or lease." For example, the Census of Agriculture asks how many "acres were rented or leased from others." In practice, these two terms are often used interchangeably, and survey questionnaire design allows for this. To reduce ambiguity, when describing land that is rented by a tenant, this report uses "rent," rather than "lease" (e.g., "approximately 39 percent of land…was rented"). However, to stay consistent with linguistic conventions, the phrases "lease" and "rental agreement" are used interchangeably when referring to a specific contractual agreement (e.g., "flexible cash lease").

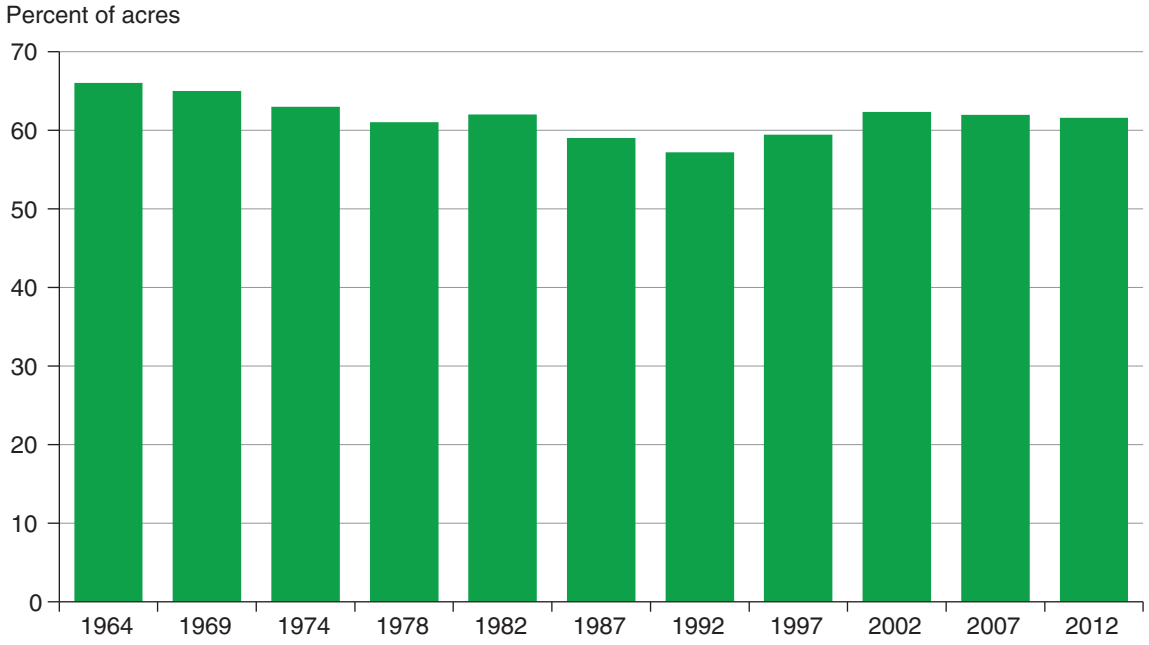
Farm operations: Historical Trends and Current Patterns of Tenure

Historical Trends in U.S. Farmland Tenure

In 2012, over 60 percent of farmland was owner-operated. The highest owner-operated land share of the last 50 years came in 1964, when approximately two-thirds of farmland was owner-operated. This percentage has been relatively stable over time, with a noticeable decline in the share of owner-operated land (and an increase in the share of farmland rented) during the farm crisis of the 1980s (fig. 1).

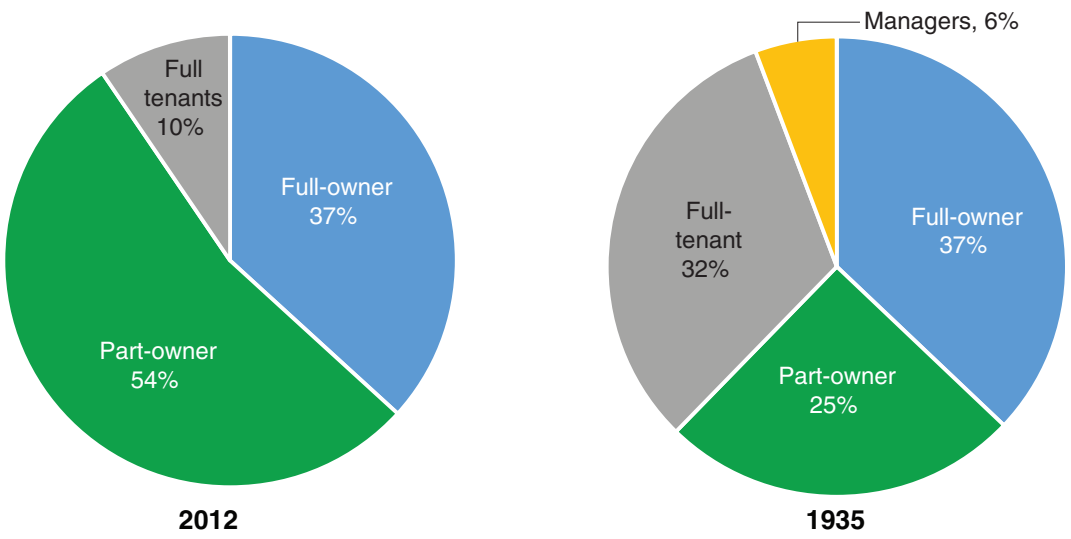
However, the distribution of the owned acres among and within farm operations has changed dramatically. Today, the majority of U.S. farmland is part of operations characterized by a mixture of rented and owned land—referred to as part-owner operations in USDA's Census of Agriculture. Between 1935 and 2012, the percentage of acres in full-owner operations, where the operator owns all of the land on the farm, remained relatively stable at 37 percent in 1935, 34 percent in 1954, and 37 percent in 2012 (U.S. Census Bureau, 1935,1954; USDA-NASS, 2012). The most significant historical change in tenure derived from full-tenant operations (32 percent of acreage in 1935 and 10 percent in 2012) shifting to part-owner operations—25 percent of acreage in 1935 and 54 percent in 2012 (fig. 2).

Figure 1
U.S. farmland acres operated by landowner, 1964-2012



Source: USDA, Economic Research Service using National Agricultural Statistics Service Census of Agriculture data, various years.

Figure 2
The share of acres in part-owner operations has increased dramatically



Note: Percentages in the figure may sum to more than 100 due to rounding. The "Managers" category included in the 1935 figure is no longer used in the Census of Agriculture.
Source: USDA, Economic Research Service using National Agricultural Statistics Service Census of Agriculture 2012 and U.S. Census Bureau Census of Agriculture data, 1935.

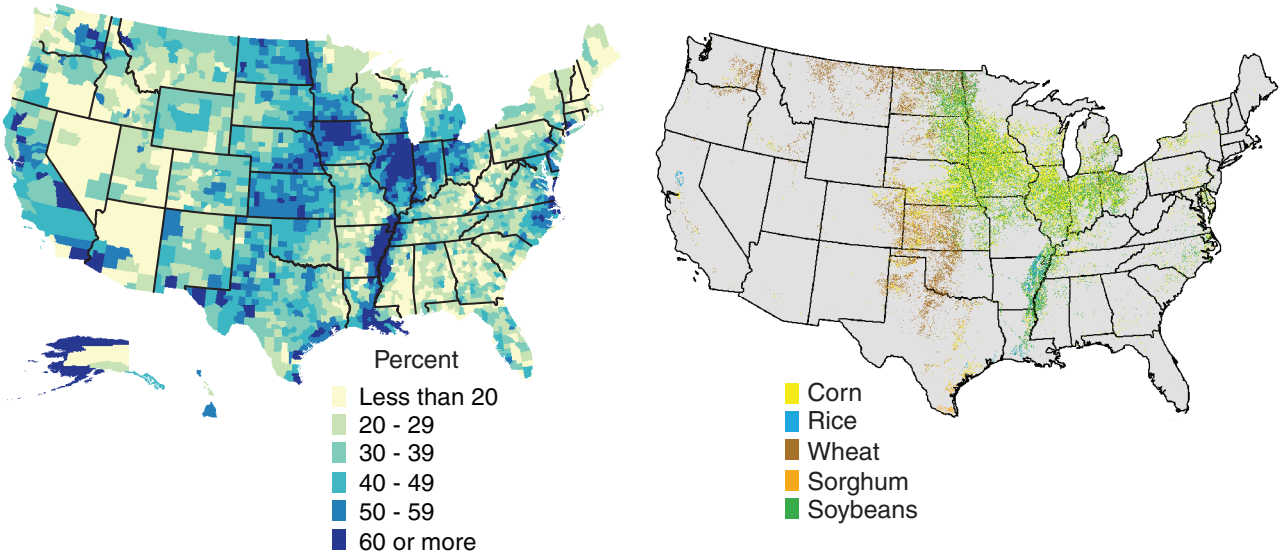
Land Ownership Varies by Region and Land Use

In 2012, the Midwest and Plains regions were associated with the lowest percentages of owner-operated land, at 54 percent and 57 percent, respectively. The Northeast and West regions, each with 71 percent of land in farms owner-operated, had the highest rates of land ownership. These broad regional patterns give some indication of where renting farmland is most common, but additional variation exists within regions. For instance, farmland renting in the Midwest, characterized by the lowest rate of land ownership, is mainly concentrated in Illinois and Iowa, with relatively low shares of rented acres in Wisconsin and large portions of Minnesota and Michigan (fig. 3). California, on the other hand, has a number of counties with rental rates of over 60 percent, which contrasts with the lower share of rented acres found throughout much of the West region. Regional variation in farmland ownership reflects the underlying characteristics of farmland, including land use and production specialization. In general, rental activity is concentrated in cash-grain-production areas. Cash grains such as rice, corn, soybeans, and wheat, along with cotton, are commonly grown in areas characterized by high rental percentages (figs. 3 and 4).

As Figure 4 illustrates, the majority of land in operations specializing in cash-grain crops and cotton is rented. Cotton and rice, in particular, are associated with a very high proportion of rented farmland. Rice requires land with specific physiological attributes that is only available in a handful of States, with minimal potential for expansion beyond existing growing areas. Given this natural constraint on land availability, land cost has been noted as the primary driver of the high percentage of rented land in rice production (Baldwin et al., 2011). Growing cotton, on the other hand, requires relatively expensive, specialized equipment. To take advantage of economies of scale, cotton growers may rent additional land in order to spread fixed machinery costs over a larger base area (Meyer et

Figure 3

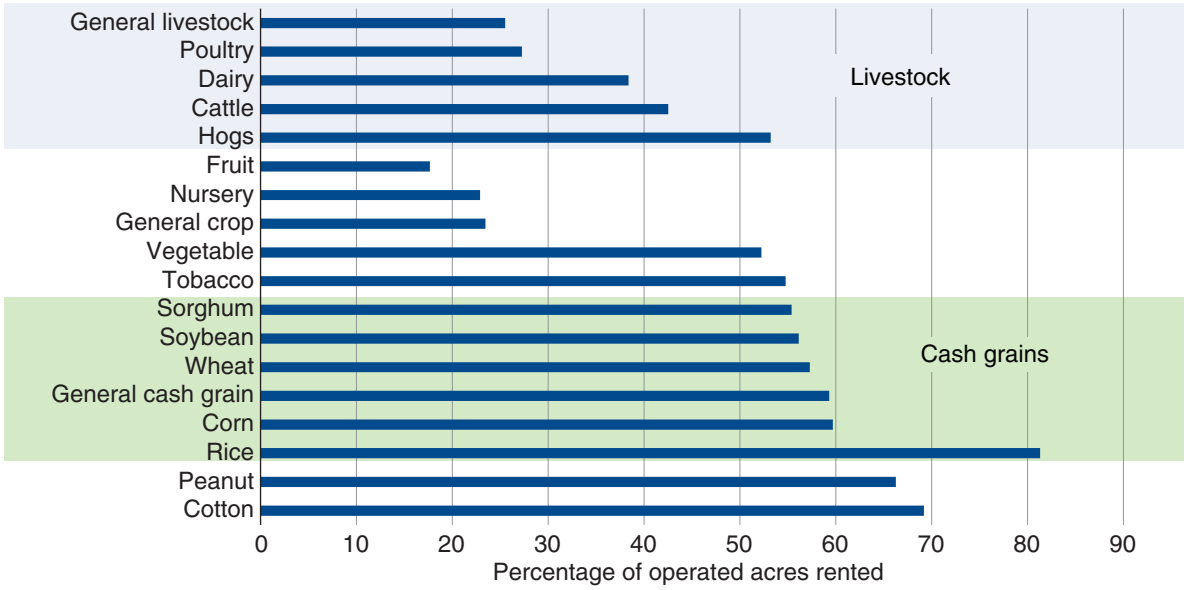
Percent of U.S. farmland rented varies by county and is concentrated in major cash-grain production regions



Source: USDA, National Agricultural Statistics Service, 2012 Census of Agriculture.

Figure 4

Share of land rented varies by production specialty



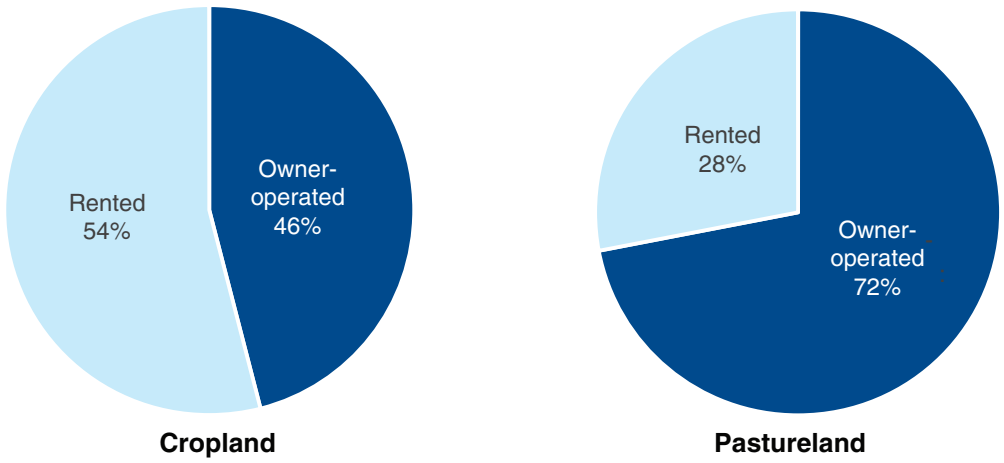
Note: Production specialty based on greater than 50-percent value of production. Three-year (2012-2014) averages shown. The general crop category includes farm operations where the value of production for a specific crop did not amount to at least 50 percent, but total value of production for several crops did. If at least 50 percent of production value was derived from multiple cash grains, the operation was placed in the general cash grain category. General livestock is similarly defined.

Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 Tenure, Ownership, and Transition of Agricultural Land survey, 2012 and 2013 Agricultural Resource Management Survey.

al., 2007). In addition, both rice and cotton are nearly always irrigated, and if water rights must be purchased or leased, owning land outright may become economically unfeasible. The high portion of rented land in peanut production can largely be attributed to peanuts and cotton being grown in rotation (USDA, 2013 and 2014).

