U.S. DEPARTMENT OF AGRICULTURE

Economic Research Service

Economic Research Report Number 281

March 2021

Absent Landlords in Agriculture – A Statistical Analysis

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Recommended citation format for this publication:

Siraj G. Bawa and Scott Callahan. *Absent Landlords in Agriculture – A Statistical Analysis* ERR-281, U.S. Department of Agriculture, Economic Research Service, March 2021.

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Abstract

The majority of rented farmland is owned by landlords who do not operate farms, and a subset of these landlords, known as absent landlords, do not reside in the local farming area. This raises important questions about their effects on the economic health of the U.S. farm sector. Absent landlords have the potential to alter observed outcomes in agricultural real estate markets, rural employment markets, and engagement in conservation practices, given that the incentives they face may differ from operating or local nonoperator landlords. This study looks at the association between landlord absenteeism and multiple measures of long-term economic and agricultural health for the 25 most important agricultural States by cash receipts. We find that a greater prevalence of absent landlords is associated with lower rental rates and land values at the State level, and there is no association with recent changes in rents or land values. Also, while we find mixed results with respect to investments in soil quality, we do find evidence that the prevalence of absent landlords is associated with declining local employment rates. This study is designed to foster a broad discussion and form a starting point for subsequent statistical analyses to uncover the causal effects that absent landlords have on long-term economic health of agricultural production.

Keywords: absent, absentee, nonoperator, operator, landlord, land, congressional, Tenure, Ownership, and Transition of Agricultural Land (TOTAL) Survey, census, conservation tillage, land value, rent, population, employment, soil health, nonoperating landlords, farmland

Acknowledgments

The authors thank several anonymous peer reviewers, as well as ERS staff members for editing the report and Andres Guerrero for layout and design.

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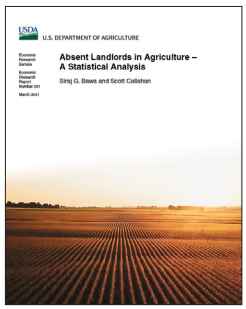


Absent Landlords in Agriculture – A Statistical Analysis

Siraj G. Bawa and Scott Callahan

What Is the Issue?

This is a congressionally mandated report, written at the request of the House and Senate Committees of Agriculture as part of the Agriculture Improvement Act of 2018. The committees directed the USDA Economic Research Service (ERS) to provide a report assessing the effects that absent landlords have on the economic health of agricultural production, including land valuation, soil health, and the economic stability of rural communities.

In 2014, 39 percent of farmland acreage in the 48 contiguous States was rented. Of this share, 80 percent was owned by landlords who did not operate farms (Bigelow et al., 2016). Nonoperating absent landlords may have different impacts on the long-term economic health of agricultural production. Absent landlords live outside the local economic region where the rented property is located, so their decisions and incentives may differ from those of local or operating landlords. For instance, the physical distance between landlords and the land they own could influence decisions related to the long-term soil productivity and soil health. Moreover, the vitality of rural economies may be affected when rental payments are sent to landlords residing far from the farm. This report explores associations between absentee ownership and farmland markets and management practices.

What Did the Study Find?

This study examines the location of nonoperating landlords (NOLs) relative to the location of their farmland to determine how that varies geographically. Landlords are considered absent landlords if they don't operate a farm and are located 100 miles or more from the farmland they rent to a farming operation. The study also evaluates the association between landlord absenteeism and multiple measures of long-term economic and agricultural health and describes changes in these measures from 2012 to 2017 for 25 agriculturally important States.

The study produced the following insights:

Distances between NOLs and their tenants vary considerably across States and regions. Many landlords reside thousands of miles from their agricultural land, often clustered around specific urban areas. Nonetheless, in the 25 States measured, the majority of NOLs in 2014 resided within 100 miles of the parcels they rented out. The Midwest differed from the rest of the United States in that the distances between landlords and tenants were, on average, significantly shorter than distances between landlords and tenants on the east and west coasts.

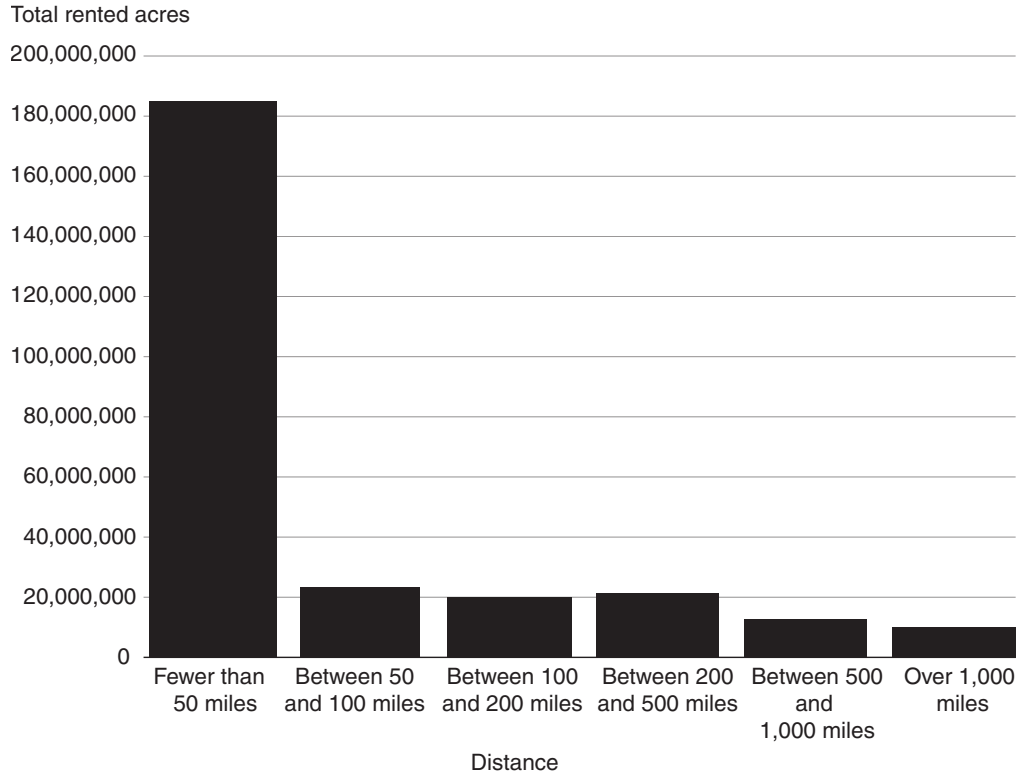
The prevalence of absent landlords was consistently higher in counties and States with lower rents and land values and weaker indicators of local economic development. In 2014, there was a higher percentage of absent landlords in areas with lower farmland rental rates, lower land values, lower income growth, and lower employment growth.

The association between the prevalence of absent landlords and our measures of effort to improve soil health was mixed. There was no statistical association between the percentage of absent landlords and the percentage of acres utilizing conservation tillage or no-till farming practices in 2017. However, higher shares of absent landlords in a State are associated with a larger increase in acreage utilizing these practices as well as in the number of practices used from 2012 to 2017. Conversely, States with a higher percentage of absent landlords had a lower percentage of cropland with cover crop usage in 2017, but there was no statistical association between the percentage change in cover crop usage over the period studied.

How Was the Study Conducted?

Distance between the landowner and the approximate location of the land they rent out was measured using geocoding techniques based on NOLs' mailing address and approximate location of the land they rent out from the USDA's 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey. The TOTAL survey included operators and nonoperator landlords across the 48 contiguous States, with State-level estimates suitable for statistical analysis in the 25 States with the greatest cash receipts from agricultural operations. Two definitions of absent landlords, a subgroup of NOLs, were considered in the study: (1) those residing more than 100 miles from the farmland they rent out and (2) those residing more than 200 miles from their rented-out farmland. To explore the potential effects that landlord absenteeism might have on farmland rents and value, soil health, and local economic well-being, TOTAL data were supplemented with information from the 2012 and 2017 Census of Agriculture. State- and county-level economic variables were drawn from statistics produced by the Bureau of Economic Analysis (BEA).

Total rented acres by nonoperator landlords residing at different distance intervals



Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service, 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey.

Absent Landlords in Agriculture – A Statistical Analysis

Introduction

Absent landlords, a subgroup of farm landlords who do not operate a farm, have captured the renewed interest of policymakers and academics seeking to understand these landlords' roles in farmland management and other aspects of local economies and resource management. In the 2018 Farm Bill, Congress specifically requested additional information on how absent landlords affect the economic health of agricultural production. Section 12507 of the Agricultural Improvement Act of 2018 requests an analysis of the effects of absent landlords on land valuation, soil health, and the economic stability of rural communities. Farmland is an essential input into agricultural production, and farmland and buildings account for more than 80 percent of the asset base of agriculture. Consequently, access to farmland is of critical importance to current and future farmers' ability to operate, but farmland ownership changes slowly. A USDA survey asked farmland owners if they were planning to transfer ownership of their land in the next 5 years and, if so, what their intentions were for the land. Farmland owners reported that they anticipated selling only 2.3 percent of their farmland to nonfamily members in the next 5 years (Bigelow et al., 2016 and NASS, 2015).

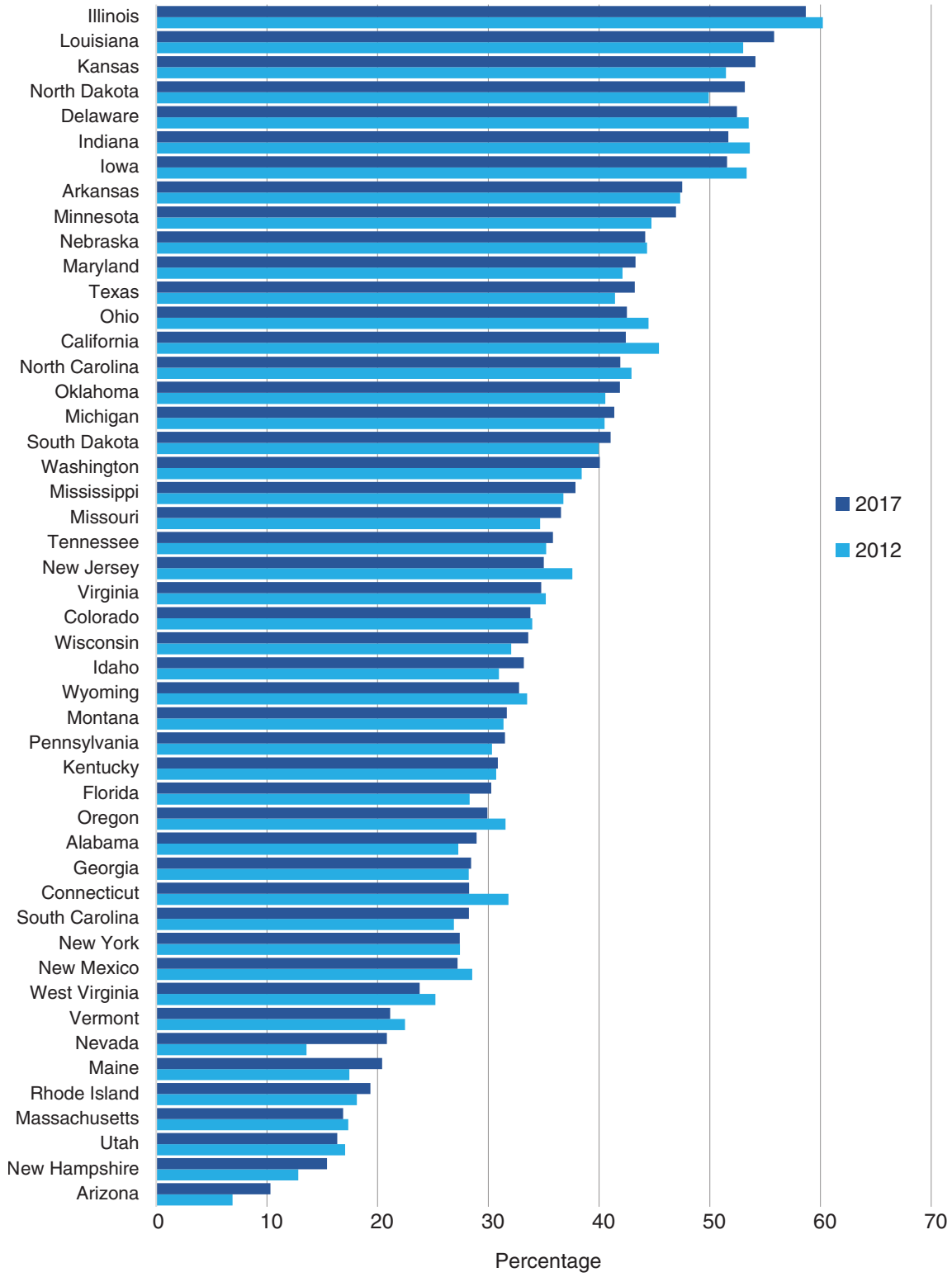
Given the low turnover in farmland ownership, access to farmland through rental markets is an important option for entry into farming or expanding existing farming operations. As of 2014, 39 percent of land in farms in the 48 contiguous States, or 355 million acres, was rented (Bigelow et al. 2016).[1] Figure 1 (based on data from the Agricultural Census) shows the prevalence of rented farmland across States, accounting in many cases for more than half of operated acres. Some of the rented farmland is owned by farmers who, in addition to farming their own farming operations, rent out land to other farmers. However, USDA's 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey indicates that the majority of rented land (80 percent) was owned and rented out by landlords who do not operate farms.

