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Farmland Ownership and Leasing: Implications for Young and Beginning Farmers

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Abstract

This study considers the issue of the transition of new farmers into U.S. agriculture, by examining land ownership and leasing trends. Our approach is to characterize the entire distribution by farmer age and farmer experience rather than using young versus old and beginning versus established farmer categories. We also use a linked-farms longitudinal approach instead of a repeated cross-sectional approach to show trends over time in farmland expansion and contraction. Differences in farm size are more pronounced based on farmer experience than farmer age, as farms operated by older beginning farmers tend to be smaller and do not tend to grow over time. We find that it is mostly young farmers as opposed to all beginning farmers that rapidly expand their farm operations after entering agriculture. Our findings inform policy makers about the strategies that young and beginning farmers use to start their businesses and expand over time and suggest more effective approaches for targeting loan programs to young and beginning farmers.

Keywords: farmland ownership, farmland leasing, beginning farmers, young farmers.

JEL: Q12, Q15, Q18

Farmland Ownership and Leasing: Implications for Young and Beginning Farmers

There are significant challenges for young and beginning farmers to start their businesses and develop successful and profitable operations. Young farmer groups often state that their most significant challenge is acquiring access to farmland. Most young and beginning farmers do not inherit their land, and, instead, purchase or lease farmland to start their businesses and grow over time. In today's record-breaking high land value and farmland rental markets, this is doubly challenging. While there are significant disagreements over many issues among policy makers in the U.S. congress in developing the most recent farm legislation, there is notable agreement over the continuation and enhancement of policies designed to support beginning farmers. To effectively implement these policies, there needs to be an improved understanding of the needs of these young and beginning farmers. Loans, grants, and technical advice are provided by USDA agencies, other federal funding options, the Farm Credit System, public and private organizations, programs offered by individual states, and private lenders.

The objective of this research is to provide a deeper understanding about how young and beginning farmers enter agriculture and how they accumulate capital and grow in the beginning years of operating their farms. Previous research has concentrated on snapshots of statistics in each time period, such as the proportion of farmers falling into each age group and the average owned and rented land for beginning versus established farmers. Using cross-sectional data, we know various statistics about beginning farmers, such as the proportion of beginning farmers versus retiring farmers and their current asset holdings. What is missing from the literature is a better understanding of the transition process. This study will examine the dynamics of farm growth in terms of the expansion and contraction patterns of land holdings. These dynamics

over the farmer lifecycle (entering agriculture and asset accumulation) are explored in detail and several patterns of entry as well as operation expansion/contraction are provided for young versus beginning farmers. We calculate land holdings and changes for each farm in terms of acres owned, acres rented from others, acres rented to others, and total acres operated, and present the results along the entire farmer's age and experience distributions.

In light of the interest in supporting beginning farmers, the contribution of this research is to better identify and quantify farmland ownership and leasing dynamics so that capital positions and financing needs can be determined and appropriate government support policies and private sector lending practices can be developed. We accomplish this by using the Census of Agriculture data to track and link farms over time to examine the dynamics and changes in farm operations in terms of land ownership, leasing, and farm size. By using a linked-farms longitudinal approach, instead of repeated cross-sectional approach, we are able to show trends over time in farmland expansion and contraction. We characterize the entire distribution of farmer age and farmer experience instead of using young versus old and beginning versus established farmer categories. This allows us to identify the precise growth rates of land ownership and leasing based on the farmer lifecycle stages in terms of age and years of experience.

Overview of Beginning Farmer Trends

Unlike the general economy, the financial performance of the U.S. farm sector has remained strong. Even during the great recession, the farm sector experienced record sector incomes and farmland values. For 2013, net farm income is expected to increase 15 percent from 2012. This would be the highest inflation-adjusted amount since 1973. Increases in farm asset values are

expected to continue to exceed increases in farm debt, leading to another new record high for farm equity and meaning that farm financial risk indicators are expected to continue at historically low levels. These types of financials would be expected to attract new entrants into agriculture. Indeed, as evidenced by anecdotal stories, though not yet confirmed by lagging data, there is a strong interest among potential entrants into farming.

Aside from the fact that the U.S. has a long history of intervention in agricultural markets, these statistics raise the question about why there is a policy interest in fostering new entrants into farming. Is the sector not performing well and free market forces would be expected to "manage" the creative destructive forces of entry and exit? Certainly the overriding source of policy interest comes from distributional issues. In particular, the concentration of production, the concentration of land and wealth, and the concentration of government subsidies have all continued to increase over time. More specifically, the 2007 Census of Agriculture reports that the largest 6% of farms in terms of gross farm sales account for 75% of sales, 32% of real estate assets, and 39% of government farm payments.

Concomitant with these developments, there has been an increase in the share of farmers that are older and a declining share of young farmers. In 2011, the average age of principal farm operators was 58, and nearly one-third were 65 years old or more. Only 4% of principal farm operators were under 35 years old. Policy makers often refer to the aging farmer population as an indicator that policies are needed to foster entry into farming. While policies may be desirable, it is also important to recognize the many factors are affecting the farmer's age distribution. First, farmers are living longer similarly to the rest of the population. This may mean that, in the case where the farm operator's children will take over the farm, the adult

children remain working off the farm until the elder generation is ready to retire and transfer the farm.