Relative to crop farms, livestock producers tend to rent fewer acres overall (fig. 4). The rental percentages for cattle and dairy operations coincide with the fact that pastureland is rented at a lower rate than cropland. Data from the TOTAL survey indicates over half of cropland is rented, while just over a quarter of pastureland is (fig. 5).[1] Pastureland is less likely to be rented than cropland for several reasons. First, pastureland is often cheaper than cropland (Nickerson et al., 2011), making it less financially burdensome for farmers and ranchers to purchase land to begin a new operation or expand an existing one. Second, renting land allows farmers to adjust their land margins in response to changing economic conditions. If an operator specializing in crop production wishes to expand an existing enterprise, the operator can typically spread out existing fixed costs (e.g., machinery costs), to farm newly rented land. Ranchers, on the other hand, will typically need to incur new fixed costs to expand their operation by acquiring additional livestock and fencing. The need for investments in durable capital increases ranch operators' incentive for purchasing pastureland rather than renting additional land. The vast majority of hog operations also contain cropland (McBride and Key, 2013), which may explain why hog farms have the highest rental percentage of any livestock category. In contrast, poultry operations tend to be highly specialized, and, relative to hog farms, a much larger share contain no cropland at all (MacDonald, 2014).

Figure 5
Pastureland is more likely than cropland to be owner-operated

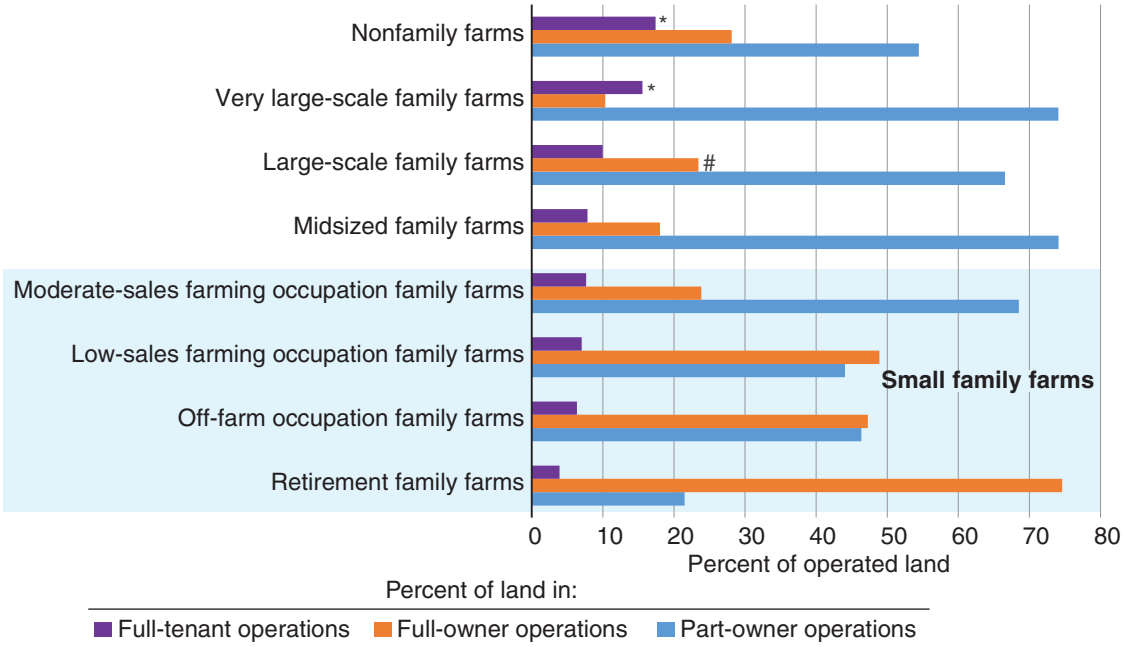


Note: Representative of the 48 contiguous States. In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

[1]Throughout the report, the statistical reliability of each individual survey estimate presented in charts and figures is measured using the coefficient of variation (CV). For a particular estimate, the CV is measured as the ratio of the standard error to the estimated value. CVs are denoted in each chart and table by placing an asterisk, *, next to an estimate with a CV between 25 and 50, and a pound sign, #, next to an estimate with a CV greater than 50. Unless otherwise noted, all direct comparisons made with the TOTAL survey data are, at a minimum, significant at the 10% significance level. When attention is drawn to a relationship that is not significant at the 10% level or better, the p-value of the associated statistical test (which in all cases will be greater than 0.1) is presented in parentheses. Statistical inference is conducted using standard errors computed using NASS's official 30 jackknife replications.

For farm operations, there is a strong association between farm size and rented acreage.[2] Overall, small family farms, comprised of retirement farms, off-farm occupation farms, and low- and moderate-sales farming occupation farms, have the lowest portion of rented acres (31 percent). Forty-six percent of the acreage in small family farm operations is found in full-owner operations, (i.e., those that rent no land at all), while 7 percent is found in full-tenant operations, or those based solely on rented land (fig. 6). The remaining 47 percent of land in small family farms is in operations characterized by a mixture of rented and owned land (part-owner operations). Retirement farms, defined as farms with landowners who report that they are retired but still farm on a small scale, have nearly three-quarters of their acreage in full-owner operations and just 4 percent in full-tenant operations. The vast majority of land in off-farm occupation farms is found in either full-owner (47 percent) or part-owner (46 percent) operations. Low-sales farm operations are also most commonly found in full-owner (49 percent) and part-owner (44 percent) operations. The final small family farm category, moderate-sales farms, is characterized by a far lower proportion of land in full-owner operations (24 percent) compared to the other small family farm types, and the bulk of its acreage, 69 percent, is contained in part-owner operations.

Figure 6
Rented acreage varies by farm type



Note: ERS farm typologies based on Hoppe and MacDonald, 2013. The bottom panel highlighted in blue represents the categories jointly referred to as "small family farms" in the text. In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

[2]Farm size is defined by gross cash farm income (GCFI). Family farms, those where the farm operators and their relatives own a majority share of the farm business, are defined as follows: low-sales (GCFI less than $150,000), moderate-sales (GCFI between $150,000 and $350,000), midsized (GCFI between $350,000 and $1,000,000), large-scale (GCFI between $1,000,000 and $5,000,000), and very-large-scale (GCFI > $5,000,000). Family farms with GCFI less than $350,000 are further broken down into those where the operator is retired from farming (retirement farms) or does not identify farming as the primary occupation (off-farm-occupation farms).

Beyond these small family farm categories, renting prevalence tends to increase with farm size. Overall, 48 percent of the combined land in midsized, large, and very large family farms is rented. The majority of acres in midsized (74 percent), large (67 percent), and very large (74 percent) family farms are found in part-owner operations. Approximately 8 percent of midsized farm acreage is found in full-tenant operations, a figure that increases to 10 and 16 percent for large- and very-large-scale farms, respectively.[3] Land in nonfamily farms, where the operator or relatives of the operator do not own a majority share of the business, is most commonly found in part-owner operations (54 percent).

Operators who list farming as their primary occupation (small family farms with low and moderate sales, as well as larger farms) will generally value the flexibility and lower capital requirements associated with renting farmland, enabling them to respond more quickly to changing economic and production conditions on a portion of the land they farm. Similarly, it is not surprising that off-farm-occupation farms are associated with the lowest share of rented land. Most operators who are not engaged in farming as the primary source of their income are likely to be less concerned about their ability to adapt to changing market conditions, and, hence, would also be expected to place a lower value on the flexibility afforded by renting. In contrast, for off-farm-occupation farmers who do rent land, renting can be used to maintain an operation until farming becomes a viable primary source of income. Overall, however, it appears that there is a detectable pattern in farm operation size and the likelihood of an operation using rented land in some capacity.

Younger Operators Rent a Larger Portion of Their Land

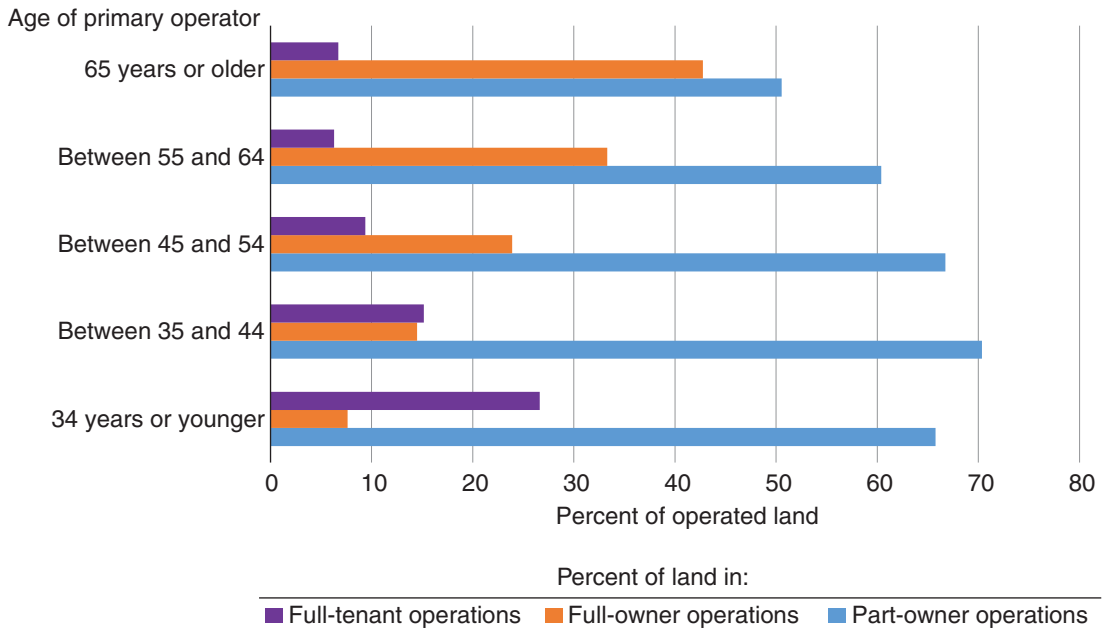
Land renting is a strategy employed by younger operators to enter farming and build experience before assuming the risk of land ownership (Kauffman, 2013). Renting enables farm operators to avoid the capital expense associated with purchasing land and may be desirable to limit the operation's overall level of debt. It frees up capital that can then be invested in other areas of the operation, such as machinery or building improvements. This tradeoff is especially salient for beginning farmers and ranchers, as there are large capital requirements to starting a farm.

In general, the percentage of land operated through renting declines as the age of the operator increases. Figure 7 presents a clear trend in renting prevalence across different operator age groups, where, as operators age, the percentages of land in full-tenant operations goes down while the share of land in full-owner operations increases. Specifically, 27 percent of the acres operated by primary operators under 34 years of age is found in full-tenant operations, the highest full-tenant proportion of any age category. Moreover, operators less than 34 years old are also associated with the lowest proportion of land in full-owner operations, 8 percent. Conversely, only 7 percent of land operated by farmers older than 65 is contained in full-tenant operations, while 43 percent is associated with full-owner operations. This accords with the farm lifecycle framework often discussed in farm management, where young farmers with high debt-to-asset ratios initially rent a large portion of the land they operate, illustrating the importance of rental agreements in facilitating land access for young and beginning farmers and ranchers.

[3]While the point estimates for percent of land in full-tenant operations increase with farm size, note that the midsized and large family farm operation estimates are not statistically different ($p=0.26$), nor is the difference for large and very large family farms ($p=0.18$).

Figure 7

Younger farm operators rent a larger share of the land they operate



Note: In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service TOTAL survey.

The 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) Survey

USDA surveys typically focus on farm operations. Therefore, little is known about the landlords of the 39 percent of farmland in the contiguous 48 States that is rented by farm operators. To collect data from agricultural landowners and landlords and learn more about rented land and who owns it, USDA's Economic Research Service (ERS) and National Agricultural Statistics Service (NASS) conducted a special study as part of the Census of Agriculture program of agricultural land: The 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey.

Prior to TOTAL, the most recent national survey on land ownership and tenure was the 1999 Agricultural Economics and Land Ownership Survey (AELOS). Of particular importance are the novel and updated data TOTAL yields on landlords, particularly non-operator landlords. The TOTAL survey provides current information on a variety of topics related to farmland ownership, including income, expenses, debt, assets, the acquisition and transfer of land, non-agricultural use rights, and rental agreements. This report provides an overview of much of the new information on landlords and their relationships with their tenants. However, the report addresses only a portion of the information available from TOTAL, and, in particular, does not go into detail on the array of financial data collected with the survey.

The TOTAL survey was administered with two separate instruments, one for farm operators, who may or may not rent out land, and another for non-operator landlords. The target population for the operator version of TOTAL was all agricultural establishments with at least $1,000 in agricultural sales (or potential sales). The target population for the TOTAL non-operator version was all landowners who rent out land in active agricultural use but do not operate land themselves.

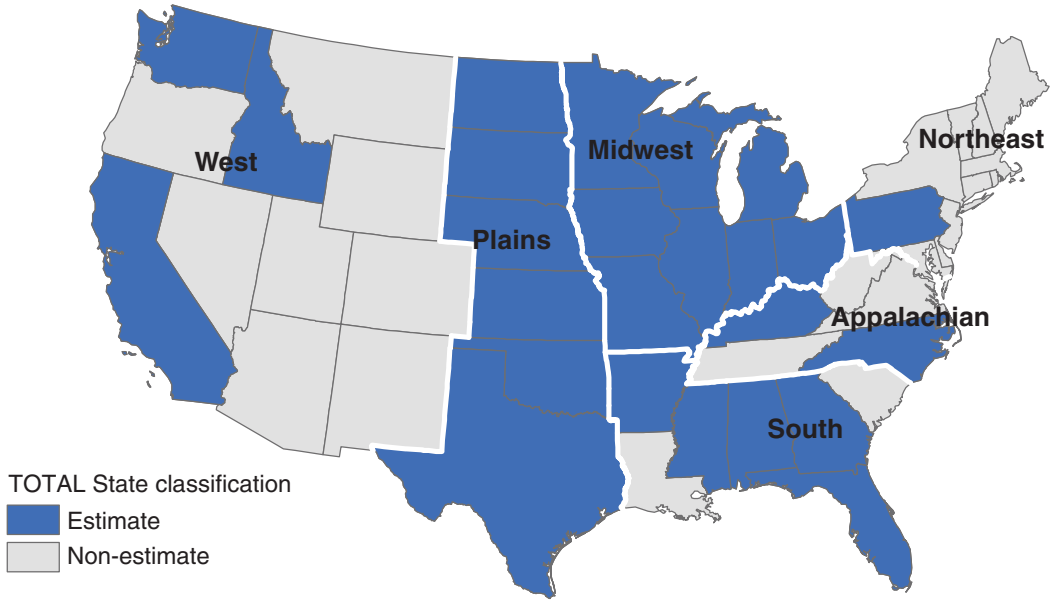
While both versions surveyed landowners and operators in all 48 States, the top 25 cash receipt States were surveyed more extensively to allow State-level estimates. The estimate States for the 2014 TOTAL survey were: Alabama, Arkansas, California, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Dakota, Texas, Washington, and Wisconsin (fig. 8). These 25 States were selected to represent over 85 percent of all farm cash receipts in the United States and represented 70 percent of all agricultural land and 78 percent of all rented land in 2014. The remaining 23 contiguous States surveyed were combined at a regional level so that regional estimates could be published. As a result, final data are available as a 48-contiguous-State total, as well as individually for these 25 estimate States and for 6 regions. The U.S. sample size for both TOTAL survey versions was over 40,000. Additional detail on the TOTAL survey methodology is available at: http://www.agcensus.usda.gov/Publications/2012/Online_Resources/TOTAL/quality_measures/ttalqm15.pdf.