A significant share of nonoperator landlords (NOLs) are considered absent landlords because they live outside the local farming area. Comprehensive information on NOLs and, especially, absent landlords is scarce. In fact, no rigorous definition of absent landlord exists in the agricultural economics literature. This report developed and explored multiple definitions and measures of landlord absenteeism in the subsequent analysis. We used a survey of landowners carried out by USDA with a reference year of 2014 that surveyed operators and NOLs across the 48 contiguous States. USDA's TOTAL survey provides reliable national estimates and State-level estimates for the 25 TOTAL survey of agricultural States—referred to as core States—on landlords and the farmland they rent out to farm operators. The TOTAL survey contains information on the ZIP code of the mailing address of the landowner. To calculate the distance between the landowners' mailing address and the approximate location of the land they rent out, we geocoded the ZIP codes and calculated the distance between their farmland and their mailing address. Having a nationally representative sample of landlords and State-level estimates for the 25 largest agricultural States is an advantage over most prior studies, which typically are limited to a single State or other local area. To explore the potential effects of absent landlords on farmland rental rates, farmland value, soil health, and local economic well-being, we supplemented the TOTAL survey data with summary information from the Census of Agriculture and the BEA. From these sources, we obtained supplemental information on soil health and indicators of economic health.

[1] Farmland in Alaska and Hawaii was excluded from the analysis.

Figure 1

Share of total operated acres rented by State in 2012 and 2017



Source: USDA, Economic Research Service using data from USDA, National Agricultural Statistics Service, 2012 and 2017 Census of Agriculture.

Because of limited data availability, most of the previous studies on absent and nonoperator landlords in agriculture focused on States or regions. Furthermore, most of the studies focused on the role of absent landlords on conservation. For example, Duffy and Smith (2008) studied trends in landownership from a sample of Iowa farmers and found that the number of absent landlords has increased dramatically since 2000. Zhang et al. (2018) likewise found that the percentage of nonresident or part-time resident landlords doubled in Iowa since 1982, though this percentage has remained relatively constant since 2007. Several studies concluded that absent landowners were less likely to enroll in USDA's Conservation Reserve Program (CRP) (e.g., Soule et al., 2000; Nickerson et al., 2012). Petrzelka (2014) provided a survey and discussion of the impact of absent landlords on their tenants and the local community's social issues. Bigelow et al. (2016) found that NOLs were less involved in farm-level decision making than operator landlords. Using the TOTAL survey for eight Midwestern States, Kuethe and Bigelow (2018) provided an analysis of the relative bargaining position of farmland owners and operators, including on conservation practices. They found a negative relationship between cash rental rates and landlord absenteeism.

How far from their land did nonoperating landlords live?

To identify the absent landlord population, we calculated the distance between all NOLs and the land they rented out using data from the NOL questionnaire in the 2014 TOTAL survey.[2] This survey was a follow-on to the 2012 Census of Agriculture, which collected data from a representative sample of owners and operators of agricultural land in the 48 contiguous States and was designed to allow users to develop statistical estimates for 25 core agricultural States. The distance was calculated based on the latitude and longitude coordinates of the landowner's ZIP code and the centroid of the geographical area of farmland sampled, known as a survey tract, in which the respondent farm operation was located. The distance was computed as the shortest line between those coordinates. The unit of measurement was in miles. TOTAL survey weights were used to weight individual survey observations when calculating average landlord distance and associated summary statistics.

There was a high degree of variation across States and regions in the distribution of distances between NOLs and their tenants. Figure 2 illustrates two features of this variation: that a significant number of agricultural landlords lived far from their tenants, and that many landlords were clustered around certain urban areas. Relative to those in other regions, landlords in Midwestern States lived nearer their rental properties. In contrast, distances between landlords and tenants were much greater on the coasts (particularly the west coast).

Figure 2
Geographic connection between nonoperator landlords and tenants

Note: The lines in the map trace the distance between nonoperator landlords and their tenants.
Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service, 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey.

[2] To protect the confidentiality of respondents, we do not mark the direction of the lines. In other words, the lines connect landlords and their tenants, but the lines do not identify who is on either side. Furthermore, random draws from a uniform distribution with support -0.5 and 0.5 decimal degrees are added to the latitude and longitude coordinates.

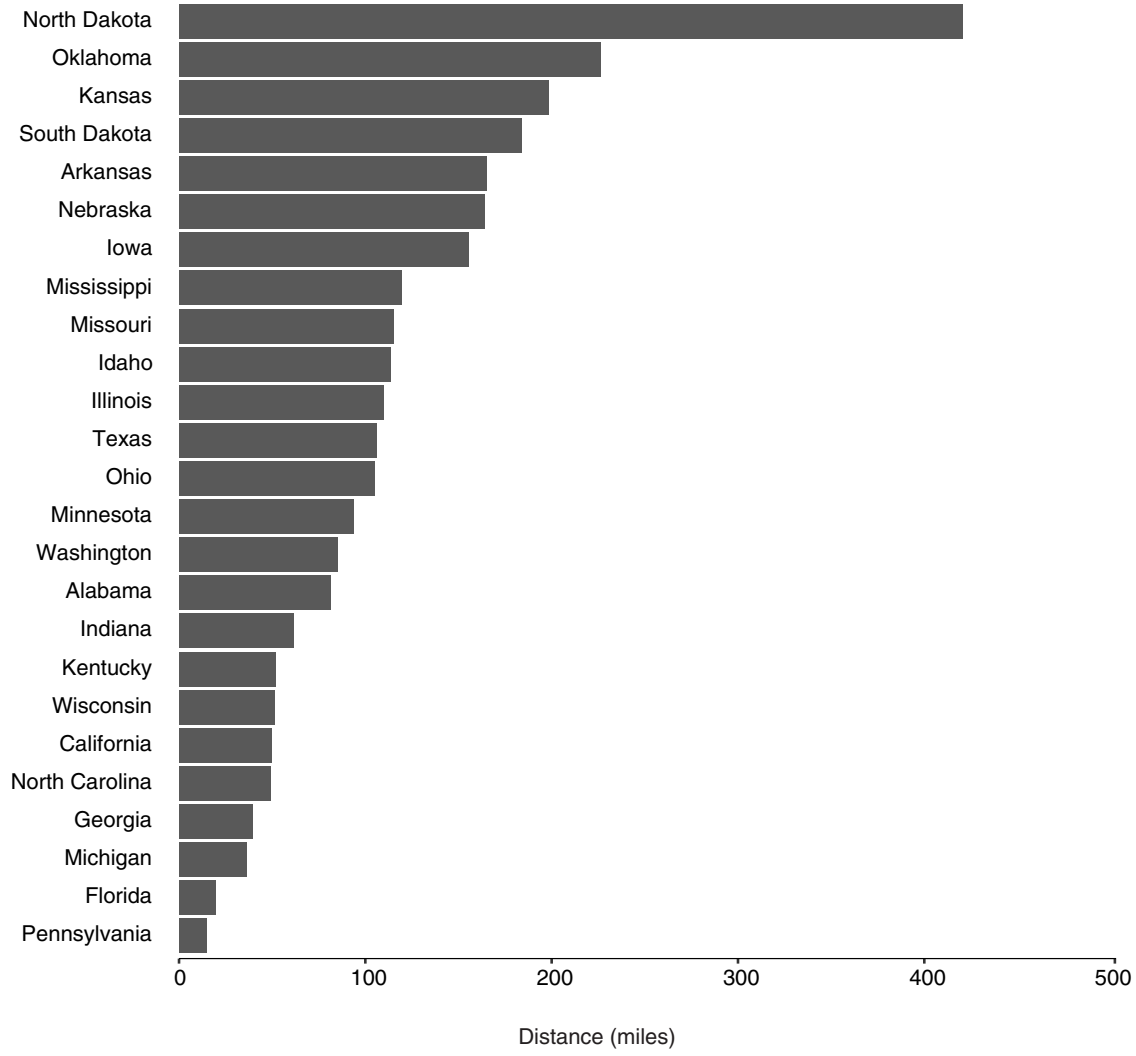
This spatial visualization underlines the limitations in relying on county or State boundaries to classify NOLs as absent landlords, given regional variations in the size of counties and States. For instance, using a county- or State-based definition would categorize a relatively greater share of landlords in Midwestern States as absent even though the distances aren't nearly as extensive as those observed in other States. Summary statistics and distance quartiles are provided in table 1 for the 25 core States of the TOTAL survey, with figure 3 depicting a ranking of States based on the mean distance between nonoperating landlords and their tenants. The quartiles show that across all States, the distance from tenants to their landlords is heavily skewed toward shorter distances. North Dakota has the highest mean distance, followed by the rest of the Northern Plain States. The vast majority of rented acres comes from NOLs residing within 50 miles of the rented land location. Figure 4 presents the total rented acres across the 48 contiguous States by NOLs corresponding to six different distance intervals. A total of 185 million acres are owned by NOLs who live within 50 miles of their rented land (67 percent of all acres rented out by NOLs). The next landlord grouping, those living between 50 and 100 miles away, rent out a little more than 24 million acres. Total rented acres progressively decline as the distance between landlords and tenants increases, and the last group — those living more than 1,000 miles away — provides nearly 11 million acres, or almost 4 percent of the total acres rented out by NOLs.

Table 1
Summary statistics for distance between nonoperator landlords and tenants by State

State	Mean distance	Standard error	1st quartile	Median	3rd quartile
Alabama	81.46	29.96	5.18	7.23	24.17
Arkansas	164.76	31.51	4.84	19.61	105.4
California	49.8	15.35	2.24	5.89	54.24
Florida	19.81	5.07	3.84	6.89	11.55
Georgia	39.62	6.2	4.11	7.91	46.09
Idaho	113.53	27.08	3.36	8.89	72.58
Illinois	109.71	11.23	3.41	7.79	45.63
Indiana	61.69	12.44	2.81	4.61	10.45
Iowa	155.41	13.47	4.03	9.04	87.9
Kansas	198.12	16.22	5.31	24.01	224.75
Kentucky	51.95	11.42	3.12	6.41	15.48
Michigan	36.39	12.63	1.94	2.96	5.76
Minnesota	93.45	11.53	3.32	6.15	46.7
Mississippi	119.66	24.57	4.18	9.87	80.17
Missouri	115.3	17.96	4.21	7.32	57.89
Nebraska	163.72	17.08	5.04	12.95	101.6
North Carolina	49.17	7.2	3.16	5.78	20.67
North Dakota	420.25	74.81	17.85	101.89	889.44
Ohio	105.11	40.11	2.45	4.62	9.2
Oklahoma	226.36	28.78	6.87	53.63	293.9
Pennsylvania	14.83	5.38	2.24	2.82	4.35
South Dakota	183.63	21.21	6.78	29.51	180.51
Texas	106.04	14.13	6.08	19.72	108.51
Washington	84.96	21.19	4.18	8.41	49.61
Wisconsin	51.16	18.51	3.38	4.68	8.31

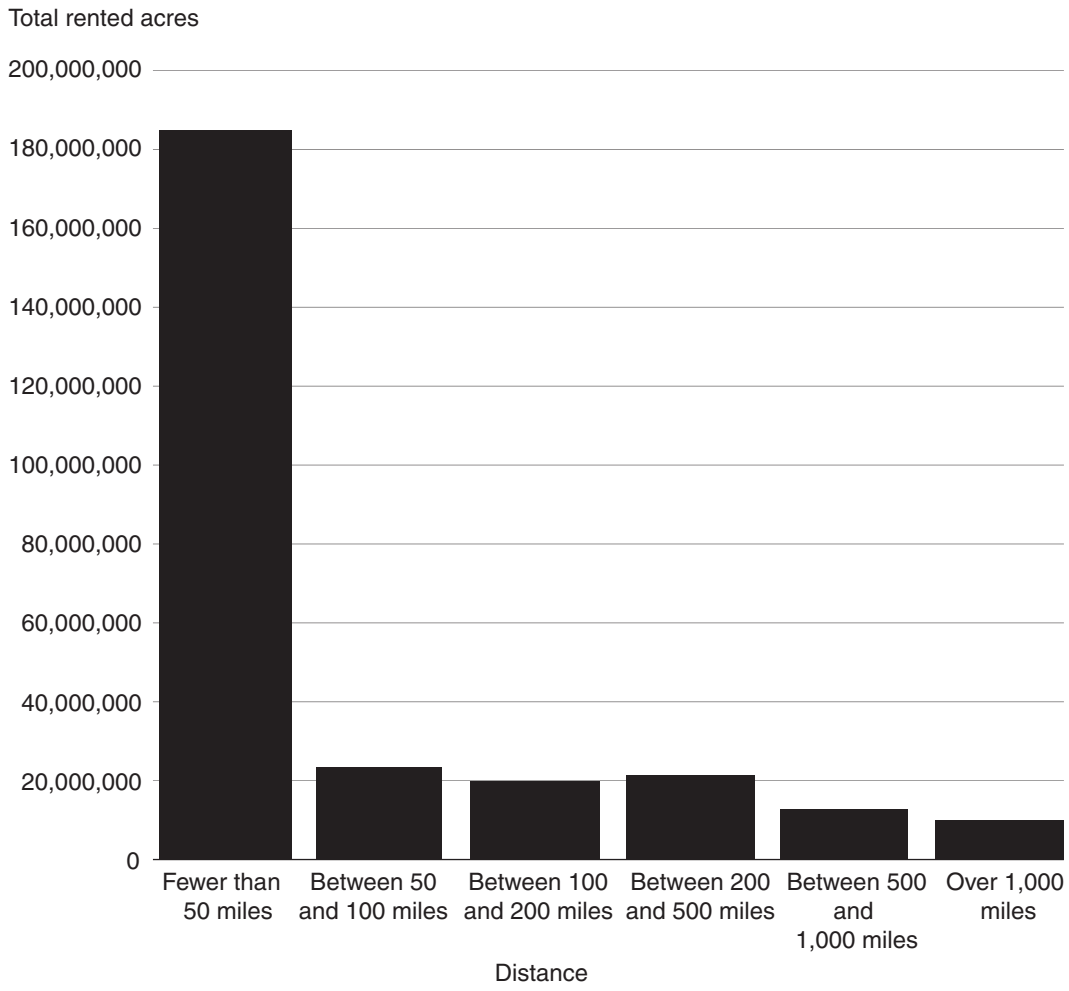
Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service, 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey.