Several additional aspects of the TOTAL survey design bear mentioning:

- The last comprehensive land ownership survey conducted by USDA was the 1999 Agricultural Economics and Land Ownership Survey (AELOS). While TOTAL and AELOS collected similar data, there are notable differences in how the two surveys were designed and conducted. For example, due to their increased prevalence in the U.S. agricultural sector, the TOTAL survey collected data on trust ownerships, which were not accounted for in AELOS. As a result of this and other changes in the survey process, most TOTAL data are not directly comparable to earlier survey

Figure 8

The 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey allows for statistically reliable estimates for 25 estimate States, 6 regions, and the 48 contiguous States



Note: Additional information on the TOTAL survey and FAQs can be found at: https://www.agcensus.usda.gov/Publications/2012/Online_Resources/TOTAL/index.php.

data on this topic. In the TOTAL survey, non-operator landlords and operators were sampled independently. The combined results are representative of all agricultural land both owned and rented by operators. In contrast to AELOS, the TOTAL survey was not designed for linkages between the survey versions (i.e., landlord and tenant responses cannot be linked).

- The TOTAL survey is representative of all agricultural landowners and also of all farm operations. Because the TOTAL sample frame of farm operators overlaps that of the annual Agricultural Resource Management Survey (ARMS), ARMS was suspended in 2014. To maintain the data series provided by the ARMS, much of the same information was collected in the TOTAL survey.

- The TOTAL data provide a count of landlord entities and arrangements—2.13 million landlord entities in 2014. Although corporate landlord entities and trusts could consist of multiple landlords, the survey counts these landlord entities as one. Additionally, of the 1.9 million non-operator landlords, 1.4 million may be referred to as "principal landlords." They are either individual owners or the principal partner in a partnership arrangement. Demographic information was collected only for these two types of non-operator landlord ownership arrangements. Since corporations and trusts are entities that often contain many people, and a gender, for example, can't be assigned to a group of individuals, these types of ownership arrangements are necessarily excluded from the demographic data calculations.

- In some instances this report compares the demographic information of these "principal landlords" with demographics for operators who own land. For operator landowners, the age of the landowner was assumed to be that of the principal operator since the ownership structure of the land is unknown. This is an assumption made for purposes of comparison but may not be indicative of who owns the land in reality, since the principal operator can differ from the principle landowner in owner-operator and operator-landlord tenure arrangements.

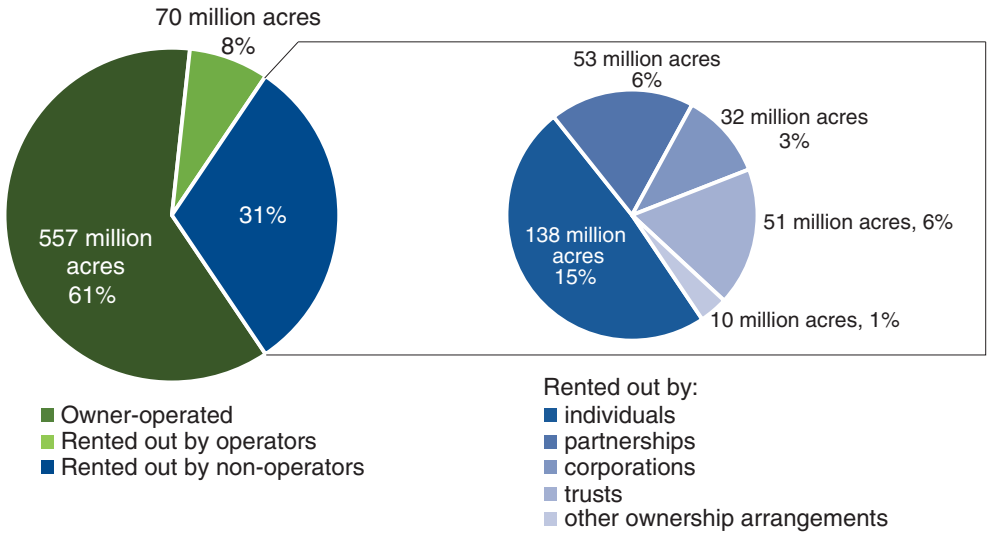
Landlords: Current Patterns in the Tenure, Ownership, and Transition of U.S. Agricultural Land

Most Rented Farmland Is Owned by Landlords Not Actively Involved in Farming

Recent estimates from the Census of Agriculture indicate that in the past 3 Census years (2002, 2007, and 2012), approximately 38 percent of all farmland was rented, down from nearly 43 percent in 1992 (fig. 1). In 2014, the TOTAL survey results indicated that 39 percent of the 911 million acres of farmland in the contiguous 48 States was rented (fig. 9). Farm operators at times operate a portion of the land they own and rent out the rest. Eight percent (70 million acres) of all land in farms is rented from such operator landlords. The remainder of land in farms (31 percent, or 283 million acres) is rented from non-operator landlords or landlord entities that own land in agricultural production but are not actively involved in farming. Nearly half of the land rented out by non-operator landlords is owned by individuals, while the remainder is split between partnerships, corporations, trusts, and other ownership arrangements.

Since the production of many commodities is concentrated in a given area, regional and State-level patterns in ownership have implications for land accessibility and transition as they relate to specific agricultural outputs. The TOTAL survey was designed to provide statistically reliable reporting for 6 regions and 25 States. Table 1 decomposes farmland ownership for each region and State into the three major ownership categories: owner-operator, operator landlord, and non-operator landlord.

Figure 9
Non-operators own 31 percent of the land on farms in the 48 contiguous States[1]



[1]Numbers in the tables and figures contained in this report may not sum due to rounding.
Note: Representative of the 48 contiguous States. In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

Table 1

Agricultural land ownership distribution varies by State and region

	Owner operator %	Operator landlord %	Non-operator landlord %	Total owned acres (in 1,000s)
Appalachia	65	6	29	44,827
Kentucky	69	6	24	13,004
North Carolina	57	5	38	8,401
Midwest	53	9	37	164,755
Illinois	40	10	50	26,902
Indiana	46	8	45	14,700
Iowa	46	12	41	30,505
Michigan	60	7	34	9,950
Minnesota	55	10	35	25,900
Missouri	65	8	27	28,300
Ohio	56	7	37	14,000
Wisconsin	68	7	25	14,498
Northeast	71	4	25	21,628
Pennsylvania	70	5	26	7,720
Plains	56	9	35	338,064
Kansas	48	11	40	45,998
Nebraska	56	9	35	45,168
North Dakota	50	13	36	39,299
Oklahoma	59	7	34	34,299
South Dakota	60	15	25	43,293
Texas	59	6	35	130,007
South	63	6	30	65,296
Alabama	73	6	21	8,899
Arkansas	53	6	41	13,800
Florida	72	6	23	9,499
Georgia	71	6	22	9,397
Mississippi	63	7	29	10,900
West	70	6	24	276,513
California	55	8	37	25,500
Idaho	69	10	21	11,818
Washington	62	8	30	14,703

Note: The 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) sampling design allows for statistically reliable estimates for 25 “estimate” States. In all figures based on TOTAL survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.

Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

As Table 1 illustrates, there is considerable regional and intraregional variation in who owns and rents farmland. Renting land is most common in the Midwest and Plains regions, where 46 and 44 percent of farmland is rented out, respectively. In addition to having the largest regional share of rented land, the Midwest also has the largest percentage of land owned by non-operating landlords (37 percent). While the Midwest has the highest total rental percentage, there is significant State-level variation in the region. For example, 60 percent of Illinois farmland is rented out (50 percent by non-operators), a figure that drops to just 32 percent for Wisconsin (25 percent by non-operators). Significant intraregional ownership variation is also found in the South, where Alabama has just 21 percent of its farmland under non-operator ownership, a regional low, while Arkansas leads the region with 41 percent of land owned by non-operators. On a regional scale, the Northeast and West have the lowest rental rates, at 29 percent and 30 percent, respectively. The West is also associated with the lowest percentage of land owned by non-operator landlords (24 percent).

The 354 million acres of rented agricultural land were owned by 2.13 million landlord entities in 2014 (table 2). Non-operator landlords represent 87 percent of the entities, owning 80 percent of rented farmland, while the remaining 13 percent are operator landlords who owned 20 percent of rented land. Of the total farmland held by non-operator landlords, the majority of land is held by individuals (138 million acres). Partnerships (53 million acres) and trusts (51 million acres) also own a considerable share of the land rented to farm operators. Of the non-operator individual and partnership arrangements, 38 percent of landlords classify themselves as retired farmers. Corporate arrangements, which include both family and nonfamily corporations, own only 3 percent of all farmland (and 9 percent of rented land), reinforcing the idea that corporate involvement in the agricultural sector generally comes in more indirect forms (Hoppe et al., 2008). The remainder of land (10 million acres) is owned by other ownership arrangements, such as estates, cooperatives, municipalities, and non-profit organizations.

Table 2
Landlords and acres rented out by ownership arrangement

	Number of landlord entities[a]		Acres rented out		Median acres rented out
	Thousands	*Percent*	*Millions*	*Percent*	*Acres*
Operator landlord	**280.0**	**13**	**70.3**	**20**	80
Non-operator landlord	**1,851.8***	**87**	**283.4**	**80**	**55**
Individual	1,092.6	51	138.2	39	48
Partnership	361.8#	17#	52.8	15	55
Corporation	91.0	4	31.5	9	104
Trust	249.6	12	50.6	14	80
Other	56.8	3	10.4	3	60

[a]Landlords who rent out land under more than one arrangement are included once in each relevant arrangement category.
Note: In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.

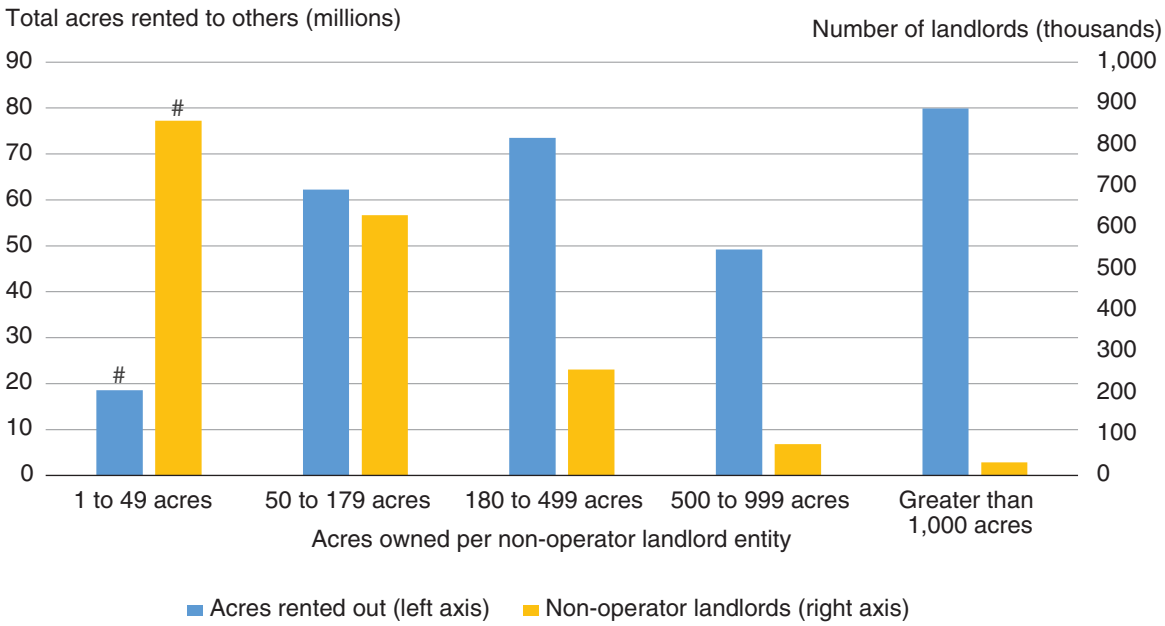
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

Concentration of Land Ownership Among Landlords

At the median, operator landlords rented out more acreage than non-operator landlords (table 2). However, there is variation in median holdings by the type of non-operator ownership arrangement. Corporate owners tended to rent out larger allotments of land than other types of non-operator ownership arrangements; however, as noted, corporate-owned acres make up a small share (9 percent) of total rented land. Therefore, the large number of non-operator landlords classified as individuals, a group that tends to own relatively small allotments of land, is the main driver of the smaller median acreage (relative to acreage rented out by operator landlords) rented out by non-operators.

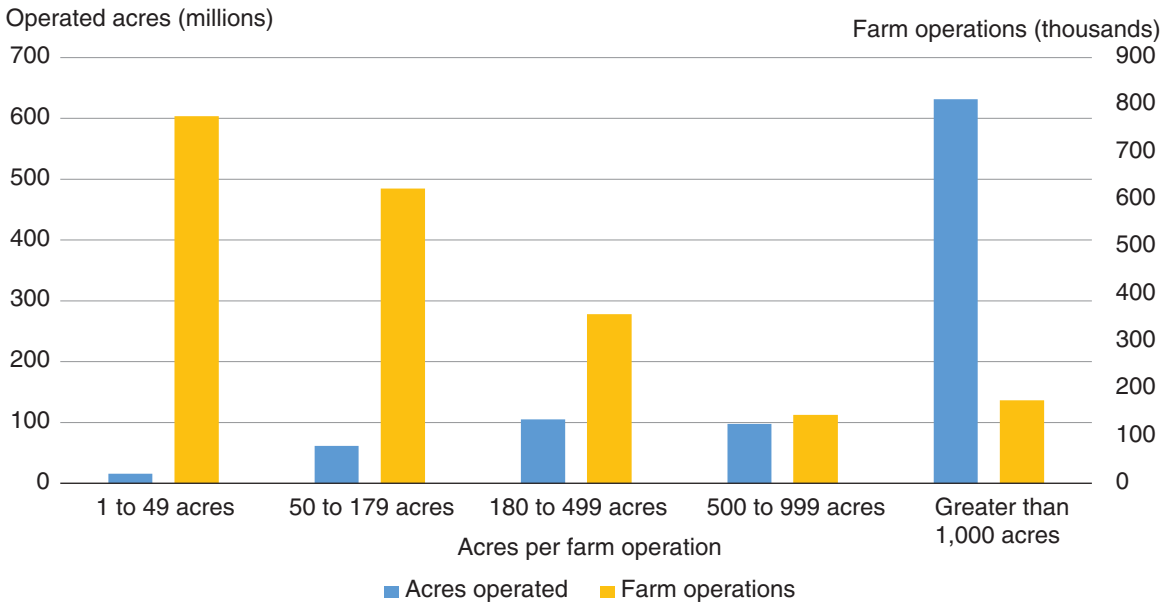
Although most landlords have relatively small landholdings, the distribution of total land rented out is skewed towards those who own large amounts of land. Specifically, non-operator landlords who rented out less than 180 acres each represented 80 percent of landlord entities, but only 29 percent of the total land rented out by non-operator landlords (fig. 10). This represents a small decline in large holdings from the finding in the 1999 AELOS, which indicated that 10 percent of non-operator landlords owned at least 500 acres of farmland, collectively accounting for 58 percent of all acreage owned by non-operator landlords (Nickerson et al., 2012). While a large portion of rented land is concentrated among a small number of landlords, the concentration of land in farm operations is even more striking (fig. 11). Nearly 70 percent of all land in farms is contained on the 8 percent of farm operations that are larger than 1,000 acres. The majority of farm operations (67 percent) are relatively small in terms of acreage (less than 180 acres), but such operations represent less than 10 percent of the total amount of land in farms.

Figure 10
Distribution of non-operator landlords and land owned by landholding acreage



Note: In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

Figure 11
Distribution of farm operations and farmland by farm acreage, 2014



Note: The farm operation acres in each category were proportionally adjusted downward to reconcile the 2% difference in operation and owned farm acres in the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey results. In all figures based on TOTAL survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

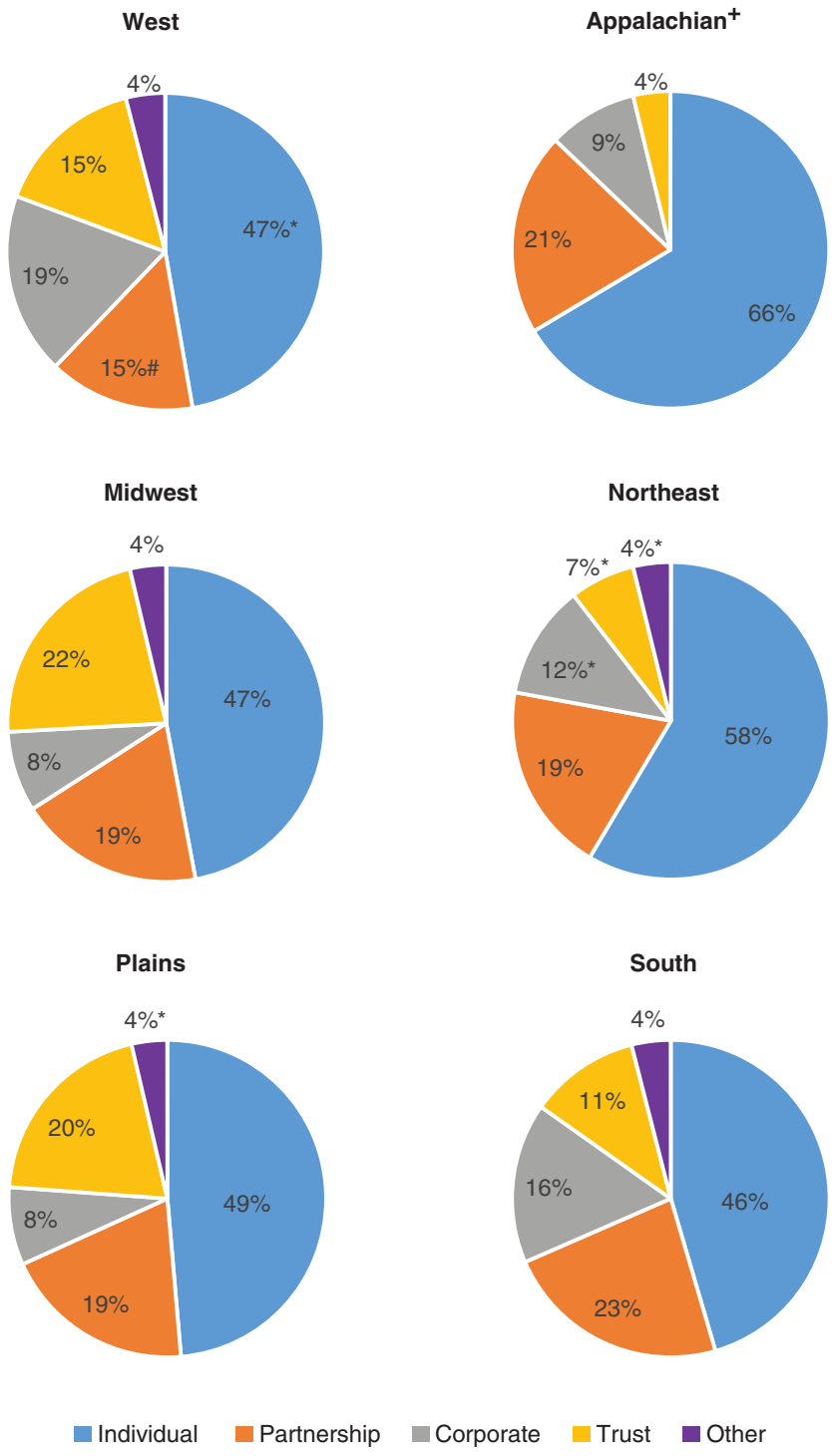
The median size and distribution of farmland holdings have implications for farmland accessibility. In particular, these findings are suggestive of the time and effort it takes for existing farm operations to seek out additional land and for beginning farmers to obtain the initial farmland for their operations. The median rented acreage for farmers who rent at least a portion of the land in their operation was 111 acres in 2014, larger than the median acreage rented to farmers by each landlord type (80 acres for operators, 55 acres for non-operators) (table 2). This indicates that most farm operators looking to rent farmland must piece together holdings from multiple landlords, requiring time and effort for managing contracts with those landlords.

In all regions of the country, the majority of farmland owned by non-operator landlords is controlled by individuals. As figure 12 shows, the Appalachian region has a significantly higher proportion of land rented out under individual arrangements (66 percent) than most regions.[4] In terms of total corporate land ownership (family and nonfamily combined), the West and South have regional shares of 19 and 16 percent, respectively, while the Midwest and Plains regions have corporate ownership shares of just 8 percent. Last, the Plains and Midwest regions have the highest shares of farmland under trust ownership. Trusts are often costly to manage once established (see Box, "Trusts as an ownership arrangement and land transfer method"). Thus, it should be expected for trust use to be more beneficial in regions characterized by large agricultural parcels, such as the Midwest.

[4]The sole exception is the difference between individual ownership in the Appalachian and West regions. Although the point estimate for individual ownership in the West is just 47 percent compared to 66 percent in Appalachia, the difference between the two is statistically insignificant (p=0.26).

Figure 12

Share of acres rented by non-operator landlord ownership structure



+The corporate and other ownership categories have been combined for the Appalachian region to preserve survey respondent confidentiality.

Note: In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.

Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

Box 2

Trusts as an ownership arrangement and land-transfer method

Trusts are a useful and flexible tool for estate planning.[1] In recent years, trusts have become an increasingly popular method of transferring and preserving assets, including farmland (Duffy, 2008). Trusts provide a means to manage property and can be designed to fit many individual situations, including transferring farm businesses, retaining limited interests in property, or reducing the size of an estate (Hachfeld et al., 2013). They can also be used to help protect the assets from lawsuits and other adverse actions.

One reason to use a trust to transfer land ownership is to avoid probate (Hachfield et al., 2014). Property that is transferred by will must go through probate, a public, court-supervised process. The probate process can be time-consuming and expensive, especially if the land in question is located in multiple jurisdictions. Transferring property through a trust allows the affected parties to avoid probate costs and, unlike probate, is a private process not open to the public through the associated court records. However, the costs of starting and managing a trust are incurred immediately upon its establishment, whereas probate costs are not paid until the death of the property owner (Hachfield et al., 2014). Thus, the net benefits of using a trust or will to transfer property vary on a case-by-case basis.

In the case of a trust, the ownership of assets is actually transferred to the trust (Hachfield et al., 2014). However, the transferor, at least initially, may retain control of the assets as trustee of the trust. Thus, the establishment of a trust may or may not affect the use and availability of the land for rent or purchase.

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[1]Although no distinction is made in the TOTAL survey, trusts can be grouped into two categories: revocable and irrevocable trusts. Revocable trusts can be modified or discontinued at any time after they have been established. Irrevocable trusts, in contrast, cannot be amended.

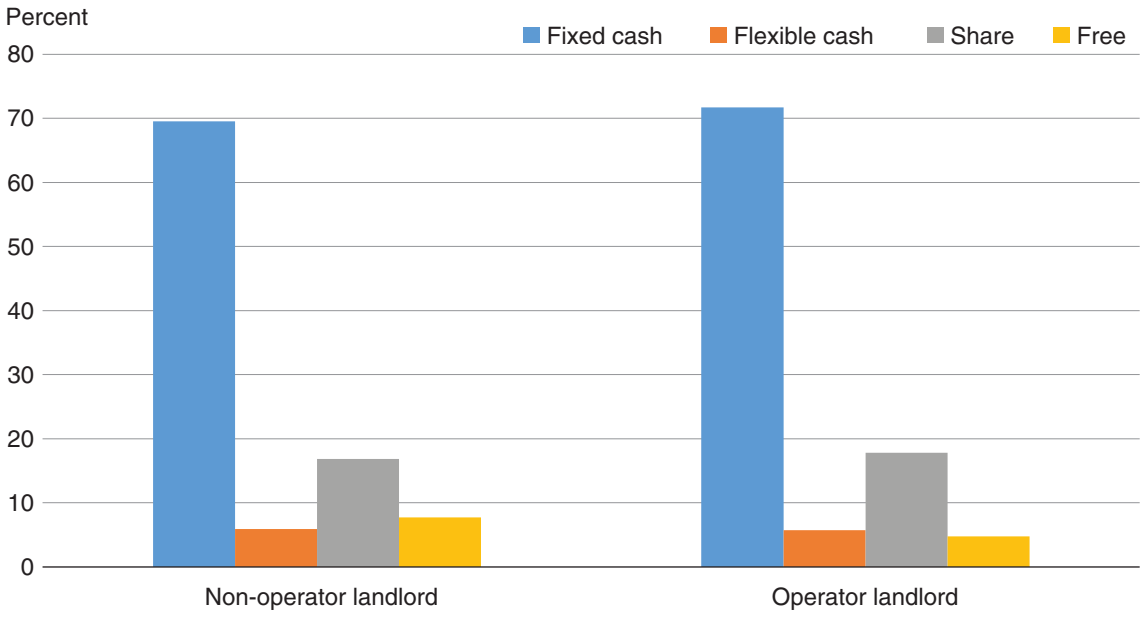
Land Rental Agreements

Because many farm operators rent a portion of the land they operate, understanding the terms of rental agreements helps to inform how different types of landlords impact the agricultural sector and access to land. For example, if a given type of landlord tends to engage in long-term rental agreements with tenants, it implies that relatively less land from that particular type of ownership entity will be available for new tenants to rent each year (as opposed to land leased by other landlord types for shorter terms).[5]

Fixed-Cash Rental Agreements Are Most Common

There are four basic types of rental agreements: fixed-cash rent; flexible- or hybrid-cash rent (where, for example, all or part of the payment is based on prices after the crop is harvested); production- or cost-share; and free. Over 70 percent of rental contracts represented in this survey used a fixed-cash rent payment. The distribution of contract types is similar for operator and non-operator landlords (fig. 13).

Figure 13
The distribution of rental agreements by type is similar between operator and non-operator landlords



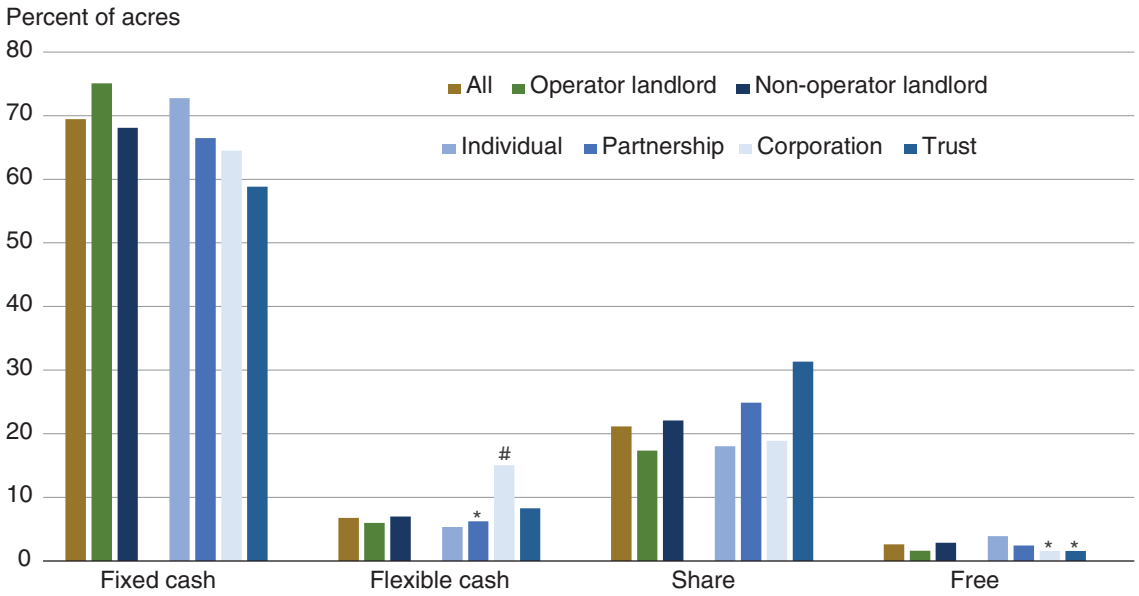
Note: In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

[5]The TOTAL survey asked landlords detailed questions about the rental agreements with their three largest (in terms of acres rented) tenants. Only 1 percent of all landlords had more than three tenants. Therefore, information collected on rental agreements through the TOTAL survey represented 98 percent of rented land. A note has been provided under each figure affected by this truncation.

Fixed-cash rent dominates the contract types for both groups of landlords and across all types of non-operator ownership arrangements (fig. 14). The overall trend in rental agreements has increasingly favored cash-rent over share-based contracts (Paulson and Schnitkey, 2013). This may be a result of landlords becoming less interested in taking on the risk associated with share agreements or, in the case of non-operator landlords, the difficulty in monitoring tenants (Harwood et al., 1999). Previous research has also found that tenants with a greater number of landlords are less likely to engage in share agreements (Fukunaga and Huffman, 2009), possibly due to the burdens of sharing management responsibilities with multiple landlords or the relative ease of acquiring land with cash bids as opposed to share bids (Harwood et al., 1999).

Flexible-cash rent agreements provide some of the advantages of risk-sharing inherent in a traditional share agreement, while at the same time giving the tenant more autonomy over management or marketing decisions, similar to a fixed-cash-rent lease (Paulson, 2012). The tradeoff, however, is that flexible-cash rental agreements can have highly complex contract terms. Accordingly, one hypothesis regarding the use of flexible-cash leases is that they require a higher degree of sophistication on the part of landlords. Estimates from the TOTAL survey data provide some evidence that non-operator corporate landlords are the most likely to use this contract type (fig. 14), but the effect is not statistically significant ($p=0.30$). Thus, while it seems plausible that corporate landlords may have a greater capacity to provide the means and expertise required to design and manage flex agreements, there is not precise evidence to confirm this in the TOTAL survey results. An alternative hypothesis is that flex leases are used when the relationship between parties is strong. Flexible-cash leases protect the tenant from downside risk when prices or yields are low, while rewarding the landlord when returns are high. Regardless of the motivation, flexible-cash leases enable greater risk-sharing between rental parties to better match the needs of both landlord and tenant.