Figure 3
State ranking by average distance between nonoperator landlords and tenants



Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service, 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey.

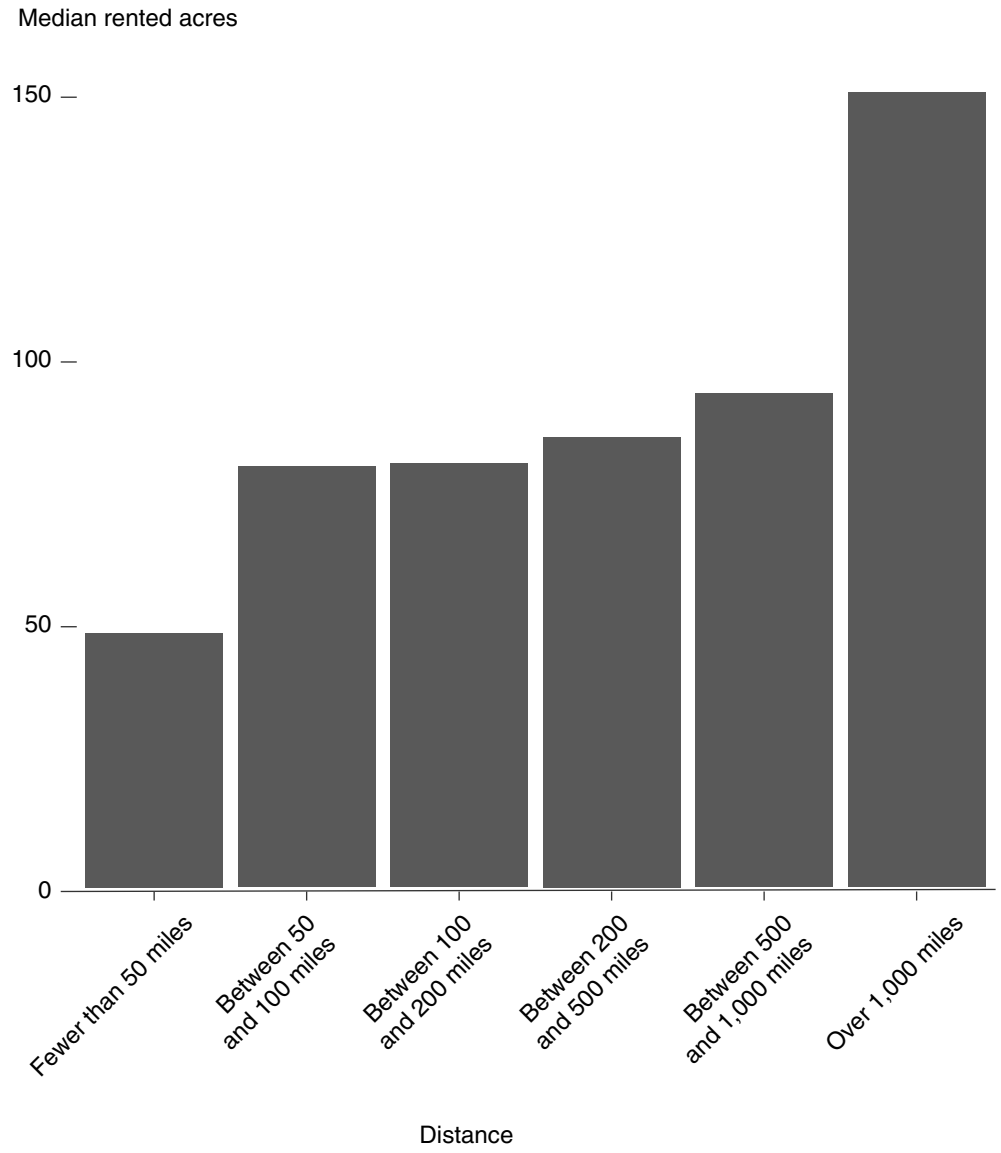
Figure 4
Total rented acres by nonoperator landlords residing at different distance intervals



Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service, 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey.

Figure 5 depicts the median number of acres of land rented out by landlord distance class. More distant landlords tend to rent out more acres of land per capita than landlords closer by.

Figure 5
Median rented acres by nonoperator landlords residing at different distance intervals



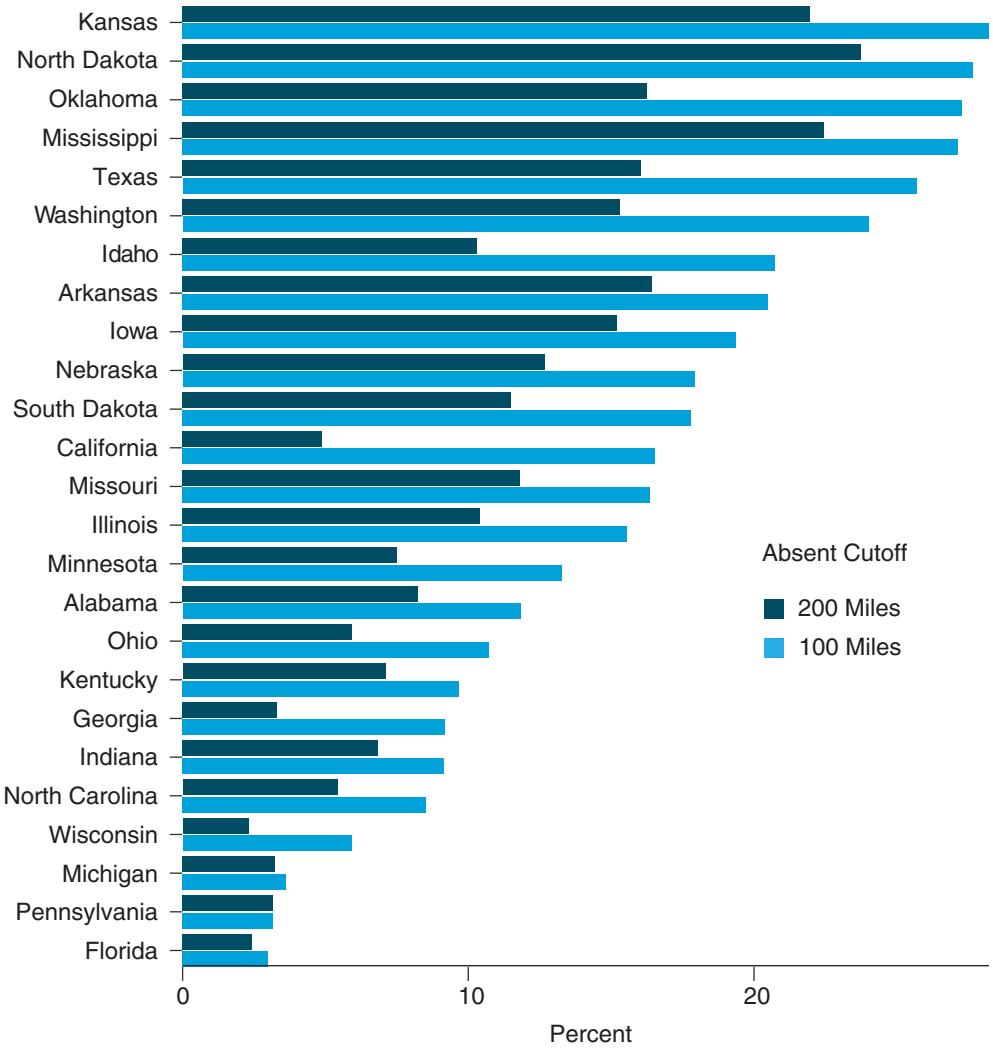
Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service, 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey.

Prevalence of Absent Landlords

Nonoperating landlords are classified as absent in this report using two definitions: (1) if they reside more than 100 miles from the farmland they rent out and (2) if they reside more than 200 miles from their rented-out farmland. The 100-mile and 200-mile distance measures are used together to assess the sensitivity of reported associations to the choice of definition.

Figure 6 shows the percentage of rented land provided by landlords living more than 100 miles and more than 200 miles away. Absent landlords own a significant portion of rented acres across most of the TOTAL core States. When using the 100-mile cutoff, absent landlords own nearly 20 percent of the acres rented in eight States.

Figure 6
Percentage of total rented acreage owned by absent landlords



Note: Absent landlords are defined as those living 100 miles or more or 200 miles or more from the rented farmland.

Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service, 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey.

Potential Effects of Landlord Absenteeism

This section explores associations between measures of farmland value, soil health, and local economic health with landlord absenteeism. The analysis is limited to the 25 TOTAL core States. It is important to note that this study does not explore causality. Hence, the analysis consists of a series of scatter plots with fitted regression lines derived from univariate linear regressions with various landlord absenteeism measures serving as independent variables. The slope of the line, p-value, and adjusted R^2 are reported at the top of each plot. While we explore correlations rather than causality, economic causal mechanisms that may be consistent with these results will be briefly discussed in the subsequent analysis.

The analysis is conducted at both the State level and the county level.[3] However, because of the TOTAL survey design, the absent landlord measures differ across the two levels of aggregation. At the State level, we use three measures for landlord absenteeism: the average landlord distance and the portion of rented acres held by landlords living more than 100 miles away and more than 200 miles away. At the county level, only the average distance measure can be used.[4] The State-level analysis contains 25 observations, while the county-level analysis contains 1,528 observations. For the county-level estimations in which the dependent variables are 2017 levels, State-fixed effects are used to control for unobserved heterogeneity. State-fixed effects are not included for estimations of the effects of landlord distance on growth rates since these growth rates are based on first differences, rendering fixed effects invalid.

Rents, farmland value, and absent landlords

We first consider associations between absent landlord measures and farmland rental rates, since changes in rental rates affect the value landlords (including absent landlords) can earn from owning agricultural land. The plots use 2017 farmland rental rates and land values per acre and the growth rate of these variables between 2012 and 2017. The 2012 and 2017 Census of Agriculture provide the land value per acre information, as well as the total rent expense reported by farm operators and the total acres rented from others, which are used to calculate the per acre rental rate variable.

Figure 7 contains scatter plots for State rental rates against average nonoperator landlord-to-tenant distance and the percentage of total rented acres owned by absent landlords based on the 100- and 200-mile cutoffs. The plots show a negative association between the 2017 rental rates and all measures of landlord absenteeism, indicating that land rented at a lower price tends to be associated with landlords who, on average, live farther from their lands, as well as a higher percentage of absent landlords. Furthermore, calculated coefficients are statistically significant (i.e., the slope of the line is not equal to zero) when using the share of acres held by landlords living more than 100 or more than 200 miles away. Unlike 2017 rental rates, the rental rate growth between 2012 and 2017 does not exhibit an association with landlord distance.