Figure 14
Rental agreement acreage by landlord-ownership arrangement



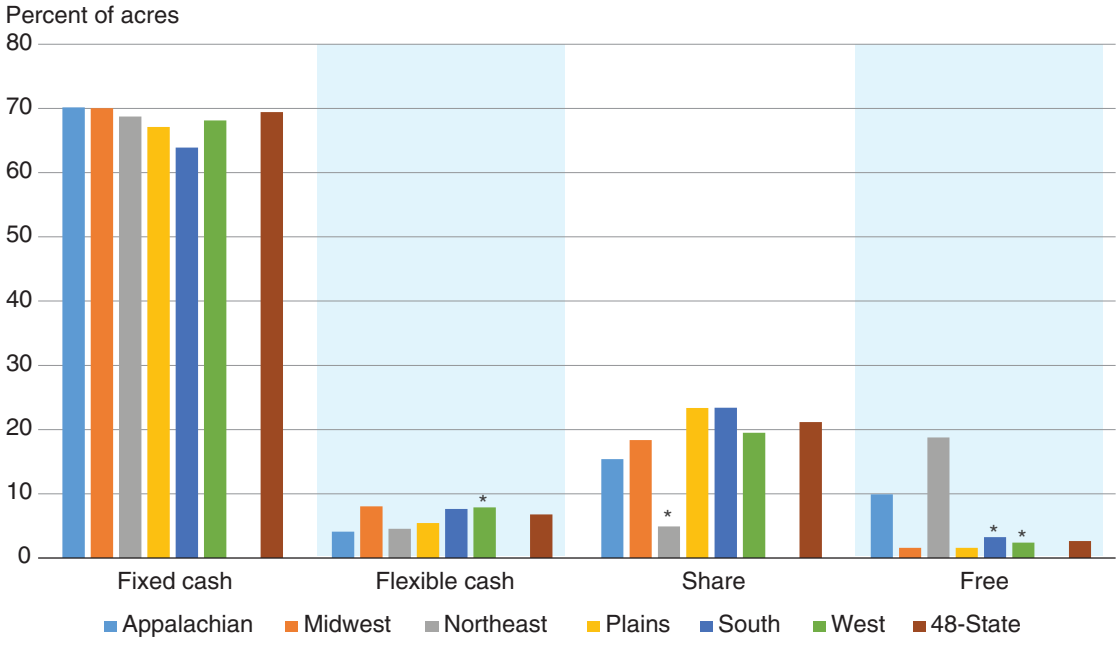
Note: Individual, partnership, corporation, and trust are subcategories of the non-operator landlord class. Due to confidentiality concerns, the fifth non-operator landlord category, "Other," was not included in this chart. In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

The regional distribution of lease contracts shown in figure 15 illustrates that fixed-cash agreements are by far the most common type of rental contract in all areas of the United States.

Share agreements are much less common in the Northeast than in other regions, which makes sense given that it is an area with many small-scale farms where the potential benefits to landlords of engaging in a share contract would be minimal. Farmland in the Northeast is also more likely to be rented for free. The Midwest, South, and West regions all have marginally higher rates of flexible-lease contract use compared to the rest of the county.[6]

More pronounced patterns in lease types are found when we compare by farm operation characteristics rather than landlord characteristics. Regional variation in rental agreements reflects the underlying variation by farm types and production specialties (not shown). Crop farms are more likely to use share leases than livestock farms; however, there is a great deal of variation among specialties. In 2014, farms that specialized in wheat, rice, and cotton had over 40 percent of rented acres in share leases, while soybean, corn and other general cash-grain-specialized farms had around a quarter of their rented acres in share-based rental agreements. Conversely, cattle, poultry, and dairy specialization farms had only 2 to 3 percent of rented acres in share agreements. Numerous factors impact the nature of rental agreements, including management and bidding flexibility for the tenant, the stability of returns and risk exposure for landlords, and the relationship between tenancy and various Government programs. These factors combine in various ways across commodity specializations and geographic regions (Paulson, 2012).

Figure 15
Rental-agreement acreage by region



Note: In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

[6]Note, however, that caution should be exercised when interpreting the West and South flexible-lease use estimates, as they have relatively large confidence intervals. The Midwest estimate is significantly higher than that of the Appalachian, Plains, and Northeast, but indistinguishable from the West and South estimates.

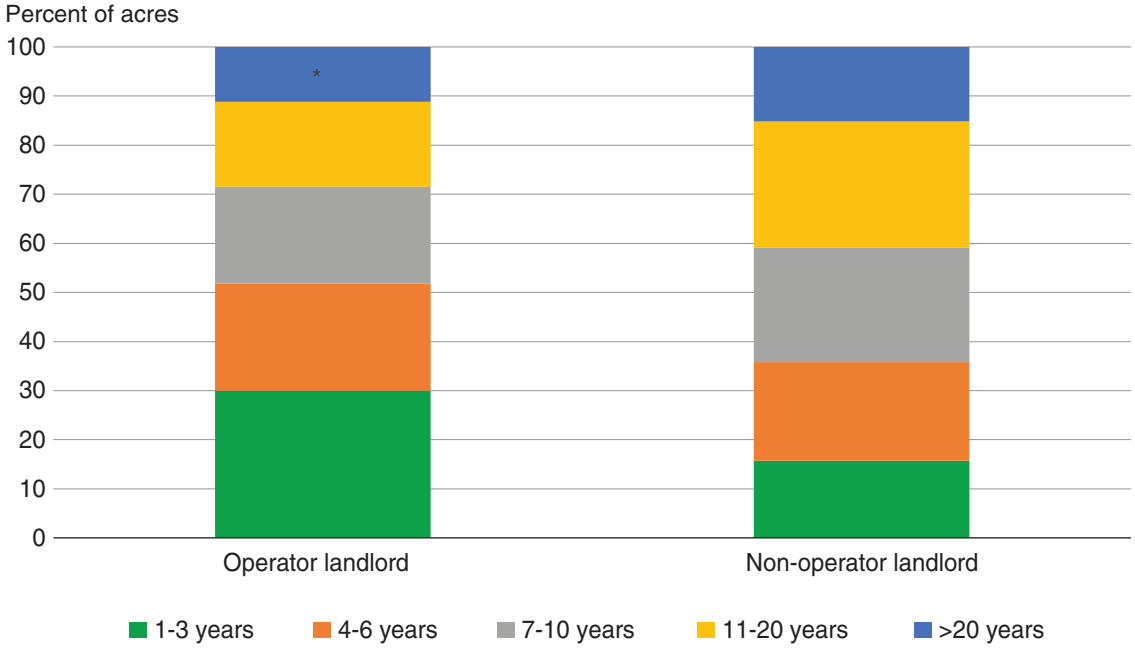
Free lease agreements are more commonly found on retirement farms, off-farm-occupation farms, and low-sales farming occupation farms. Just under 20 percent of the rented acres in those three farm typologies are rented free of charge, compared to an average 6 percent of all rented land. This likely reflects the more casual nature of these farm operations and may explain the higher rate of free-rental agreements in the Northeast, since it has one of the highest regional shares (in total rented acres) of retirement, off-farm-occupation, and low-sales farm operations.

Lease Duration and Renewal Frequency

Seventy percent of acres rented from operator landlords have been rented to the same tenant for over 3 years, and 28 percent for over 10 years (fig. 16). Non-operator landlords tend to have even more durable relationships than operator landlords; 84 percent of acres have been rented to the same tenant for over 3 years and 41 percent or over 10 years. Lease duration can be important in analyzing farmland rental markets in terms of land accessibility. If most relationships are longstanding, as figure 16 suggests, it may be difficult for prospective farm operators to find a landlord from whom they may rent land. However, the length of the relationship between a landlord and tenant is just one way to view rental contract duration. Another is how frequently the contracts between landlords and tenants are renewed or renegotiated.

Although the majority of tenant-landlord relationships have lasted several years, table 3 illustrates that a majority of acres are accounted for by lease agreements that are negotiated every year. In total, 57 percent of rented acres, accounting for 70 percent of lease agreements, are renewed annually. Negotiating every year gives both parties the option to adjust the terms of a lease in response to economic and production conditions. For example, annual renewal provides the option

Figure 16
Percentage of rented acres by number of years rented to current tenant



Note: In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

Table 3

Frequency of lease renewal as a percentage of acres and agreements

	Acres (percent)			
	Annually	Every 2 years	Every 3 years	Every 4 or more years
All	57	4	11	28
Operator landlord	63	4	15	18
Non-operator landlord	56	4	10	30
Individual	56	3	10	31
Partnership	63	3*	9	25
Corporation	46	4*	14	36*
Trust	59	3	11	27
Other	47	3*	8	42
	Agreements (percent)			
	Annually	Every 2 years	Every 3 years	Every 4 or more years
All	70	3	8	20
Operator landlord	73	3	9	15
Non-operator landlord	69	3	8	20
Individual	71	3	7	20
Partnership	70	3#	6#	21#
Corporation	65	4*	11	20
Trust	68	3	10	20
Other	54	4*	8*	34

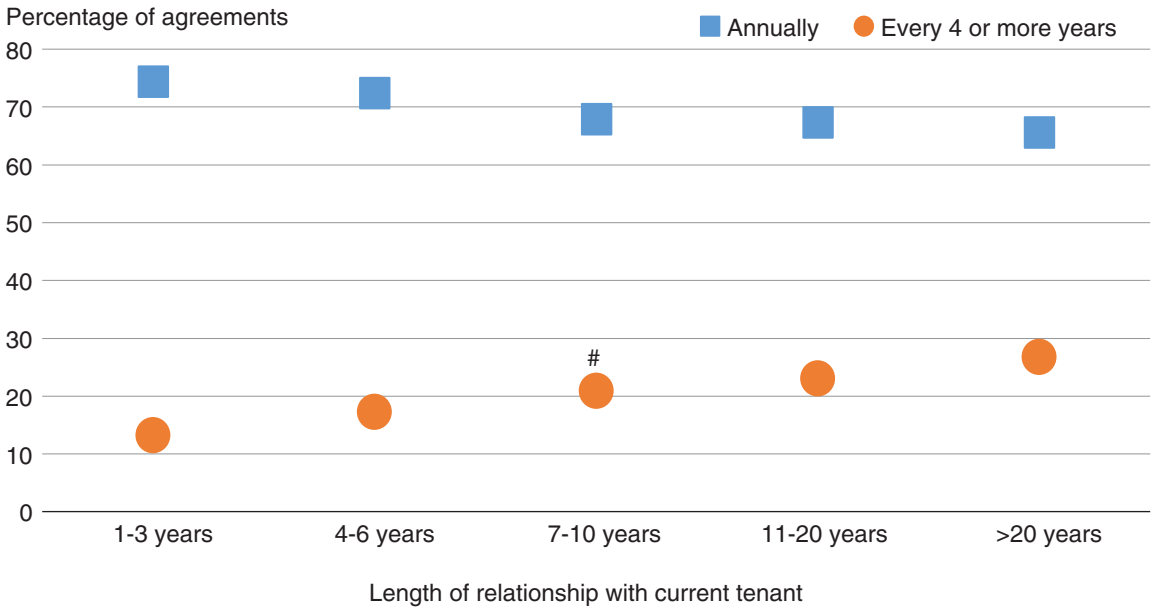
Note: Note that percentages in the table may not sum to 100 due to rounding. In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.

Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

to adjust the rental rate so that it remains closer to market value, protecting both the landlord and tenant. Although there are transaction costs associated with annual renegotiation, involved parties may find this to be a simpler method for adjusting to market conditions when the alternative is engaging in more complicated flexible-lease contract structures. However, the prevalence of annual lease renewals, in conjunction with the finding that most tenants rent from multiple landlords, emphasizes the time and effort potentially expended by many operators in renegotiating contracts with their landlords.

The duration of a landlord-tenant relationship and the frequency with which the lease is renewed are related. Longer term leases allow tenant farmers to plan over a longer span, increasing their incentives to manage the land for future productivity. Longer leases also enable landlords and tenants to build a long-term relationship characterized by mutual trust, ease of communication, and goodwill (Cox, 2010). Conversely, long-term leases can be of concern in periods of volatile market conditions or in situations where trust has not yet been established between landlords and tenants. Figure 17 shows a positive correlation between the duration of a landlord-tenant relationship and the infrequency with which the associated lease is renegotiated. This suggests that short-term lease renewals

Figure 17
Long-term tenant-landlord relationships are more likely to have less-frequent lease renewals



Note: In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

are used for less mature relationships. Naturally, short-term leases can evolve into long-term leases over time, and they can provide important flexibility while relationships mature and mutual trust is built. In addition, landowner concerns over sustainable management and production practices, for example, can be mitigated through lease contract terms.

The empirical analysis provides evidence of long-term lease stability in situations with annual renewal, which has significant ramifications for access to land. Even if a significant share of land is rented, farmers may not be able to rent additional land, since rental markets tend to be thin. This also has implications for conservation-practice adoption. Prior evidence indicates that some renters do not have incentives to invest in management or conservation practices that provide long-term benefits (e.g., Soule et al., 2000). In light of the results presented here, however, tenants may have greater long-term conservation incentives than previously thought if tenant-landlord relationships have lasted many years. Thus, these results highlight the importance of accounting for landlord-tenant relationship length in future analyses of conservation-practice adoption.

Renting Land to Relatives

Many observers of farmland markets use anecdotes of familial relationships to illustrate the changing the nature of rental agreements, which can have repercussions for the broader agricultural land market. Tenants and landlords were related on one-third of rented acres in 2014. The share of acreage rented to relatives by operator landlords was smaller than that for non-operator landlords. Among non-operators, women were more likely than men to rent to relatives (46 percent versus 29 percent), though the difference is not statistically significant (p=0.13).

Approximately half of all free leases involved relatives. Additionally, relatives tended to use fixed-cash leases at a much lower rate (32 percent) than the national average (69 percent). This finding aligns with recent evidence from Canada that fixed-cash leases occur less frequently when tenants and landlords are related (Bryan et al., 2015). Rental agreements between related parties were also more likely to be renewed less frequently (38 percent every 4 or more years) than acres rented between unrelated parties (22 percent every 4 or more years).

Landlord Input to Farm Management Decisions on Rented Land Varies by Type of Decision

A fundamental aspect of farmland ownership and tenure is how decisionmaking responsibilities on rented land are divided between landlords and tenants. As noted earlier, prior research has provided evidence suggesting that the decisionmaking process of tenants is relatively more nearsighted than that of landowners (e.g., Soule et al., 2000; Sklenicka et al., 2015), though the evidence remains mixed (Knowler and Bradshaw, 2007). Tenants are mainly concerned with short-term financial and production aspects of farm management, for example, annual profits and yields. Landlords, in contrast, have a vested interest in the long-term productivity and earning potential of the land and would be expected to have more of a stake in, among other things, land values, soil health, and nonagricultural-use values. Research findings on tenant versus landlord priorities are mixed. In a national study of soybean fields, Soule et al. (2000) found that fields rented under fixed-cash agreements were less likely to be associated with conservation practices that provide benefits over the long term. In a more recent study, Varble et al. (2016) find that Iowa farmers who own all the land they operate are more likely to rotate crops but less likely than full tenants and part owners to use conservation tillage. However, a survey of findings conducted by Knowler and Bradshaw (2007) found that an equal number of studies found evidence in support for and against the notion that conservation practices are more likely to be adopted on owner-operated land. Overall, it remains an open question as to whether the type of stakeholder who bears decisionmaking responsibility on rented land (non-operator owner, tenant, etc.) has any generalizable implications for conservation policy design.

Table 4 delineates the decisionmaking arrangements between tenants and landlords by non-operator and operator landlords. Both non-operator and operator landlords report that tenants make decisions on the majority of the land they rent out for nearly all of the practices considered in the survey, and tenants are particularly involved in production decisions, such as fertilizer and chemical use, harvesting, crop and livestock choices, and cultivation practices.[7] Decisionmaking strictly by the tenant, however, is generally less common on land rented from operators, which is intuitive since operator landlords, by definition, are still actively engaged in farming a portion of the land they own and may be more likely than non-operator landlords to possess the knowledge and expertise required to make farm management decisions.[8]

The division of operation-level decisionmaking is also dependent on the type of lease arrangement. Specifically, across all the practices considered in the TOTAL survey, tenants had sole decisionmaking responsibility on a smaller share of acres rented when share agreements were in place (not shown in table 4). This is intuitive, given that, under a share agreement, the rental payment received by landlords is directly tied to production, bolstering the incentive landlords have to be actively involved in managing their land.

[7]The lone exception is permanent conservation-practice decisionmaking on land owned by operator landlords, where no statistically significant difference is found between the tenant and landlord categories (p=0.17).