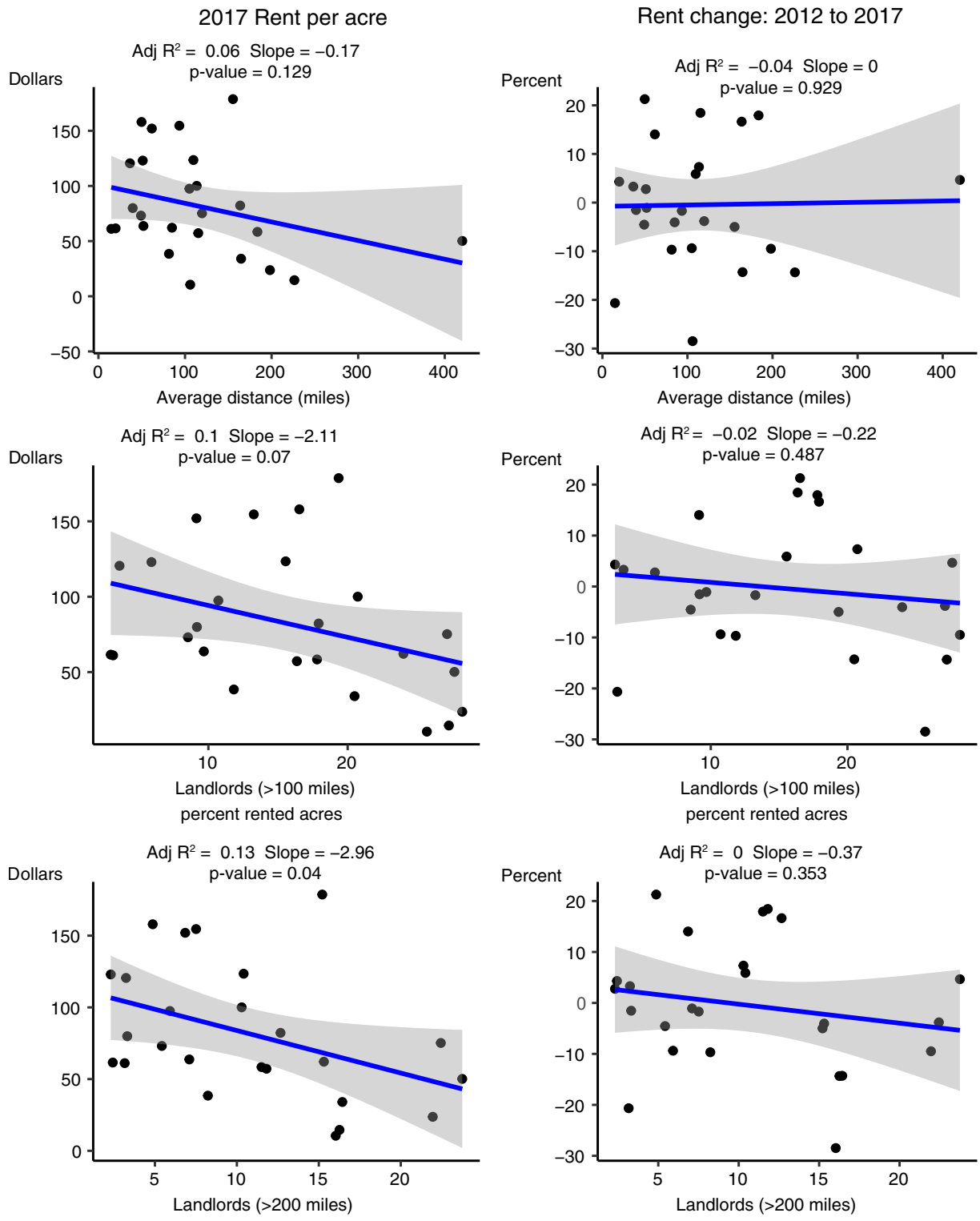
The 2017 farmland rental rates measured at the county level are also negatively associated with landlords' absenteeism, shown in figure 8. The slope of the fitted lines is less pronounced than the one estimated at the State level. Moreover, just as in the State-level analysis, there is no association between average landlord distance and either the levels or growth rates in agricultural rental rates at the county level, also shown in figure 8.

[3] Since the TOTAL survey is designed to be representative at the State level, not the county level, it is also important to note that caution is necessary when drawing inferences from the county-level analysis.

[4] The TOTAL survey asked landlords about the total acres they rent out in the State. The measures using acres held by absent landlords classified using the 100- or 200-mile cutoffs would result in ratios of zero or infinity for more than 40 percent of the counties in the dataset.

Figure 7

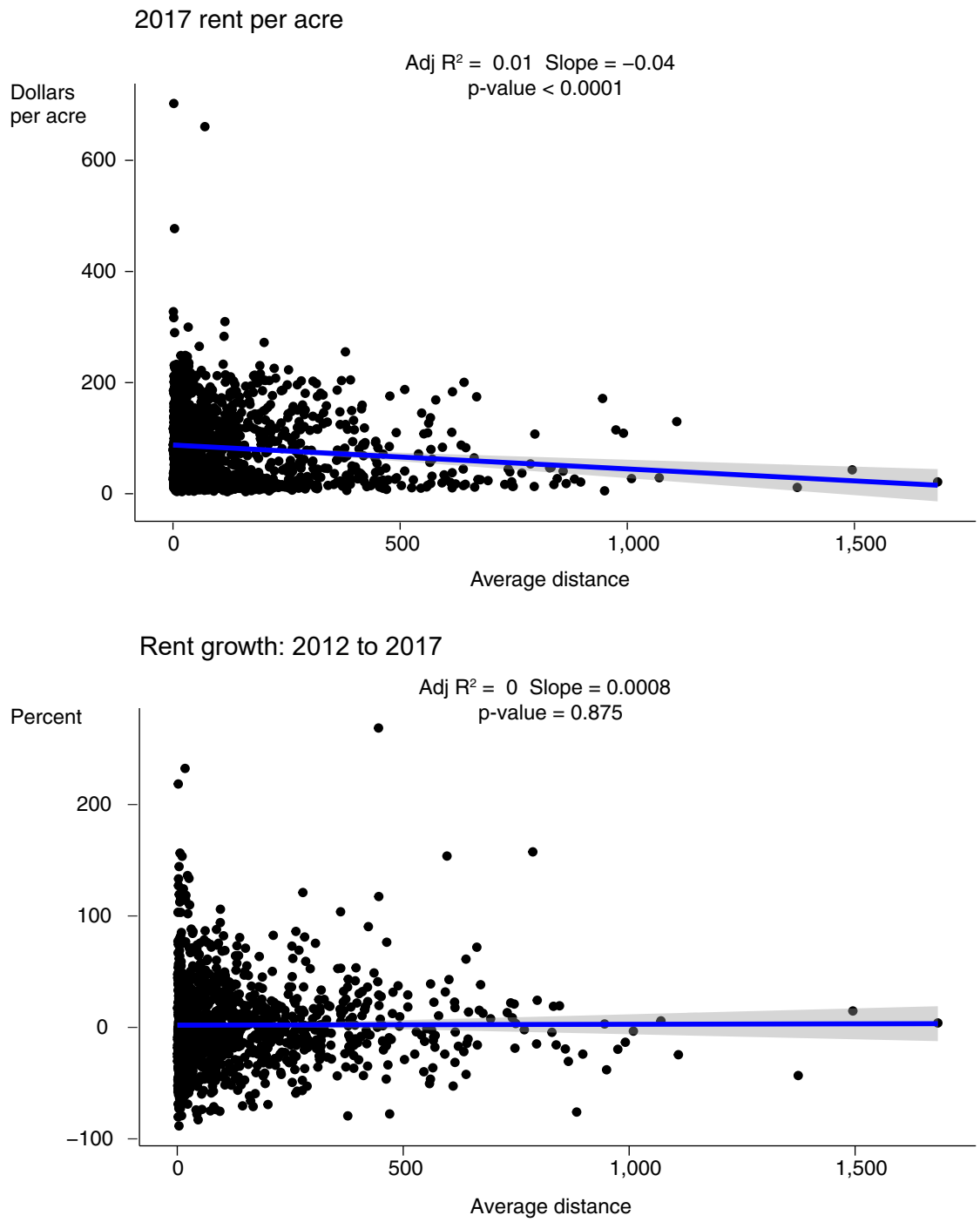
Rents per acre and change in rent per acre by absent landlord measure at the State level



Note: Each point represents survey weighted average values for each State included in the Tenure, Ownership and Transfer of Agricultural Land (TOTAL) survey. The blue line in each sub-chart shows the best linear fit for the data points. Adjusted R^2 is the percentage of the variation in the dependent variable explained by the independent variable. The slope is the estimated regression coefficient. The p-value shows the slope coefficient is significant at the given value.

Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service (NASS), 2014 TOTAL survey; and NASS, 2012 and 2017 Census of Agriculture.

Figure 8
Rent per acre and change in rent per acre by average landlord distance



Note: Each point represents survey weighted average values for each State included in the Tenure, Ownership and Transfer of Agricultural Land (TOTAL) survey. The blue line in each sub-chart shows the best linear fit for the data points. Adjusted R^2 is the percentage of the variation in the dependent variable explained by the independent variable. The slope is the estimated regression coefficient. The p-value shows the slope coefficient is significant at the given value.

Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service (NASS), 2014 TOTAL survey; and NASS, 2012 and 2017 Census of Agriculture.

Several factors could explain the association between a higher rate of landlord absenteeism and lower average farmland rental rates. Absent landlords may possess less knowledge about the inherent productivity of their land than local or operator landlords, resulting in their willingness to accept lower rental rates and negatively influencing local rental values. Conversely, formerly local landowners may have relocated in pursuit of more lucrative opportunities while maintaining their ownership interest – or local farmers might be more willing to sell land that commands lower rental rates to nonlocal investors, resulting in a negative correlation between a cross-section of rental rates and absent landlord measures. The lack of association between the growth in rental rates and absent landlord measures suggests that the negative associations between the 2017 rental rates and landlord absenteeism may be caused by factors beyond the scope of this report and requiring further analysis.

Farmland values exhibit a relationship like that of rental rates. Figure 9 presents the scatter plots of farmland values measured in dollars per acre (inclusive of buildings) from the 2017 Agricultural Census and scatterplots of the change in farmland values between 2012 and 2017 versus the three measures of landlord absenteeism. Farmland values have a negative association with the degree of landlord absenteeism, and, unlike the rental rates, all three measures contain statistically significant coefficients (i.e., statistically nonzero slopes). Moreover, landlord absenteeism explains a larger portion of the variation in States' farmland values in 2017 than in rental rates. However, there is no statistically significant association between the growth in land values from 2012-17 and landlord absenteeism rates in 2014.

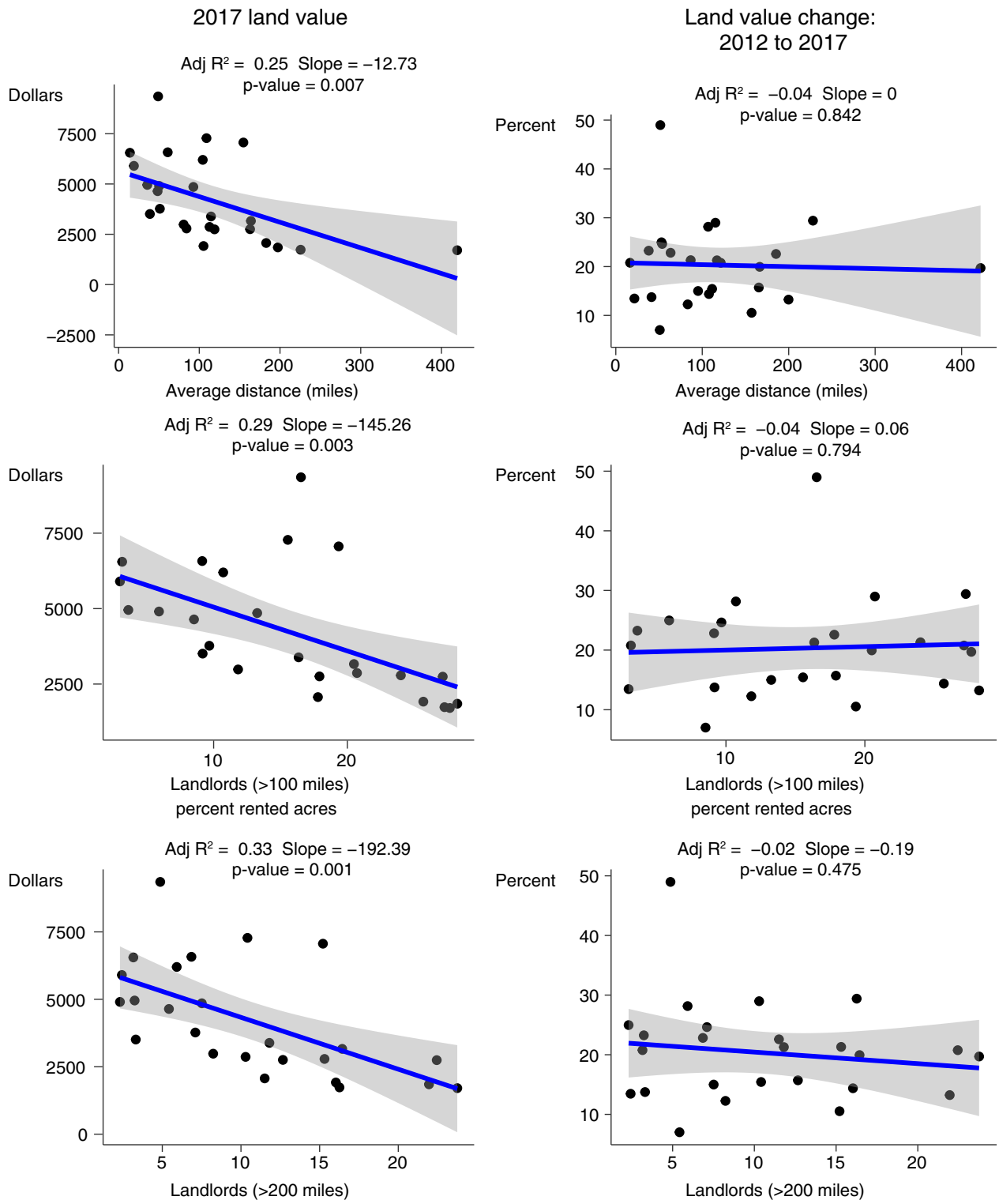
Farmland values in 2017 measured at the county level, shown in figure 10, are negatively associated with measures of landlord absenteeism. The slope is less pronounced relative to the one estimated at the State level, much like the rental rate analysis, suggesting that the effect of an increase in landlord distance is smaller at the county level than at the State level. For example, the slope for land value at the State level is -12.73 (as shown in figure 9), while the slope using county-level data is -2.87 (shown in figure 10). Like the State-level case, we find no significant association between average landlord distance and the growth rate in farmland values.

The patterns of association for farmland values are like those for rental rates. One potential cause for these associations is that nonlocal investors may find cheaper farmland more attractive. Alternatively, absent landlords may be less adept at maintaining their farmland relative to their local peers. The lack of correlation between growth rates in land values and absent landlord measures is more consistent with the explanation that nonlocal investors prefer to purchase cheaper farmland, or that less productive land is more likely to be listed for sale, and distant investors have more financial resources than locals.

Because farm regions can differ significantly in their average profitability, affecting the average value of farmland, the associations between landlord absenteeism and farmland values and rental rates are explored for each of these farm regions. The farm region classification follows USDA Economic Research Service's farm resource region (Heimlich, 2000) shown in figure 11. This classification does not follow State boundaries but rather combines counties based on commodity specialization and similar soil characteristics.

Figure 9

Farmland value per acre and change in land value per acre by absent landlord measure

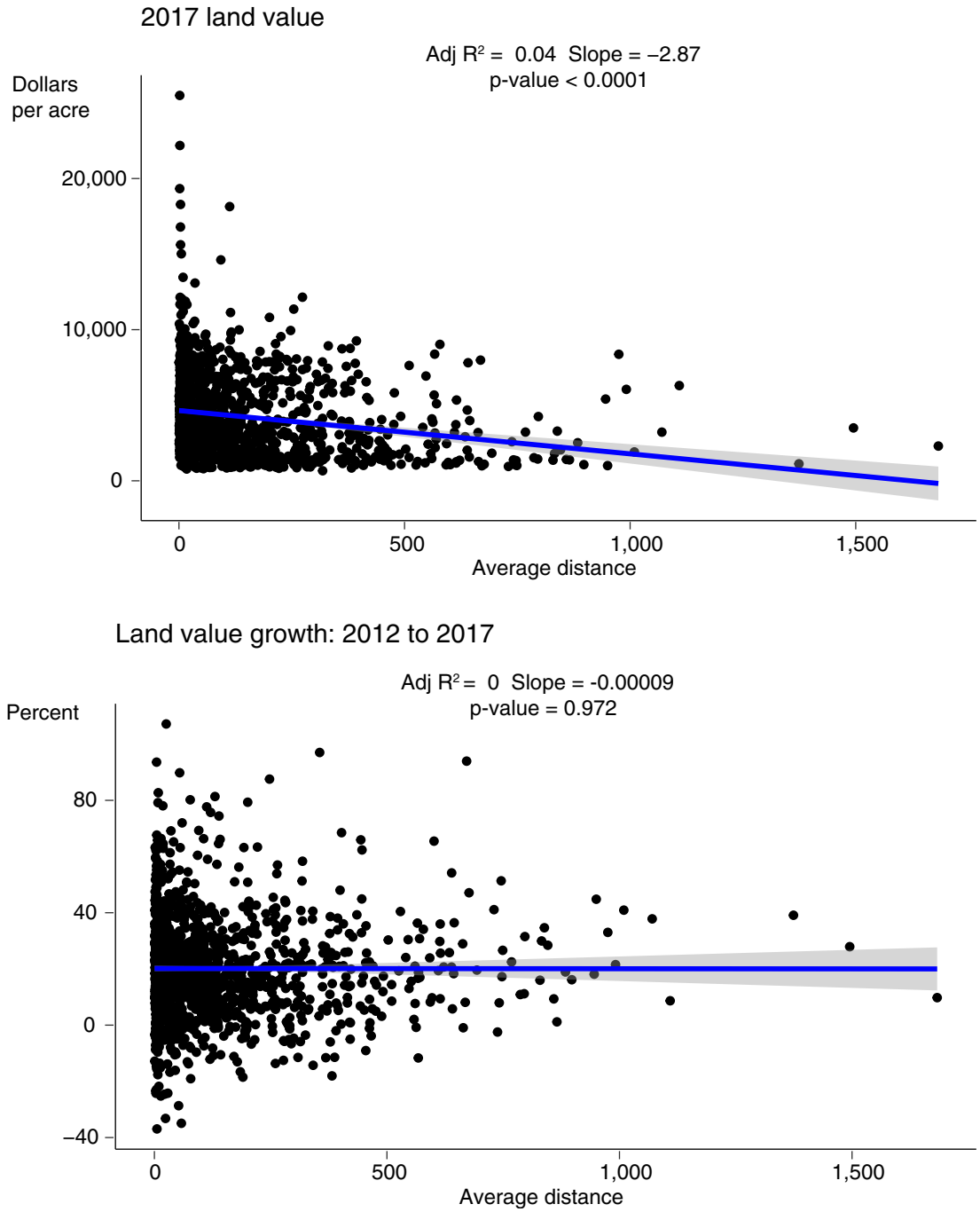


Note: Each point represents survey weighted average values for each State included in the Tenure, Ownership and Transfer of Agricultural Land (TOTAL) survey. The blue line in each sub-chart shows the best linear fit for the data points. Adjusted R^2 is the percentage of the variation in the dependent variable explained by the independent variable. The slope is the estimated regression coefficient. The p-value shows the slope coefficient is significant at the given value.

Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service (NASS), 2014 TOTAL survey; and NASS, 2012 and 2017 Census of Agriculture.

Figure 10

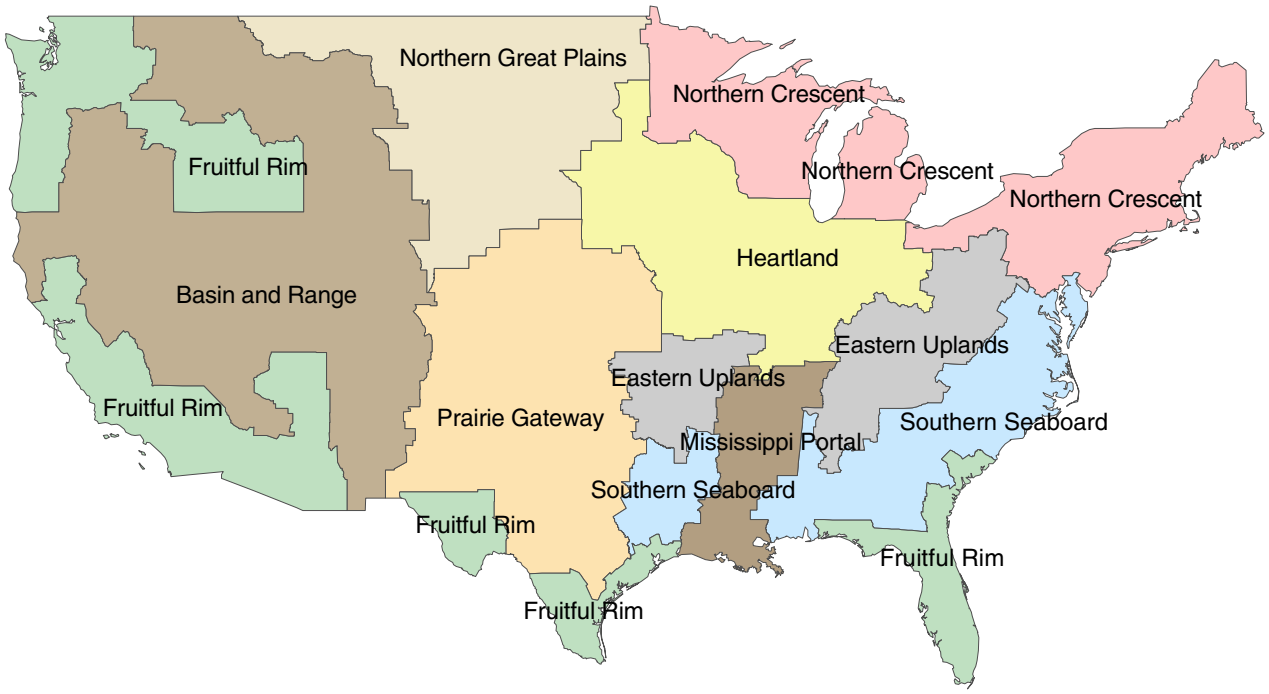
Farmland value per acre and change in farmland value per acre by average landlord distance measure



Note: Each point represents survey weighted average values for each State included in the Tenure, Ownership and Transfer of Agricultural Land (TOTAL) survey. The blue line in each sub-chart shows the best linear fit for the data points. Adjusted R^2 is the percentage of the variation in the dependent variable explained by the independent variable. The slope is the estimated regression coefficient. The p-value shows the slope coefficient is significant at the given value.

Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service (NASS), 2014 TOTAL survey; and NASS, 2012 and 2017 Census of Agriculture.

Figure 11
Map of USDA, Economic Research Service farm resource regions



Source: USDA, Economic Research Service.

Table 2 reports the coefficients for regressions of farmland rental rates and farmland real estate values against the landlord absenteeism measures for each farm resource region.

The association between landlord absenteeism and farmland rental rates and values varies across farm resource regions but is statistically significant in only a few cases. The Basin and Range reports a positive but weak statistically significant association between the 2017 farmland value per acre and distance, which is the opposite of what was found when carrying out the analysis at the State level or when pooling all counties together. Using growth rates, all regions with a statistically significant association present a negative value. In particular, the Fruitful Rim shows a steeper slope (relative to all other regions) when looking at the growth in farmland value. The estimated coefficient for distance (-9.25) is more than 6 times larger in magnitude than that of the other region with a statistically significant association.

While analysis at the county level allows for examination by resource regions, the TOTAL survey is designed to be representative at the State level, not the county level. Therefore, caution is necessary when drawing any inferences from the county-level analysis.

Table 2

Regression results for relationship between rent and land values and landlord distance by USDA, Economic Research Service farm resource regions

	Farmland rents				
	2017 rent per acre			Growth (percent) 2012-17	
Farm region	Distance (miles)	P-value		Estimate	P-value
Heartland	-0.008	0.3248		0.0035	0.802
Northern Crescent	0.0009	0.9653		0.0423	0.2271
Northern Great Plains	0.0027	0.821		-0.0222	0.0925
Prairie Gateway	0.0034	0.7666		-0.0098	0.2593
Eastern Uplands	-0.01	0.7012		0.0022	0.8776
Southern Seaboard	0.0334	0.2779		0.0244	0.417
Fruitful Rim	-0.0303	0.4101		-0.1437	0.1279
Basin and Range	0.029	0.7149		0.0003	0.995
Mississippi Portal	-0.0166	0.2344		0.0012	0.9425
	Farmland value				
	2017 value per acre			Growth (percent) 2012-17	
Farm region	Distance (miles)	P-value		Estimate	P-value
Heartland	-0.004	0.1818		0.2181	0.6471
Northern Crescent	-0.0106	0.4315		-0.7047	0.6876
Northern Great Plains	-0.002	0.8182		-0.4749	0.1692
Prairie Gateway	-0.0013	0.8182		-1.5385	0
Eastern Uplands	0.0076	0.3001		-0.2896	0.7868
Southern Seaboard	0.0026	0.8438		-3.2528	0.0053
Fruitful Rim	0.0101	0.6373		-9.2483	0.0279
Basin and Range	0.0911	0.0684		-4.1824	0.1961
Mississippi Portal	0.0049	0.56		0.1489	0.6457

Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service, 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey.

Land Conservation Practices

Next, we explore the association between landlord absenteeism and measures of soil health. Because direct measures of soil health appropriate for this analysis are unavailable, we rely on two proxies for soil health obtained from the 2012 and 2017 Census of Agriculture: (i) percentage of total tillage using no-till or conservation tillage practices and (ii) the share of harvested cropland acres where cover crops are planted.

Figure 12 presents the share of conservation tillage and no-tillage acres relative to all tillage (henceforth referred to as tillage practice) and the share of harvested cropland that had cover crops for 2017 at the State level (henceforth referred to as cover crops). At the State level, tillage practices show no statistically significant association with landlord absenteeism.