[8]The exceptions, those where no statistically significant difference between operator and non-operator landlords in tenant decisionmaking is found, are the marketing (p=0.36) and crop insurance (p=0.87) categories.

Table 4
Division of decisionmaking

	Non-operator landlords			
	Tenant	Landlord	Together	Separate
Fertilizers and chemicals	92.8	1.8	5.1	0.3*
Cultivation practices	90.9	1.5	7.4	0.1*
Crop livestock choice	93.3	1.2	5.4	0.2*
Harvesting	95.2	1.3	3.4*	0.1*
Marketing	86.6	2.5	5.8	5.1
Crop insurance	83	3.2	8	5.7
Permanent conservation	63.5	10.5	25.2	0.8
One-season conservation	82	4.6	13	0.4*
Government program	69.9	7	20.5	2.6
	Operator landlords			
	Tenant	Landlord	Together	Separate
Fertilizers and chemicals	83.4	5.6#	10.2	0.9#
Cultivation practices	82.9	4.7#	11.7	0.7#
Crop livestock choice	86	3.9#	9.5	0.6#
Harvesting	89.2	4.2#	6	0.6#
Marketing	83.7	3.5	8*	4.8
Crop insurance	82.5	2.8	9.1	5.6*
Permanent conservation	43.3	28.1	27.4	1.2*
One-season conservation	66.6	14.9*	18.2	0.2*
Government program	57.5	18.2*	19.9	4.4*

Note: The percentages in the table represent the percentage of total rented acres for the landlords who responded to the decision section of the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) questionnaire. The "Tenant" and "Landlord" categories denote situations where decisionmaking responsibility is solely in the hands of tenants or landlords, respectively. The "Together" category is used to describe situations where tenants and landlords come to mutual agreement regarding a practice. The "Separate" category represents cases where, for example, the landlord has decisionmaking responsibility on a portion of land and tenants make decisions on the remainder. The permanent conservation-practice category includes terracing, grassed waterways, and other practices that would likely constitute long-term changes to the land in a farm operation. One-season conservation practices include reduced tillage, no tillage, cover cropping, and other practices that may be varied from season to season. Government programs accounted for in the Government program participation category include both commodity and conservation programs. In all figures based on TOTAL survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.

Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

As noted earlier, one area of decisionmaking that has attracted attention concerns how enrollment in conservation programs differs on rented land and owner-operated land. Data from the TOTAL survey present this notion from a different angle. Compared to other aspects of farm management and production, landlords are generally more likely to have sole decisionmaking responsibility on permanent conservation practices. On land under non-operator ownership, tenants make the decisions on permanent conservation practices on 64 percent of rented acres. However, this figure drops to 43 percent on land rented from a farm operator, reflecting the fact the operator landlords, in general, are more involved with farm management decisions. In contrast, for one-season conservation practices, such as using conservation tillage or planting cover crops, tenants tend to have more leeway, making their own decisions on 82 percent of land owned by non-operators and 67 percent of land owned by operators.

Landlords have greater influence on decisions to participate in Government programs. Landlords themselves make Government program participation decisions for 7 percent of rented farmland under non-operator ownership and 18 percent of rented farmland owned by operators, portions that increase to 30 percent and 42 percent if joint and separate decisions are considered. This degree of landlord involvement is to be expected, since enrollment in some Government-administered conservation programs, such as the Conservation Reserve Program (CRP), may require considerable foresight; the contract lengths can range from 10 to 15 years and involve long-term interest in the rented farmland. Similar to the findings for permanent conservation practices, research suggests that owner-operated land is more likely to be enrolled in the CRP (Lambert et al., 2007), further bolstering the notion that landlords have more sway in Government program participation decisions.[9]

[9]Note, however, that the TOTAL survey did not distinguish between whole-field and partial-field CRP enrollment, which is likely an important distinction in terms of how renters and owner-operators participate in the CRP.

Methods of Land Acquisitions and Transfers

Land can be acquired in a number of ways, including sales transactions, gifts, and inheritances. Looking at how different types of landowners acquired their land helps form a picture of how agricultural land has been transferred in the past and how existing farm operations were formed.

Arms-length purchases are a traditional method of acquiring land and are particularly important for those without family or personal connections to agricultural landowners. In 2014, operating landowners had purchased 50 percent of their land from nonrelatives and 4 percent in an auction (fig. 18). Another 27 percent of land owned by operators was inherited or received as a gift. In contrast, non-operator landlords acquired 30 percent of their land in purchases from nonrelatives and 2 percent in an auction. The majority of non-operator land, 54 percent, was inherited or received as a gift. Since the vast majority of farming operations are family farms, it is not surprising that operator landowners (18 percent) are more likely than non-operators (11 percent) to have purchased land from a relative, as this might indicate that land is being sold from one family generation to the next. Further, non-operators identifying with having "never farmed," who account for 45 percent of the principal landlords in individual and partnership arrangements, are less likely to have purchased their land and more likely to have inherited or received their land as a gift; over two-thirds of their land was acquired this way. This implies that even though many non-operator landlords have had no direct experience with farming, they may still have a family or personal relationship to a farm operation.

Figure 18
Non-operators were more likely than operators to inherit land

Note: In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

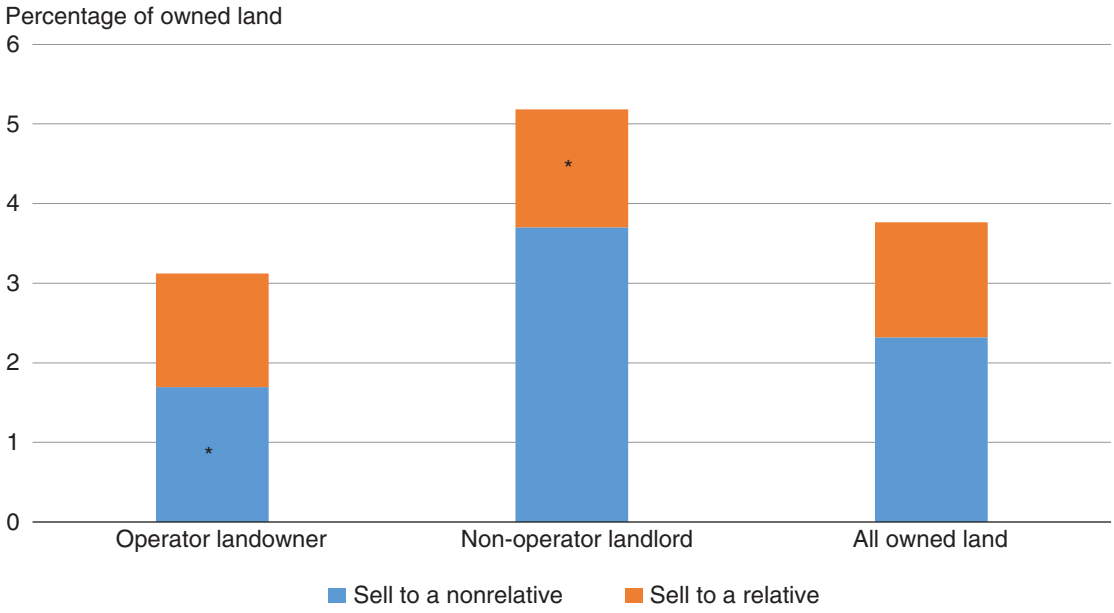
Land Transfers

The relatively advanced age of the U.S. farming population—about a third of principal farm operators in 2014 were at least age 65, compared with 12 percent of self-employed workers in nonagricultural businesses—has sparked interest in the manner in which land will be transferred to the next generation of farm operators. While it is well known that the farmland market is thin in that only a small fraction of total farmland changes hands annually, little is known about how landowners plan to transfer their land in the future. The TOTAL survey put land transfers into several broad categories: sell to a relative, sell to a nonrelative, gift, place in a trust, or include in a will. Understanding how current landowners plan to transfer ownership will help form a picture of the rate and mechanisms for transfer, which have implications for land accessibility in the future.

In 2014, less than 4 percent of all land in farms was anticipated to be sold over the next 5 years (fig. 19), 38 percent of which was expected to be a sale between relatives. This highlights the limited amount of farmland expected to be on the competitive market in that 5-year period—21 million acres, or 2.3 percent of land in farms—and illustrates the challenges of accessing land through an open-market acquisition.

The TOTAL estimates shown here describe current owners' *anticipated* transfer plans and are likely a conservative estimate of land to be placed for sale. For example, although an initial transfer may not take place through a sale, additional sales are likely to occur as land transferred through trusts, wills, or gifts is sold when the new owner is not interested in retaining an ownership interest. Unanticipated events or changed circumstances could result in additional sales from landowners who indicated that they have no plans to transfer the land in the next 5 years. Conversely, the reported estimates could overstate sales, and thus land availability, if unanticipated events or market conditions cause landowners to decide not to transfer their land in the next 5 years.

Figure 19
Anticipated land sales from 2015-2019



Note: In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

For context, a review of Illinois transaction data suggest total farmland turnover through sales averaged about 2 percent per year over the 2000-2011 period, with less than 1 percent per year between nonrelated parties (Sherrick, 2012). Farmland markets are far thinner than the residential housing market. For comparison, about 4 percent of all U.S. housing units were sold in 2013 (U.S. Census Bureau, 2014 and National Association of Realtors, 2015).[10]

Farmland may be transferred by methods other than sales (table 5). In fact, one of the most popular methods of anticipated transfers in the next 5 years is placing or keeping land in trusts. The use of a trust as a means to transfer land is often considered a tool for estate planning. Although it varies on a case-by-case basis, compared to a will, a trust is typically more complex and can sometimes be costlier to establish and manage (see box titled "Trust as an ownership arrangement and transfer method," on page 21). For landowners who plan to transfer any land through a trust, the data reveal that the average acreage planned to be transferred via trust was 420 acres, while for those planning to transfer any land through a will, the average planned transfer acreage was 47 acres. Thus, one explanation for why operating landowners are more likely to use trusts than non-operators is that a large majority of non-operators own less than 180 acres (fig. 10).

Table 5
Land expected to undergo ownership transfer in next 5 years, as of 2014

	Operator landowner		Non-operator landlord		48-State	
	Acres (1,000s)	*Percent*	*Acres (1,000s)*	*Percent*	*Acres (1,000s)*	*Percent*
Put in Trust[a]	27,399	48	7,094	20	34,494	37
Sell to a nonrelative	10,648*	19	10,490	29	21,139	23
Will[b]	5,432	10	5817	16	11,248	12
Sell to a relative	8,949	16	4,207*	12*	13,156	14
Gift	4,559	8	7,992#	22#	12,551*	13*
Other (non-operator only)	-	-	473*	1*	473*	1*
Total 5 yr. transfer	56,987	100	36,073	100	93,060	100
Owned land	627,602	-	283,448	-	911,050	-
Percent of owned land to transfer	-	9	-	13	-	10

[a]Estimate is for land put in a trust only. For operator landowners, land already in-trust was estimated based on the ownership structure of the operation since the ownership structure of the land is unknown.
[b]Estimate is based on the life expectancy of the owners using the Social Security Administration Actuarial Life Table, 2011. For operator landowners, age of the landowner was assumed to be that of the principal operator since the ownership structure of the land is unknown.
Note: In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.

Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

[10]Although farmland markets are thin, survey results from Iowa (Duffy and Johanns, 2012) indicate that the bulk of farmland purchases are made by farmers, suggesting that the land will remain in agricultural production. However, Iowa is a relatively rural State; in States more heavily influenced by population and urbanization pressure (e.g., in the Northeast), there may be a greater proportion of farmland purchases by prospective land developers.

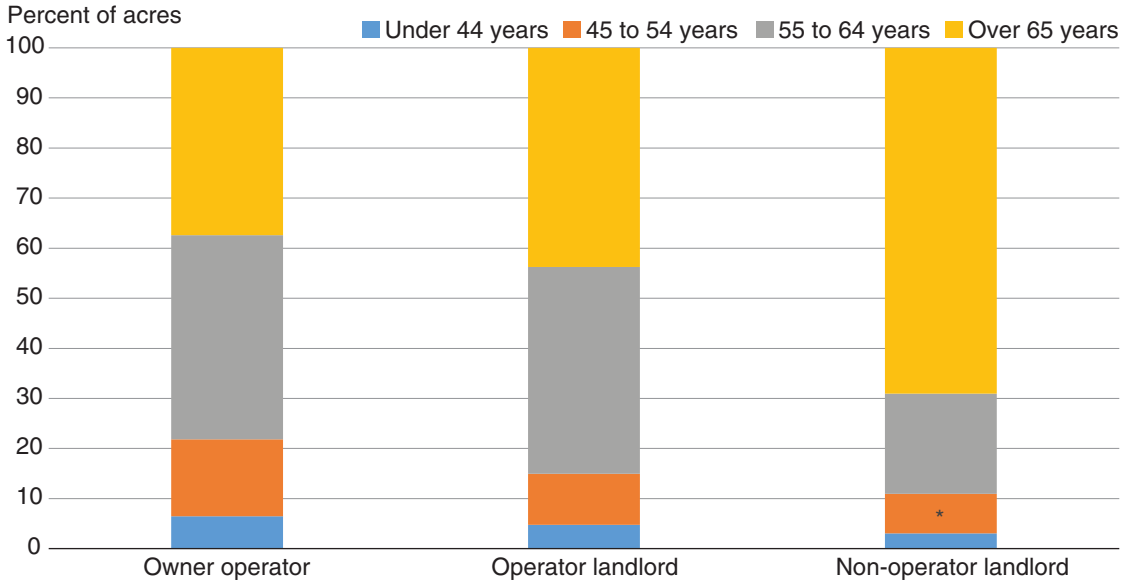
Other methods of transfer consistent with farm business-and-estate planning include gifts and wills. Unlike a trust, in which ownership of the property may be transferred when the trust is created, in a will the transfer takes place at the death of the landowner. Thus, while it is estimated that the transfer of 57 million acres is planned through putting them or keeping them in a will, based on the life expectancy of the owners, only about 20 percent of this land is expected to actually be transferred in the next 5 years. Gifts, where ownership is transferred at the time the gift is made, are a less popular method of transfer. However, non-operating landowners plan on gifting farmland at a much higher rate than operating landowners.

For those landowners who plan to transfer any of their land in the next 5 years, a notable finding is that the median percentage of land expected to be transferred is 100 percent for both operator and non-operator landowners. The mean percentage of land anticipated to be transferred by type of operator, on the other hand, is 72 percent for operator and 84 percent for non-operator landowners, indicating that the distribution of planned land transfers is left-skewed. Put differently, the majority of landowners who plan to transfer ownership of land plan to transfer all of their land at once, as opposed to transferring only a portion.

Farmers Approaching Retirement Plan To Transfer a Small Share of Their Land

Given its implications for future land transfers, the distribution of U.S. farmland owners across age groups is of interest to policymakers wishing to ensure the continued stability of the farm sector. Figure 20 illustrates how land ownership is concentrated among owner-operators and landlords.

Figure 20
Land ownership is concentrated among older operators and landlords



Note: To maintain consistency with the demographic information available for landlords, the leftmost (owner operator) and center (operator landlord) bars report the principal operator age for only the operations owned by individuals or partnerships that rented out land. In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

With 69 percent of land owned by people over 65, non-operator landlords tend to be older than both owner-operators and operator landlords. Nearly 80 percent of owner-operated land, however, is owned by farmers who are older than 55. Part of the reason for the relatively advanced age of U.S. owner-operators is the capital-intensive nature of running a farm operation; it can take time for farmers to build up the financial capacity to acquire land by purchasing it (Zulauf, 2013).