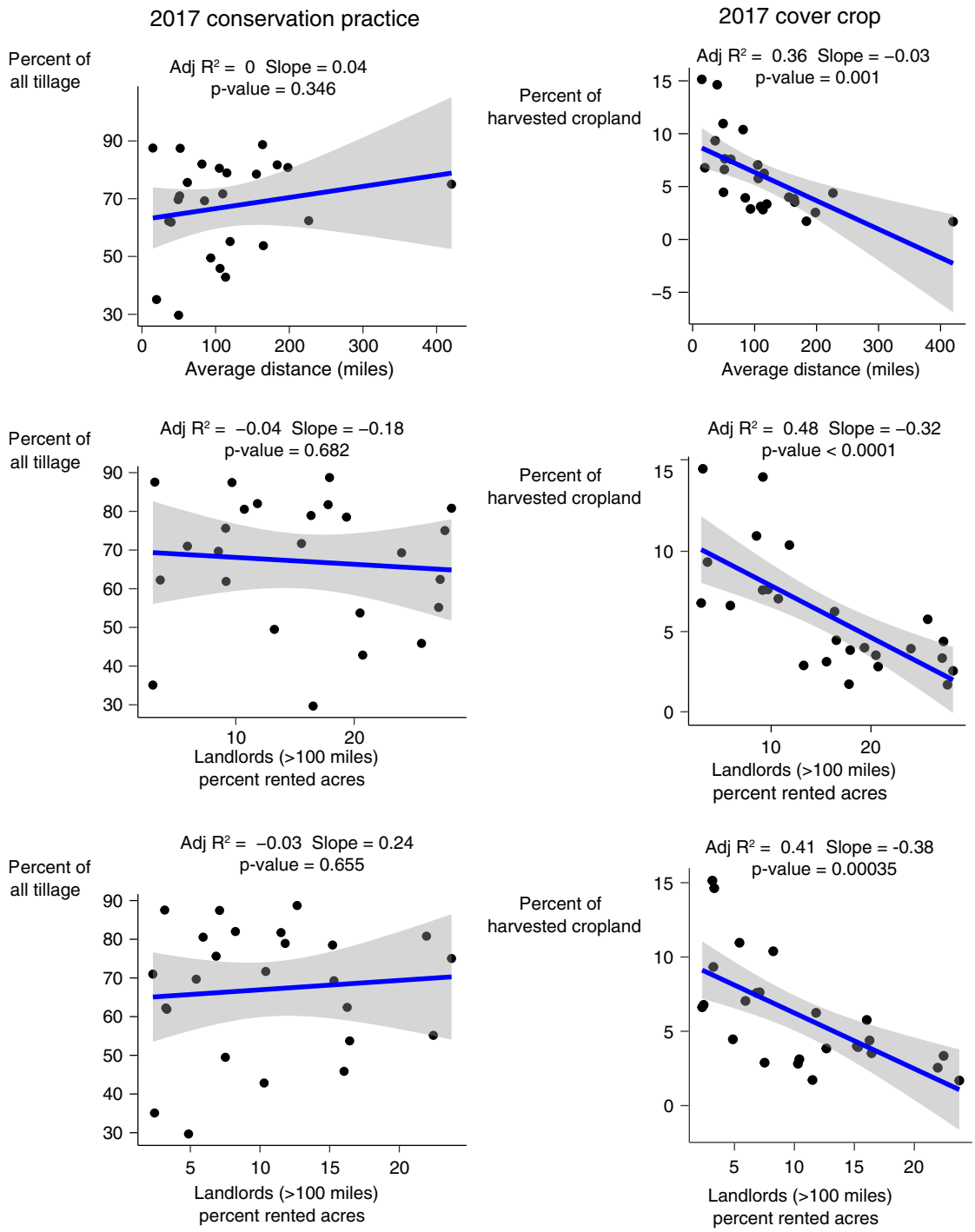
However, tillage practices are positively associated with average landlord distance at the county level, shown in figure 13. In contrast to the tillage practices, the share of harvested cropland with cover crops in 2017 is negatively associated with all measures of landlord absenteeism at the State level, while the effect disappears in the county-level analysis when State-fixed effects are utilized.

Figures 14 and 15 plot the changes in conservation and cover crop shares since 2012 at the State and county levels. The changes in the share of conservation tillage are larger in both States and counties with higher levels of absenteeism, especially at the county level. There is also a strong positive association between the percentage of absent landlords and the percentage change in all tillage practices. In terms of the change in the share of cover crops, shown in figure 15, only the absent landlord measure using the 100-mile cutoff has a statistically significant association, and it is negative.

These associations show a mixed picture regarding the effect of absent landlords on measures of soil health. Landlord absenteeism is positively associated with growth in adoption of conservation tillage practices. However, landlord absenteeism is negatively associated with the share of harvested cropland planted with cover crops at the State level. Previous literature analyzing conservation practices (at the county or more local levels) finds that farm operations with tenants were less likely to adopt conservation practices that provide benefits over the longer term. If this reflects the attitudes of operators renting land from absent landlords in general, then we might also expect them to be less likely to engage in conservation tillage practices.

Figure 12

Tillage practice and cover crop adoption by absent landlord measure

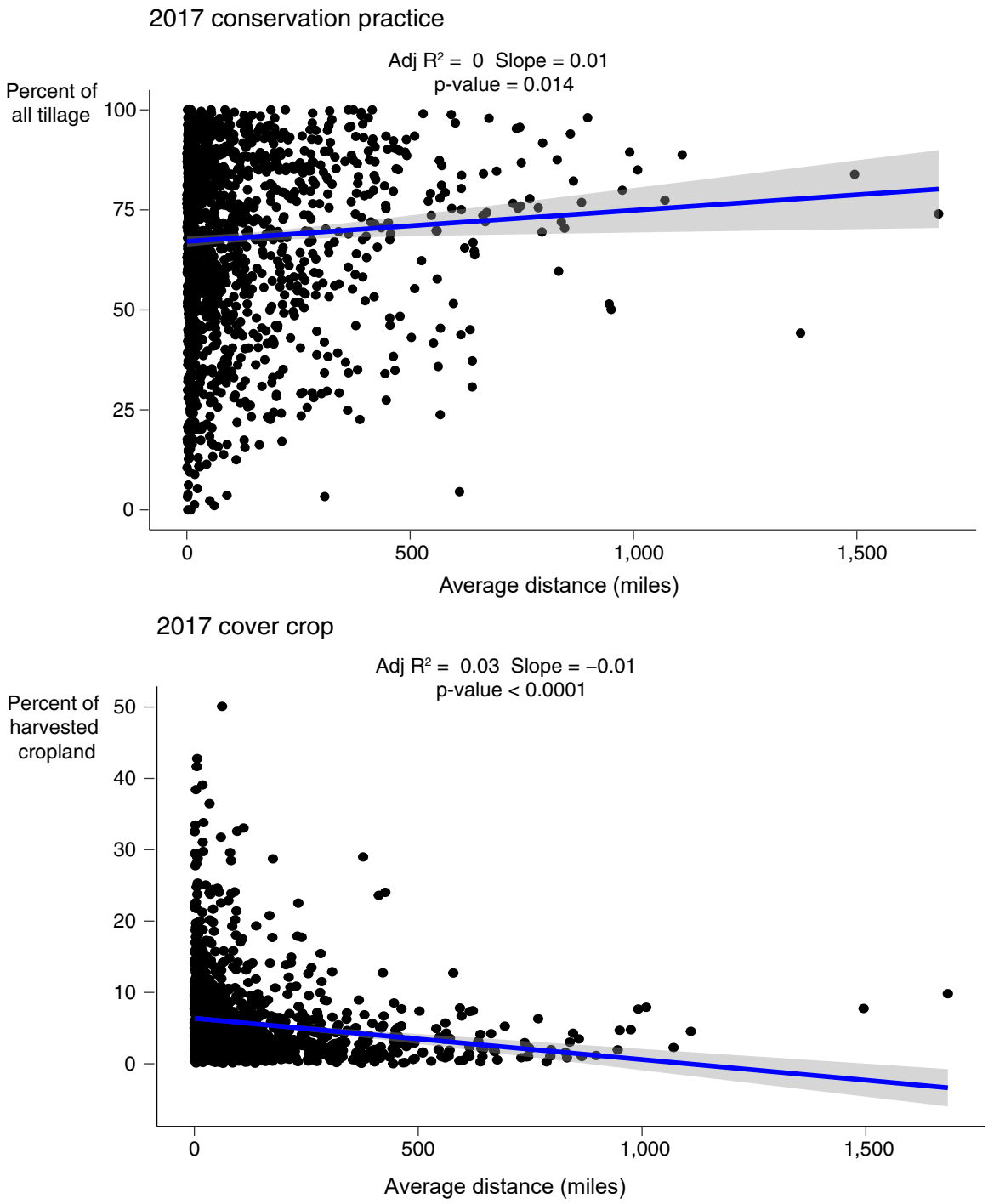


Note: Each point represents survey weighted average values for each State included in the Tenure, Ownership and Transfer of Agricultural Land (TOTAL) survey. The blue line in each sub-chart shows the best linear fit for the data points. Adjusted R^2 is the percentage of the variation in the dependent variable explained by the independent variable. The slope is the estimated regression coefficient. The p-value shows the slope coefficient is significant at the given value. Tillage practice (sum of conservation tillage and no-till acres) reported as share of total tillage acres. Cover crops reported as percentage of total harvested cropland acres.

Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service (NASS), 2014 TOTAL survey; and NASS, 2012 and 2017 Census of Agriculture.

Figure 13

Tillage practice and cover crop adoption by average landlord distance



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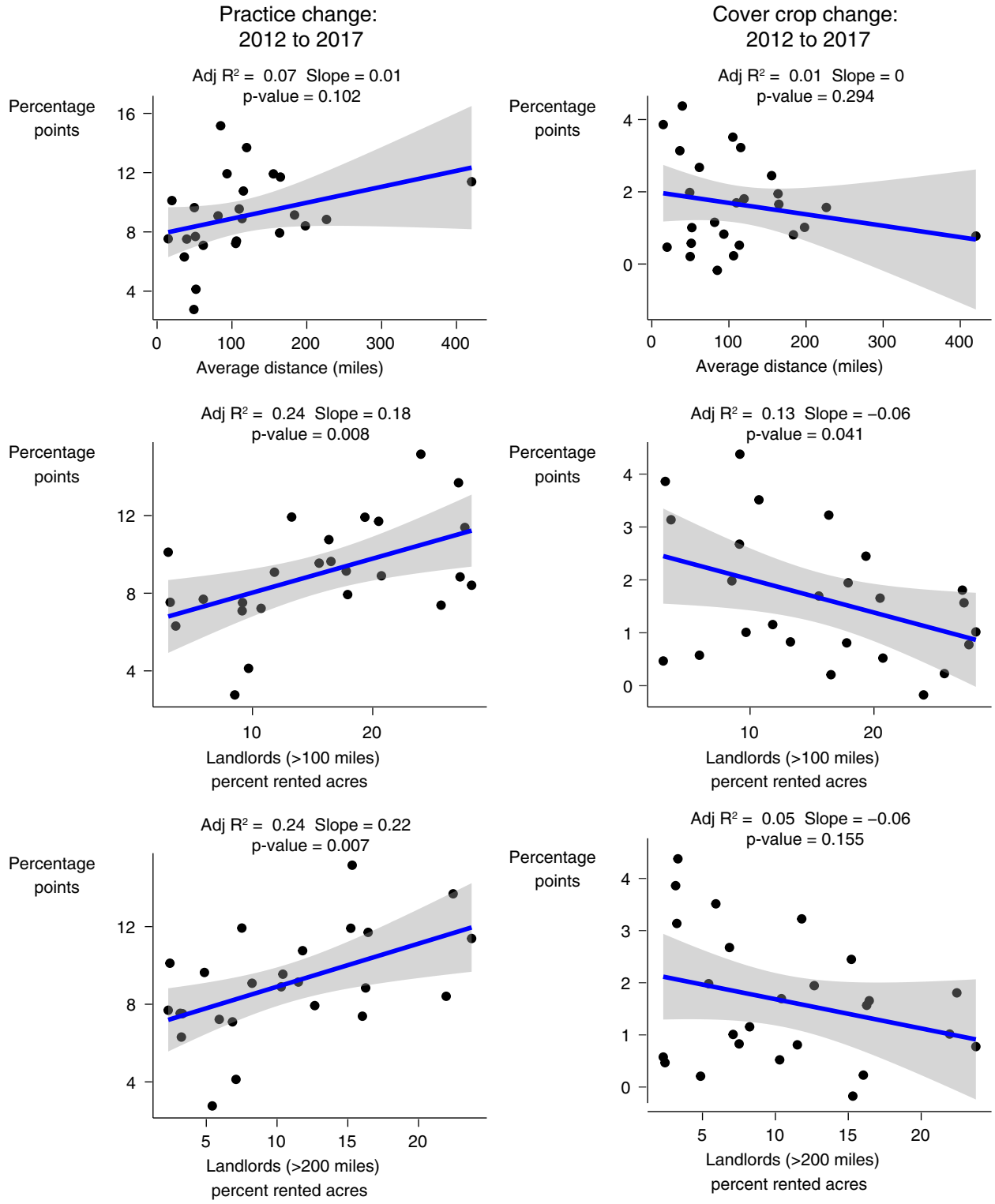
Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service (NASS), 2014 TOTAL survey; and NASS, 2012 and 2017 Census of Agriculture.