Retired and retiring farm operators account for a quarter of the principal operators of farm operations who own land. Their succession decisions and retirement plans are of considerable importance to the farming community and the future structure of the agricultural sector. Continuity of family farms hinges on successful intergenerational transfer following the retirement of a farm operator. However, these plans are also important to those who are seeking access to land either through purchase or rent. Land transfer plans are especially relevant for farmers who are planning to retire within the next 5 years (Mishra et al, 2002). For operators, the age pattern shown in figure 20 corroborates the farm-management lifecycle rationale described earlier in the report (fig. 7). As farmers age and approach retirement, they are increasingly more likely to own the land they operate. Also, as noted, 38 percent of non-operator principal landlords classify themselves as retired farmers, indicating that former operators supply a large share of farmland available for rent.

In considering retirement, farm households must take into account a number of factors, including income tax laws, estate tax laws, their ability to rent out land, and the interest of heirs in continuing the farming operation. Federal income tax laws allow heirs to sell inherited property without paying tax on realized gains, whereas the owner from whom the land would be inherited would be required to pay tax on any appreciation in land value since the original purchase or acquisition (McEowen and Harl, 2014). This may encourage older farmers to hold onto their land and rent it out for retirement income, allowing heirs to make the decision to sell and thus avoiding paying taxes on any realized gains. Federal estate tax policies that allow larger amounts of property to be transferred at death free of any estate tax further reinforce this incentive. In addition, the income from renting land may also serve as an incentive to hold on to it, especially if the farmland property represents a large share of accumulated assets.

Farm operators who plan to retire from farming in the next 5 years account for 14 percent of owner-operated land and 23 percent of land owned by operator landlords. And while they are more likely than other farm operators to be planning to transfer their land in the next 5 years, as a whole, those in this group plan to transfer only 23 percent of their owned land. Of the land to transfer, they plan to sell 25 percent to a nonrelative. Another 29 percent is expected to be sold to a relative. The land that retiring farmers do not plan to transfer could remain in their operation as a retirement farm, be turned over to others to operate, or be converted to other uses. It could also be rented out to provide a source of retirement income as retired farmers transition to new roles as non-operator landlords.

Female Landlords[11]

The TOTAL survey provides demographic information on non-operators for individuals and principal partners (see section on TOTAL Survey, pp. 12-14). For farm operators, demographic characteristics are also available for the principal operator, who it is assumed also acts as landlord in individual or partnership-structured operations. One demographic characteristic that we are able to track is the gender of the principal landlord. Some hurdles facing female agricultural landlords have been documented, including a reduced propensity of male tenants to adopt female landlords' proposed conservation practices and female landlords' less frequent interaction with local extension experts (Petrzelka and Sorensen, 2014). Given the expansive role of land ownership and landlord-tenant relations in the agricultural economy, an analysis of how male and female landlords differ provides new insights to policymakers aiming to level the playing field across different groups of agricultural stakeholders.

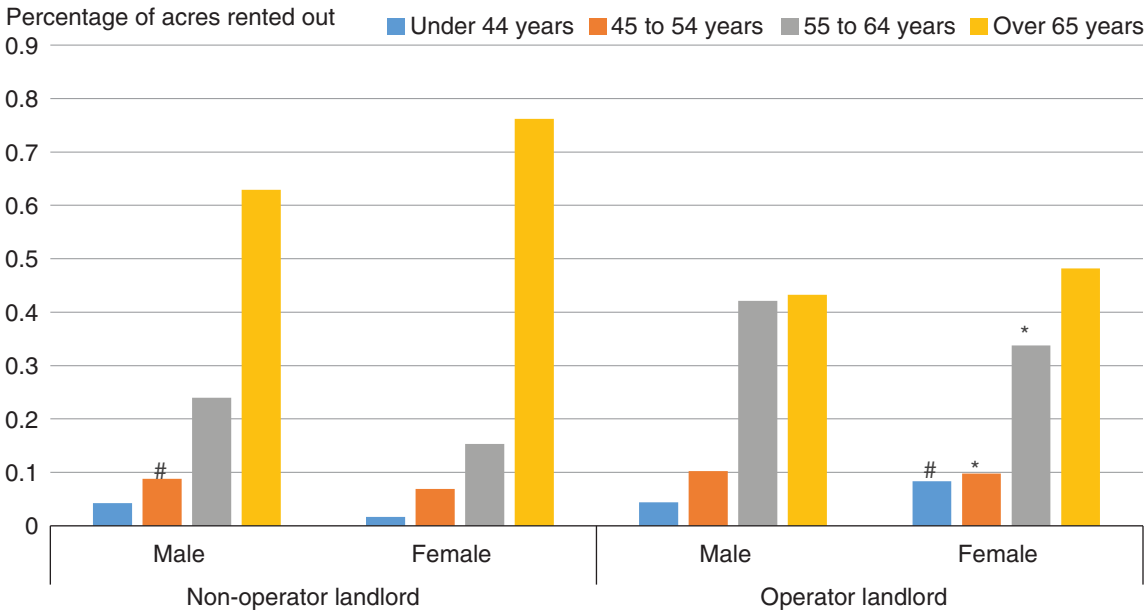
In terms of farmland rented out, the difference in gender composition between operators and non-operators is large. Nearly 90 percent of land rented out by operator landlords is from operations with a male principal operator. This reflects the underlying distribution of male/female operators, in which 90 percent of owner-operated land is associated with a male principal operator. In addition, most female-operated farms are very small (Hoppe and Korb, 2013), and small farm operations are much less likely to rent land out to others. When considering non-operator landlord entities, the portion of acres rented out by male landlords, who represent 63 percent of non-operator landlords, drops to just 54 percent. Since only 37 percent of non-operator principal landlords are female, this implies that females, on average, own more acres to rent out than their male counterparts.

Although the vast majority of principal farm operators are male (88 percent), male and female non-operator landlords are similar in terms of whether they consider themselves to be retired from farming (38 percent of males, 34 percent of females; $p=0.47$). Fifty-two percent of female non-operator landlords report to have never farmed, which is not statistically different ($p=0.47$) from the 41 percent of male non-operators who have no prior farming experience.

Land ownership is positively correlated with age, especially among female landlords. Specifically, over 76 percent of land with a female non-operator landlord is controlled by someone older than 65, while this holds for just 63 percent of land owned by male non-operators (fig. 21). Compared to females, a greater share of rented acres comes from male non-operators in the 55 to 64 age category. No statistical difference is found between male and female non-operators in the 45-54 age grouping ($p=0.61$), but a greater share of land rented out by male non-operators does fall into the "Under 44" category. While there are some meaningful gender differences in acreage rented out by non-operator landlords, none of the gender-by-age-group differences are statistically significant for operator landlords.

[11]Note that the survey does not elicit information from spouses who are not the primary operator, so it is not possible to tell with certainty whether spouses and primary operators share similar characteristics.

Figure 21
Comparison of landlord age by gender

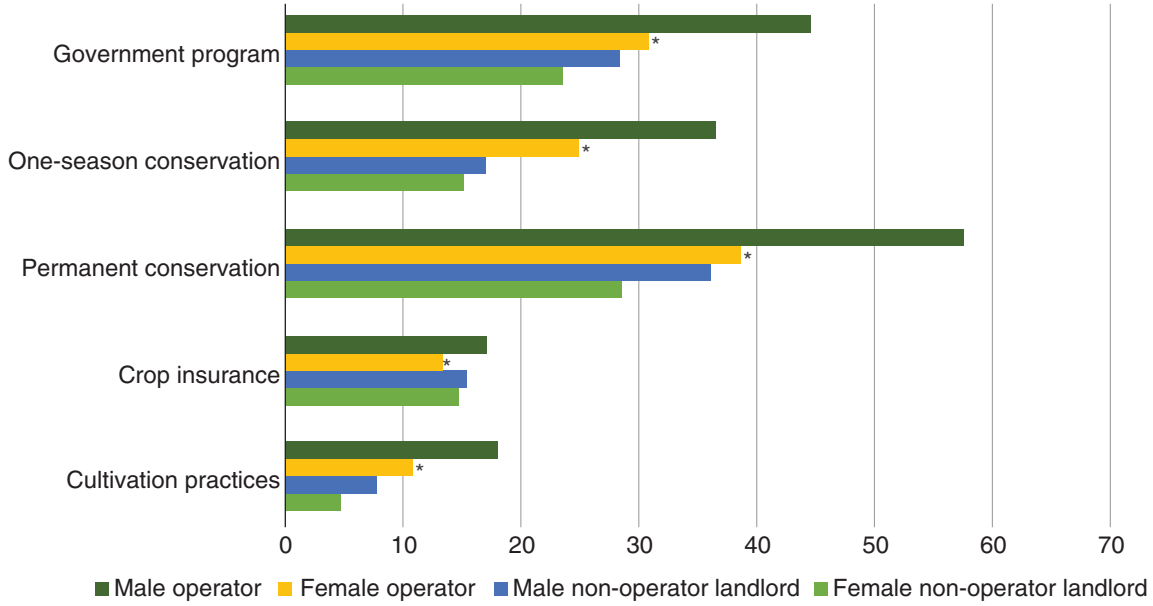


Note: In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

With regard to landlord-tenant decisionmaking, the TOTAL survey provides some evidence that decisions on land owned by female landlords are more likely to be made by the tenant. Figure 22 illustrates landlord involvement in decisionmaking across different gender and owner groups, where involvement is defined as a situation where the tenant does not have sole decisionmaking responsibility. For non-operators, as a share of rented acres, male landlords tend to be more involved than female landlords in decisions regarding cultivation and permanent conservation practices. Even though the share of acres on which male landlords are involved in decisions is greater than that for females, the non-operator gender differences for crop insurance ($p=0.70$), one-season conservation practices ($p=0.46$), and Government program participation ($p=0.12$) are not statistically significant. Although a similar pattern appears for operator landlords, where male landlords tend to have greater involvement in decisionmaking, none of the differences are statistically significant.

Figure 22

Female non-operator landlords are less likely than their male counterparts to make or participate in management decisions



Note: Includes landlords who indicated they made the decisions either exclusively or jointly with their tenant. In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

Programs and Policies To Promote Land Accessibility

Access to land is a challenge facing agricultural producers, particularly beginning farmers and ranchers (Ahearn and Newton, 2009). A number of programs exist to help both beginning and established farmers with accessing and affording farmland rentals and purchases.

At the Federal level, USDA addresses affordability of land for beginning farmers and ranchers primarily through loans from the Farm Service Agency (FSA) and the independent Farm Credit System (FCS). While established farmers are also eligible for these loans, the FSA loan programs have provisions to target beginning and socially disadvantaged farmers who are unable to obtain loans from other lenders by setting aside a portion of loan program funds for this group (USDA-FSA, 2012).[12] FSA also provides land contract guarantees to retiring farmers who enter into rent-to-own land agreements with new or beginning farmers (USDA-FSA, 2013). The retiring farmer retains interest in the property until the completion of the contract, while the new farmer gradually purchases interest in the land. FSA guarantees the payments for up to 10 years. The program offers the retiring farmers protection on their financial interests, while giving the beginning farmer access to land at a reduced interest rate and with a lower downpayment than conventional real estate loans. In addition, FSA has recently made a number of expansions to its existing loan programs. Of particular note is the fact that, as of 2016, FSA has started a Direct Farm Ownership Microloans program geared toward providing access to land for beginning farmers and ranchers.[13]

Another policy targeting beginning farmers that is designed to encourage long-term lease or land transfer agreements is USDA's Transition Incentives Program (TIP).[14] The TIP provides financial incentives to landowners to enter into leases of 5 years or more with (or land sales to) beginning farmers and ranchers. The program pertains specifically to land in expiring Conservation Reserve Program (CRP) contracts and requires new landowners or tenants to use sustainable grazing or farming methods. The TIP is designed to encourage land sales or long-term lease agreements between retiring and beginning farmers by providing two additional annual rental payments to participating retiring farmers. Numerous State programs also exist to encourage the renting of land to beginning farmers. For example, in Iowa, the Agricultural Assets Transfer Tax Credit allows agricultural asset owners to earn tax credits for renting their land and other assets to beginning farmers.[15]

Many State programs and nongovernmental organizations also exist to help match landowners to farmers. Examples include Nebraska Connections, California FarmLink, New England Farmland Finder, and Florida Farm Finder.[16] While these organizations vary in size and scope, all have

[12]FSA defines socially disadvantaged farmers as those belonging to any of the following groups: American Indian or Alaskan Native, Asian, Black or African American, Native Hawaiian or other Pacific Islander, or Hispanic. Female and beginning farm operators are also eligible for FSA loan programs. Beginning farmers and ranchers are defined as those who have been farming or ranching for less than 10 years (USDA-FSA, 2012).

[13]For more information on the FSA's Direct Farm Ownership Microloans program, see: http://www.fsa.usda.gov/programs-and-services/farm-loan-programs/farm-ownership-loans/index.

[14]Additional information on the TIP may be found at: https://www.fsa.usda.gov/programs-and-services/conservation-programs/transition-incentives/index.

[15]More information is available from the Iowa Finance Authority: http://iowafinanceauthority.gov/Public/Pages/PC204LN48.

[16]More information on these and other similar programs is available from the Farmland Information Center: http://www.farmlandinfo.org/special-collections/4439/field_contact_category/farm-link-programs-4348.

programs geared towards facilitating relationships between farmers looking for land to farm and landowners looking to rent or sell their land.

The Nation's network of land trusts also aims to help with both the availability and affordability of farmland. In some parts of the country, farmland availability is limited not just by the high demand for land but also by residential development or other nonagricultural uses. Deed restrictions limiting the development or use of properties are one means to affect both the availability and affordability of agricultural land. These are often enacted through a conservation easement sold or donated to a nonprofit organization, such as a land trust, or to State or Federal programs such as farmland preservation programs. Conservation easements alter the property rights associated with the land by removing the development rights from the remaining rights, including agricultural use, of the land. The intention is twofold. First, removing the development rights ensures the land will not be developed and therefore will remain available for agricultural use. Second, removing a portion of the rights—the right to develop the property—means the remaining land and rights (largely the agricultural rights) should theoretically be closer in value to the agricultural-use value and therefore more affordable to farmers. This helps to defray the purchase cost and reduces property tax liabilities.