Figure 14

Percentage change in tillage practice and cover crop adoption by absent landlord measure between the 2012 and 2017 Census of Agriculture

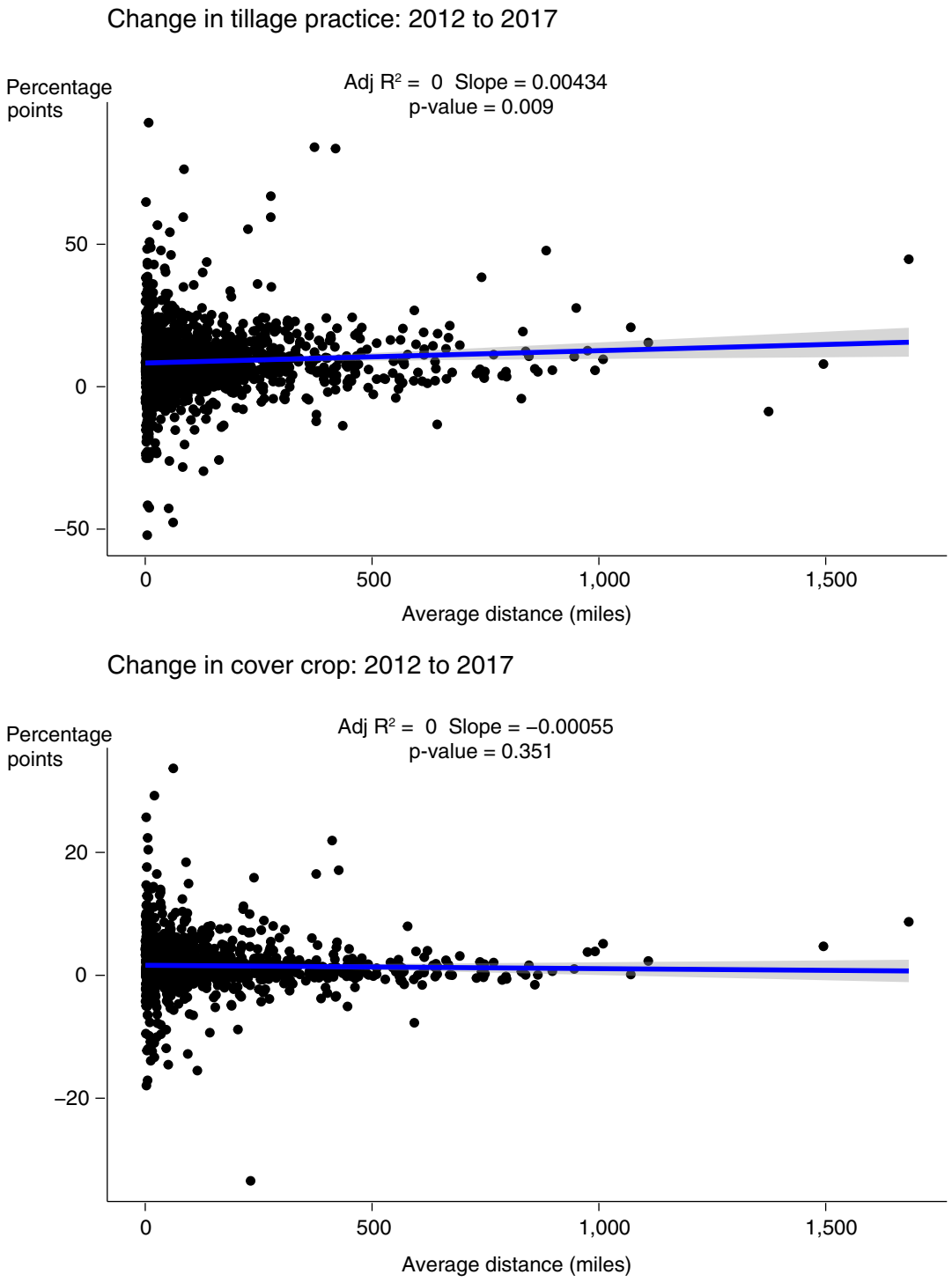


Note: Each point represents survey weighted average values for each State included in the Tenure, Ownership and Transfer of Agricultural Land (TOTAL) survey. The blue line in each sub-chart shows the best linear fit for the data points. Adjusted R^2 is the percentage of the variation in the dependent variable explained by the independent variable. The slope is the estimated regression coefficient. The p-value shows the slope coefficient is significant at the given value.

Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service (NASS), 2014 TOTAL survey; and NASS, 2012 and 2017 Census of Agriculture.

Figure 15

Percentage change in tillage practice and cover crop adoption by average landlord distance between the 2012 and 2017 Census of Agriculture



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Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service (NASS), 2014 TOTAL survey; and NASS, 2012 and 2017 Census of Agriculture.

Rural Economy

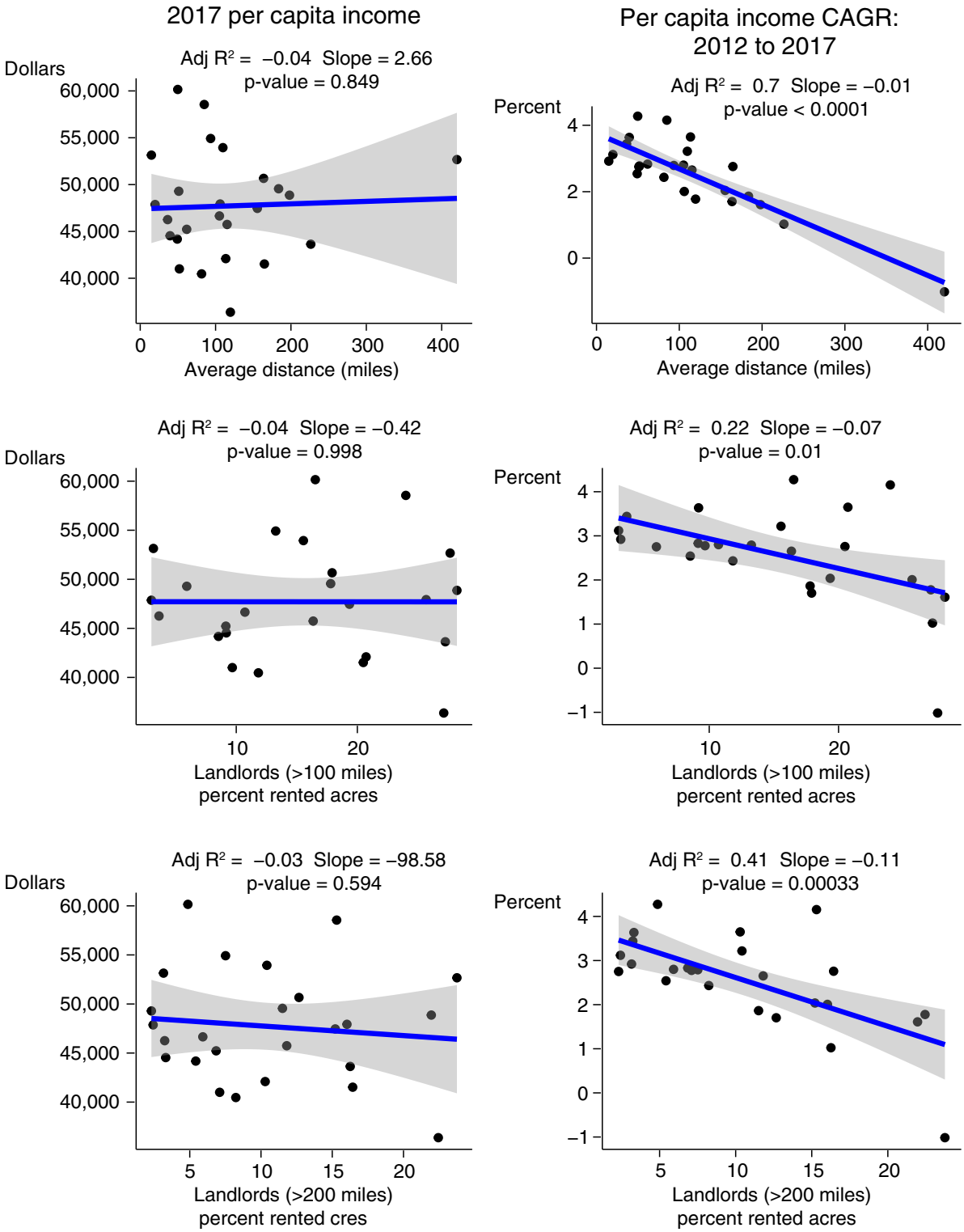
Finally, we explore the statistical associations between absent landlord measures and variables pertaining to local economic health. The economic health variables are per capita income in 2017, the constant annualized growth rate (CAGR) in per capita income between 2012 and 2017, and the CAGR for population and employment rate between 2012 and 2017. The CAGR converts the rate of change between the two growth rates into an annualized compound interest rate. The economic variables come from the Bureau of Economic Analysis (BEA), Personal Income Summary.

We begin with the plots of per capita income. Figure 16 contains the State-level analysis, and figure 17 contains the county-level analysis. At the State level, none of the absent landlord measures shows a statistically significant association with per capita income in 2017; however, they show a negative association when using the growth in per capita income from 2012. In the county-level analysis, the 2017 level of per capita income has no statistical association with average landlord distance. However, as in the State-level analysis, the growth rate in per capita income shows a negative and statistically significant association with average landlord distance. While it could be the case that absent landlords contribute to reduced growth or declines per capita income, it also could be the case that nonlocal investors prefer to buy land in areas with less vibrant economies because of lower financial barriers to entering economically depressed land markets. It could also be the case that agricultural landowners move away from economically depressed areas in search of better opportunities, but maintain ownership of agricultural land for sentimental reasons, becoming absent landlords in the process.

Similar results are evident when comparing measures of landlord absenteeism with population and employment growth rates. Figure 18 shows that, at the State level, no statistically significant association can be found with the CAGR of the population. The average distance and the share of acres by landlords more than 200 miles away are negatively associated with employment growth. At the county level, shown in figure 19, both population and employment growth rates present a slight negative association with average landlord distance. While the magnitudes of the slopes are small, the associations are statistically significant. Given the small magnitudes of the regression coefficients, these results likely have little economic significance.

Figure 16

State per capita income and constant annualized growth rates (CAGR) for per capita income between 2012 and 2017 by absent landlord measure

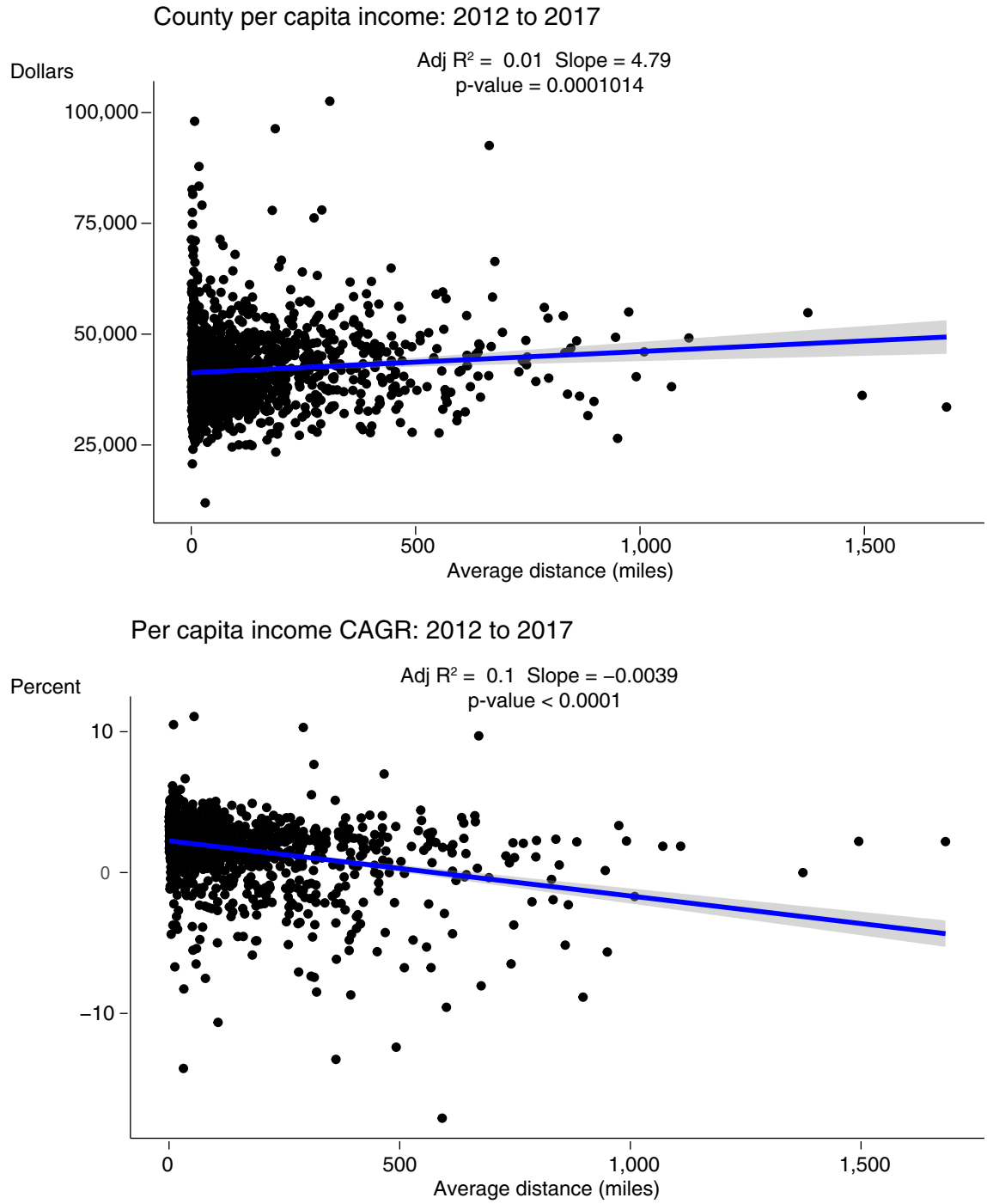


Note: Each point represents survey weighted average values for each State included in the Tenure, Ownership and Transfer of Agricultural Land (TOTAL) survey. The blue line in each sub-chart shows the best linear fit for the data points. Adjusted R^2 is the percentage of the variation in the dependent variable explained by the independent variable. The slope is the estimated regression coefficient. The p-value shows the slope coefficient is significant at the given value.

Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service, 2014 TOTAL survey; and Bureau of Economic Analysis, Personal Income Summary.

Figure 17

County per capita income and constant annualized growth rate (CAGR) in per capita income between 2012 and 2017 by average landlord distance

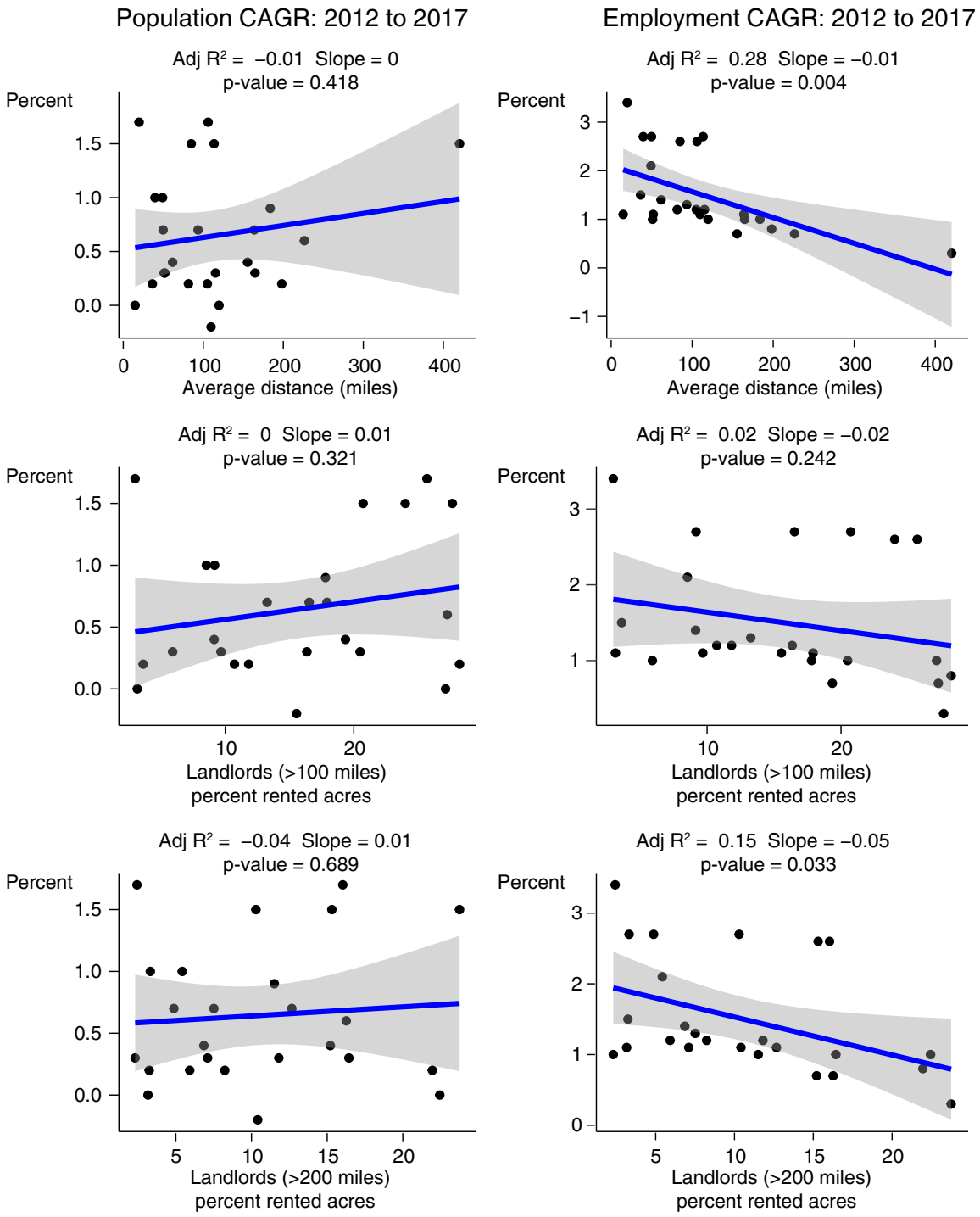


Note: The per capita income regression incorporates State fixed effects. Each point represents survey weighted average values for each State included in the Tenure, Ownership and Transfer of Agricultural Land (TOTAL) survey. The blue line in each sub-chart shows the best linear fit for the data points. Adjusted R2 is the percentage of the variation in the dependent variable explained by the independent variable. The slope is the estimated regression coefficient. The p-value shows the slope coefficient is significant at the given value.

Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service, 2014 TOTAL survey; and Bureau of Economic Analysis, Personal Income Summary.

Figure 18

Population and employment constant annualized growth rate (CAGR) between 2012 and 2017 by absent landlord measure

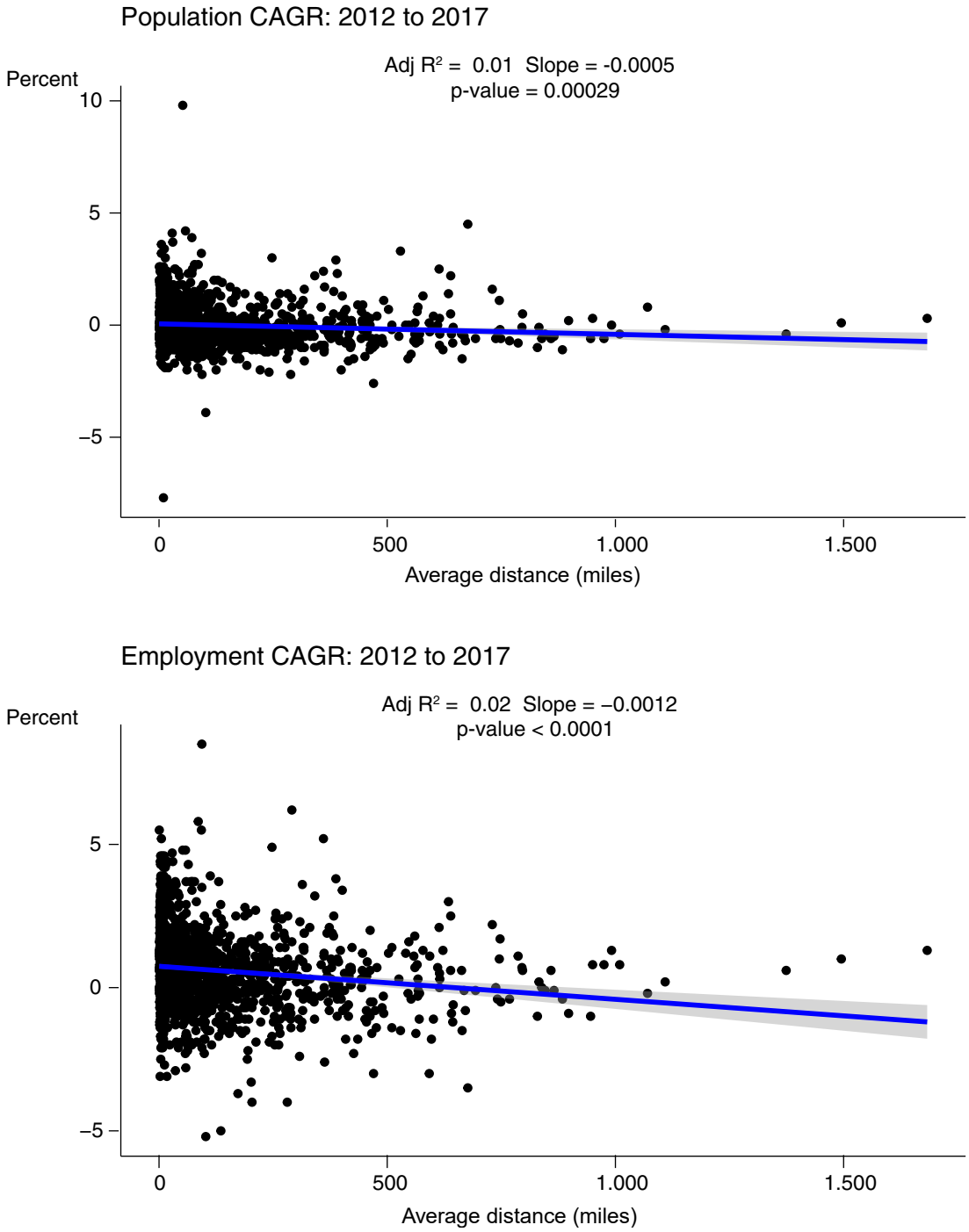


Note: Each point represents survey weighted average values for each State included in the Tenure, Ownership and Transfer of Agricultural Land (TOTAL) survey. The blue line in each sub-chart shows the best linear fit for the data points. Adjusted R^2 is the percentage of the variation in the dependent variable explained by the independent variable. The slope is the estimated regression coefficient. The p-value shows the slope coefficient is significant at the given value.

Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service, 2014 TOTAL survey; and Bureau of Economic Analysis, Personal Income Summary.

Figure 19

Population and employment constant annualized growth rate (CAGR) between 2012 and 2017 by average landlord distance for counties



Note: Each point represents survey weighted average values for each State included in the Tenure, Ownership and Transfer of Agricultural Land (TOTAL) survey. The blue line in each sub-chart shows the best linear fit for the data points. Adjusted R^2 is the percentage of the variation in the dependent variable explained by the independent variable. The slope is the estimated regression coefficient. The p-value shows the slope coefficient is significant at the given value.

Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service, 2014 TOTAL survey; and Bureau of Economic Analysis, Personal Income Summary.

Conclusion

We explore statistical associations between landlord absenteeism at the State and county levels and measures capturing three broad elements: farmland rental rates and value, soil quality, and local economic health. This study analyzes data from the 2014 TOTAL survey to develop one of the few studies using the actual distance between NOLs and their tenants. At the State level, we capture the degree of absenteeism using three different measures: mean landlord distance, share of acres rented out by landlords living more than 100 miles from their tenants, and the share of acres rented out by landlords residing more than 200 miles from their tenants. We use mean landlord distance to carry out the analysis at the county level because of data constraints.

The analysis shows there are statistically significant negative associations between landlord absenteeism and farmland rental rates and values. The State- and county-level analyses consistently show statistically significant and negative association when using the 2017 farmland rental rates and farmland value per acre. However, the association disappears when using growth rates between 2012 and 2017, suggesting that absent landlords aren't contributing to this change. The analysis also shows a negative association between landlord absenteeism and local economic well-being. In the State- and county-level analyses, per capita income growth and employment growth are negatively associated with landlord absenteeism.

The findings are less consistent for the relationship between absent landlord rates and proxy measures of soil health. The change in tillage practices from 2012 to 2017 is positively associated with landlord absenteeism in the State- and county-level analyses; however, no association is found when using the 2017 levels. When we focus on the share of acres with cover crops, the picture is reversed: There are statistically significant negative associations when using the 2017 levels, but no association found when using the change in cover crop adoption between 2012 and 2017. Note that a potential confounding factor in using the two measures as proxies for farmer investment in soil health improvements is that the use of cover crops is far less common (around 5 percent of U.S. harvested cropland is in cover crops) than is conservation tillage. Around 63 percent of harvested cropland is in conservation tillage – no-till or reduced tillage; thus, cover crop use provides a less robust indicator of conservation effects.

We emphasize again that this analysis studies statistical associations between measures of landlord absenteeism and measures of agricultural rents, land values, proxies for soil quality, and measures of local economic health. The methods employed do not allow us to identify any causal link between landlord absenteeism and these measures. Identifying causal relationships are ripe topics for future research.

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