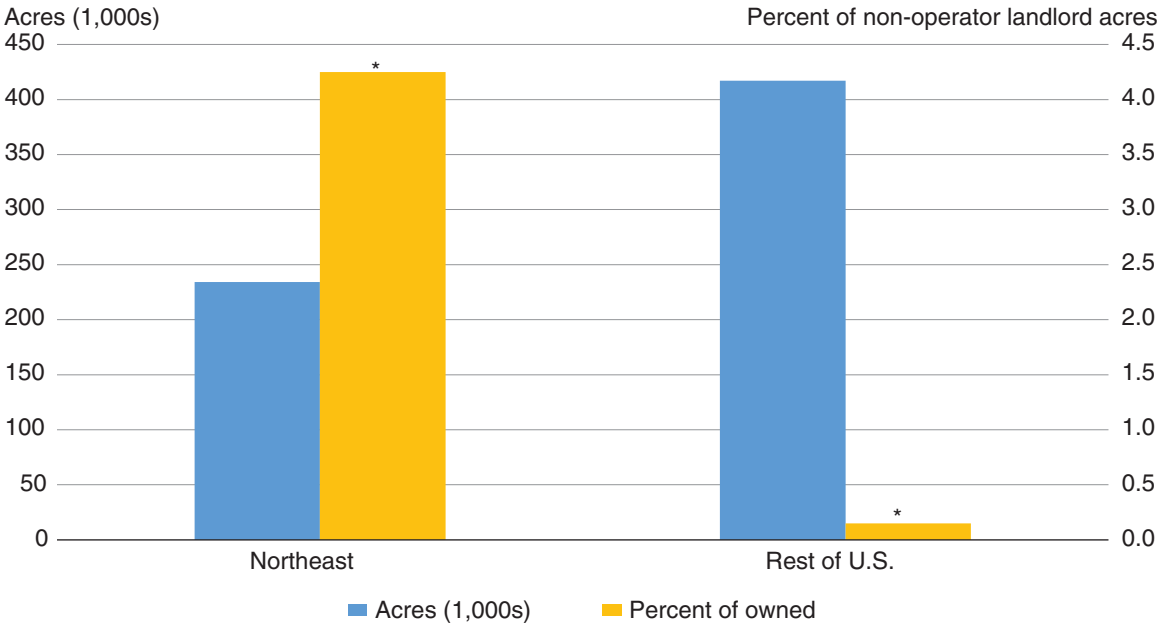
There is mixed evidence as to whether development-right purchases result in more affordable farmland when the affected properties are resold. For example, Nickerson and Lynch (2001) find no difference in sale price between properties that have conservation easements and those that do not. However, some policy responses have been developed to attempt to ensure that farmland remains available and affordable to farmers, if that is the primary intention of a program in which they are enrolled. One example is the Vermont Land Trust (VLT; www.vlt.org) program, which has a provision written into many conservation easements giving VLT right of first refusal on the resale of properties. This allows VLT to intervene if a property is potentially being sold to a nonfarmer. Such programs are most prevalent in areas where the value of farmland deviates from the implied agricultural value—largely areas with significant urban influence.

The TOTAL survey enables estimation of the number of acres that have had the development rights sold on land owned and rented out by non-operator landlords (fig. 23). The Northeast has an estimated 234 thousand acres of farmland on which development rights have been sold, or 4 percent of land owned by non-operator landlords in the region. In contrast, less than 0.5 percent of the non-operator owned land in the rest of the country is associated with sold development rights.[17] The fact that so much farmland in the Northeast has had its development potential severed is indicative of the high degree of urban influence in the region.

[17]Development rights information for individual regions other than the Northeast could not be displayed due to NASS disclosure rules concerning small sample sizes.

Figure 23

Acres of development rights sold, by region



This figure only applies to the 31% of all land in farms owned and rented out by non-operator landlords. In all figures based on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey data, a coefficient of variation (CV) between 25 and 50 is denoted with a * and a CV greater than 50 is denoted by a #.
Source: USDA, Economic Research Service and National Agricultural Statistics Service 2014 TOTAL survey.

Conclusions

The objective of this report is to provide a descriptive baseline analysis of land ownership, tenure, and transition in the U.S. agricultural sector. In accordance with this goal, the analysis has focused on several of the more salient issues related to land tenure, which include non-operator landlord prevalence, lease agreements, how decisionmaking is shared by landlords and their tenants, and the acquisition and transfer of land.

Nationally, over 60 percent of land in farms is owned by the operator, while the remainder is rented out to tenant farmers. The majority of farmland rented out is owned by non-operator landlords. However, given the relatively small holdings of many landlords, most tenants must piece together land rented from multiple landlords. In addition, a majority of leases are renewed on an annual basis. Taken together, these findings suggest that significant transaction costs may be incurred by tenants in negotiating their leases.

The relatively older age of principal operators raises questions about how land will be transferred to the next generation of agricultural landowners. The results of this analysis suggest only a small portion of current farmland is anticipated to be sold to nonrelatives over a 5-year period. However, a larger share of land is anticipated to be transferred through gifts, trusts, or wills—and some of this land may then be sold by the new owners, potentially increasing the supply of farmland available for rent or purchase. The results shown here also indicate the prevalence of long-term relationships between tenants and landlords. Further investigations of the drivers of land transfer choices and rental agreement duration are promising avenues for future research, with the potential to yield valuable information on land accessibility.

The report primarily draws on the 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey, which enables a detailed look at contemporary farmland tenure and ownership patterns in the United States, including those pertaining to non-operator landlord entities, which are not accounted for in typical USDA surveys. By introducing the TOTAL survey data and illustrating broad trends in the information it contains, we have provided a foundation for more rigorous future analyses in this subject area. These estimates provide a useful starting point for policy discussions related to current farm-sector issues, including access to land for new and beginning farmers, the aging farming population, and gender differences in farmland ownership and decisionmaking. The report also provides insight into the design of conservation programs and with whom it may be most valuable to communicate when designing new policies—either landowners or tenants—as programs and conservation goals evolve in the future.

A notable omission from this report pertains to debt and other aspects of farm finances, and more specifically, those related to land ownership. While a thorough discussion of farm financial characteristics was beyond the scope of the current analysis, it remains a critical area for future research and monitoring, one that may also be studied using data from the TOTAL survey. Given the broad nature of this report, we leave for future research more detailed statistical analyses of what drives the patterns and trends in farmland tenure and ownership that are examined here.

References

Ahearn, Mary, and Doris Newton. 2009. *Beginning Farmers and Ranchers,* EIB-53, U.S. Department of Agriculture, Economic Research Service, May.

Baldwin, Katherine, Erik Dohlman, Nathan Childs, and Linda Foreman. 2011. *Consolidation and Structural Change in the U.S. Rice Sector,* RCS-11d-01, U.S. Department of Agriculture, Economic Research Service, April.

Bryan, James, B. James Deaton, and Alfons Weersink. 2015. "Do Landlord-Tenant Relationships Influence Rental Contracts for Farmland or the Cash Rental Rate?" *Land Economics* 91(4):650-63.

Butler, B., J.H. Hewes, B.J. Dickinson, K. Andrejczyk, S.M. Butler, and M. Markowski-Lindsay. 2016. *USDA Forest Service National Woodland Owner Survey: A Technical Document Supporting the Forest Service Update of the 2010 RPA Assessment.* U.S. Department of Agriculture, Forest Service Resource Bulletin NRS-99, March 2016.

Cox, Edward. 2010. *The landowner's guide to sustainable farm leasing.* Drake University Agricultural Law Center. Des Moines, Iowa.

Duffy, Michael D., "Farmland Ownership," *Ag. Decision Maker Newsletter,* Iowa State University, December 2008, Available online: http://www.extension.iastate.edu/agdm/articles/duffy/DuffyDec08.html.

Duffy, Michael, and Ann M. Johanns. 2012 "Farm Ownership and Tenure in Iowa," *Extension and Outreach Publications,* Book 16.

Food and Agriculture Organization of the United Nations. 2002. *Land Tenure and Rural Development.* FAO Land Tenure Studies 3. Available online: ftp://ftp.fao.org/docrep/fao/005/y4307E/y4307E00.pdf

Fukunaga, K., and W.E. Huffman. 2009. "The Role of Risk and Transaction Costs in Contract Design: Evidence from Farmland Lease Contracts in U.S. Agriculture," *American Journal of Agricultural Economics* 91(1):237-49.

Hachfeld, Gary A., David B. Bau, and C. Robert Holcomb. 2013. *Estate Planning Principles.* University of Minnesota, Extension, Agricultural Business Management, July.

Hachfeld, Gary A., David B. Bau, and C. Robert Holcomb. 2014. *Revocable Living Trusts.* University of Minnesota, Extension, Agricultural Business Management, May.

Harwood, Joy, Richard Heifner, Keith Coble, Janet Perry, and Agapi Somwaru. 1999. *Managing Risk in Farming: Concepts, Research and Analysis.* Agricultural Economic Report No. 774, U.S. Department of Agriculture, Economic Research Service, March.

Hoppe, Robert A., and Penni Korb. 2013. *Characteristics of Women Farm Operators and Their Farms*, EIB-111, U.S. Department of Agriculture, Economic Research Service, April.

Hoppe, R.A., P. Korb, and D.E. Banker. 2008. *Million-Dollar Farms in the New Century*, EIB-42, U.S. Department of Agriculture, Economic Research Service, December.

Hoppe, Robert A., and James M. MacDonald. 2013. *Updating the ERS Farm Typology*, EIB-110, U.S. Department of Agriculture, Economic Research Service, April.

Kauffman, N.S. 2013. "Credit Markets and Land Ownership for Young and Beginning Farmers," *Choices* 28(2):1-5.

Kirwin, Barrett. 2009. "The Incidence of U.S. Agricultural Subsidies on Farmland Rental Rates," *Journal of Political Economy* 117(1):138-64.

Knowler, D., and B. Bradshaw. 2007. "Farmers' adoption of conservation agriculture: A review and synthesis of recent research," *Food Policy* 32:25-48.

Kula, Olaf, and Denise Rogers. 1991. *Farmland Ownership and Renting in the United States, 1987*, Staff Report No. AGES 9130, U.S. Department of Agriculture, Economic Research Service, June.

Lambert, D.M., P. Sullivan, and R Claasen. 2007. "Working Farm Participation and Acreage Enrollment in the Conservation Reserve Program," *Journal of Agricultural and Applied Economics* 39(1):151-69.

MacDonald, J. M. 2014. *Technology, Organization, and Financial Performance in U.S. Broiler Production*, EIB-126, U.S. Department of Agriculture, Economic Research Service, June.

McBride, W.D., and N. Key. 2013. *U.S. Hog Production from 1992 to 2009: Technology, Restructuring, and Productivity Growth*. ERR-158, U.S. Department of Agriculture, Economic Research Service, October.

McEowen, R., and N.E. Harl. 2014. "Income Tax Aspects of Property Transfers," *Ag Decision Maker*, C4-20. Iowa State University, Extension and Outreach.

Meyer, L., S. MacDonald, and L. Foreman. 2007. *Cotton Backgrounder.* CWS-07B-01, U.S. Department of Agriculture, Economic Research Service, March.

Mishra, A.K., H.S. El-Osta, M.J. Morehart, J.D. Johnson, and J.W. Hopkins. 2002. *Income, Wealth, and the Economic Well-Being of Farm Households.* AER-812, U.S. Department of Agriculture, Economic Research Service.

National Association of Realtors. 2015. *Existing-home sales overview.* December.

Nickerson, Cynthia, and Lori Lynch. 2001. "The effect of farmland preservation programs on farmland prices," *American Journal of Agricultural Economics* 83(2):341-51.

Nickerson, Cynthia, Mitchell Morehart, Todd Kuethe, Jayson Beckman, Jennifer Ifft, and Ryan Williams. 2012. *Trends in U.S. Farmland Values and Ownership.* EIB-92. U.S. Department of Agriculture, Economic Research Service, February.

Paulson, N.D. 2012. "Revisiting Flexible Cash Leases," *Journal of the American Society of Farm Managers and Rural Appraisers*:165-77.

Paulson, N.D., and G.D. Schnitkey, G.D. 2013. "Farmland Rental Markets: Trends in Contract Type, Rates, and Risk," *Agricultural Finance Review* 73(1):32-44.

Petrzelka, Peggy, Tom Buman, and Jamie Ridgely. 2009. "Engaging absentee landowners in conservation practice decisions: A descriptive study of an understudied group," *Journal of Soil and Water Conservation* 64(3).

Sherrick, Bruce J. 2012. "Farmland Turnover in Illinois," *Farmdoc Daily.* University of Illinois Urbana-Champaign, Department of Agricultural and Consumer Economics, November.

Sklenicka, P., K. Molnarova, M. Salek, P. Simova, J. Vlasak, P. Sekac, and V. Janovska. 2015. "Owner or tenant: Who adopts better soil conservation practices?" *Land Use Policy* 47:253-61.

Soule, Meredith J., Abebayehu Tegene, and Keith D. Wiebe. 2000. "Land tenure and the adoption of conservation practices," *American Journal of Agricultural Economics* 82(4):993-1005.

U.S. Census Bureau, 2014. 2013 *American Housing Survey, General Housing Data – All Housing Units (National) Table C-01-AH.*

U.S. Census Bureau. 1954. Census of Agriculture. Available online: http://agcensus.mannlib.cornell.edu/AgCensus/censusParts.do?year=1954.

U.S. Census Bureau. 1935. Census of Agriculture. Available online: http://agcensus.mannlib.cornell.edu/AgCensus/censusParts.do?year=1935.

U.S. Department of Agriculture. 1999. Agricultural Economics and Land Ownership Survey. Available online: https://www.agcensus.usda.gov/Publications/1997/Agricultural_Economics_and_Land_Ownership/

U.S. Department of Agriculture, Economic Research Service (USDA-ERS). 2016. "U.S. and State Farm Income and Wealth Statistics." Available online: http://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances.aspx.

U.S. Department of Agriculture, Economic Research Service (USDA-ERS). 2015. Agricultural and Resource Management Survey Farm Financial and Crop Production Practices. Available online: http://www.ers.usda.gov/data-products/arms-farm-financial-and-crop-production-practices/questionnaires-and-manuals.aspx.

U.S. Department of Agriculture, Economic Research Service and National Agricultural Statistics Service (USDA-NASS). 2015. 2014 Tenure, Ownership and Transition of Agricultural Land, August. Available online: http://www.agcensus.usda.gov/Publications/TOTAL/.

U.S. Department of Agriculture, Farm Service Agency (USDA-FSA). 2013. *Land Contract (LC) Guarantee Program*. Fact Sheet, December.

U.S. Department of Agriculture, Farm Service Agency. 2012 (USDA-FSA). Y*our Guide to FSA Farm Loans*. FSA-BR-01, June.

U.S. Department of Agriculture, National Agricultural Statistics Service (USDA-NASS). 2015. *Farms and Land in Farms 2014 Summary*, Washington D.C., February.

U.S. Department of Agriculture, National Agricultural Statistics Service (USDA-NASS). 2015. *Land Values 2015 Summary*, Washington D.C., August.

U.S. Department of Agriculture, National Agricultural Statistics Service (USDA-NASS). 2014. Cropland Data Layer. Published crop-specific data layer [Online]. Available at https://nassgeodata.gmu.edu/CropScape/ (accessed Dec. 29, 2015). Washington, DC.

U.S. Department of Agriculture, National Agricultural Statistics Service (USDA-NASS). 2013. Cropland Data Layer. Published crop-specific data layer [Online]. Available at https://nassgeodata.gmu.edu/CropScape/ (accessed Jan. 15, 2016). Washington, DC.

U.S. Department of Agriculture, National Agricultural Statistics Service. 2009 (USDA-NASS). The Censuses of Agriculture, 2012, 2007, 2002, and 1997. http:// www.agcensus.usda.gov/index.asp.

U.S. Department of Agriculture, National Agricultural Statistics Service (USDA-NASS) and New York State Department of Agriculture and Markets. 2005. Rural Landowner Survey 2005, September 2005. (http://www.agriculture.ny.gov/rl_survey.pdf).

U.S. Department of Agriculture, National Agricultural Statistics Service (USDA-NASS). 1999. Agriculture Economics and Land Ownership Survey (AELOS). http://www.agcensus.usda.gov/Publications/1997/Agricultural_Economics_and_Land_Ownership/

Varble, S., S. Secchi, and C.G. Druschke. 2016. "An Examination of Growing Trends in Land Tenure and Conservation Practice Adoption: Results from a Farmer Survey in Iowa," *Environmental Management* 57(2):318-30.

Zulauf, C. 2013. "Putting the Age of U.S. Farmers in Perspective," *Farmdoc Daily*. University of Illinois Urbana-Champaign, Department of Agricultural and Consumer Economics, October 23, 2013.