Moreover, many farmers indicate that they intend to never retire from farming (Beginning Farmer Center, 2013). This is possible because farmers can retire from the physically taxing chores of farming and still remain as lead managers and principal owners of their operations. It is also possible to never retire from farming because aging farmers can simply stop producing or significantly reduce production but easily be counted as a farm under the USDA's very inclusive definition of a farm. A place need only have $1000 in sales or the potential for $1000 in sales to be defined as a farm. That includes a farm enrolled in the Conservation Reserve Program or one that has 2 cows or 2 acres of corn. A farm family has many reasons to prefer to continue farming, including nonpecuniary – the farm is a family home and preferred lifestyle – and pecuniary – there are strong tax motivations for continuing farming (Williamson, 2013).

Aside from the increasing number and share of older farmers, there has been an absolute decline in the number of young farmers. Several factors explain the aging farmer population phenomenon. First, aspiring young farmers are now attending college at a rate equal to the general population. In 2011, 25% of all farmers attained a 4-year college degree compared to 28% for the general population. (In 1964, only 4% of farmers and 8% of the general population had a college degree.) Younger farmers are more likely to have college degrees. In addition, many young aspiring farmers choose to work in an off-farm job before entering farming to gain the experience or to save for the needed capital investments of farming, or most likely both. In short, there are several reasons to expect an aging farmer population.

What policy makers attempt to address through various policies is to assist aspiring farmers by reducing the barriers to entry into farming. For the reasons discussed above, the aging farm population is a poor indicator of the need for these policies. Moreover, it is often erroneously assumed that all beginning farmers are young. In 2011, 37% of beginning farmers (with 10 years or less of experience) were 55 years or older. Only 14% were under 35. Therefore, many beginning farmers are starting their businesses later in life, with potentially different financing needs than those of younger farmers.

Current Policy on Beginning Farmers

Farm transitions have been identified as one of the major upcoming structural changes in agriculture that concerns policy makers, according to Secretary of Agriculture Thomas Vilsack speaking at the 2013 Farm Transitions Conference and USDA's 2013 Agricultural Outlook Forum. The well known challenges of the aging farmer population as well as the need to transition ownership and control of farmland has led to concerns about the large share of farmland that is likely to change hands in the near future and the need to provide support and training for beginning farmers to start their businesses.

USDA programs have targeted assistance to beginning farmers and ranchers since the 1992 Agricultural Credit Improvement Act. Farms or ranches are considered "beginning" if the operators have managed them for 10 years or less. The 2008 farm legislation expanded the types of programs designed to support beginning farmers beyond loan programs. Eight of the 15 titles in the legislation specifically target beginning farmers. These include special considerations in conservation programs--both the CRP and working lands programs--set-asides and priorities in Farm Service Agency loan programs, set-asides in the value-added grants programs, funding for

training programs in the Beginning Farmer and Rancher Development Programs, special consideration in the biomass crop production assistance program, and special exemption from the minimum risk protection purchases in the crop insurance program.

The development of the next so-called "farm bill" has been a long process. The first hearings in preparation for the development of the legislation were held in April 2010 on the House side and in June 2010 on the Senate side. With slow progress on the final legislation, a group of legislators concerned with the needs of beginning farmers introduced the "Beginning Farmer and Rancher Opportunity Act of 2013" in the Senate and House earlier in 2013. The bills sought to expand opportunities and remove barriers for beginning farmers and those who wish to pursue a career in agriculture. The bill tackles the significant barriers to starting a farm in the US, including access to credit, land and training opportunities. The goal of the bill was to assist in framing the provisions relating to beginning farmers in the developing Farm Bill.

At this time, the House and the Senate have appointed conference members whose leaders are meeting to reach agreement on issues on which there continues to be significantly different visions within the House and Senate versions of the farm bill, including the Commodity Title and the Nutrition Title. In contrast, the differences between the House and the Senate versions of the bills on provisions affecting beginning farmer programs are relatively minor. Regarding direct and guaranteed loans, current levels of funding were authorized by both sides and both sides agreed to relax the eligibility requirement that a farmer have three years of farming experience to apply. Both the House and Senate versions of the bill increased the down payment provisions for beginning farmers. The Senate version granted the Secretary of Agriculture authority to pilot different types of loans, as it has done with its microloan program, which would be more efficient in meeting the needs of beginning farmers.

Both the House and the Senate versions of the bill continue the Beginning Farmer and Rancher Development Programs, though at different funding levels. These training programs have been very popular, with over 40,000 young and beginning farmers in 48 states through 145 projects having received training and assistance in business planning, farming and marketing practices. Both versions of the bill also continue the Conservation Reserve Program-Transition Incentive Program but at differing funding levels. This program has provided more than 1,700 contracts which encourage exiting CRP enrollees to rent or sell their land to beginning farmers. These contracts allowed beginning farmers to farm over 275,000 acres of farm or ranch land in 26 states. Both of these popular programs, the training program and the CRP Transition program, expired at the end of September 2012.

A major difference in the developing farm bill from the previous one is the shift of a farm safety net based on direct payments to one based on crop insurance. The crop insurance provisions affecting beginning farmers are very similar between the 2013 House and Senate versions, but are expanded in important ways from the 2008 legislation. In particular, the developing farm bills include reduced administrative costs for beginning farmers, increased premium assistance for beginning farmers, and special consideration of the calculation of the "Actual Production History" for beginning farmers. In addition, both the House and Senate allow producers to "buy up" coverage in the noninsured crop assistance program (NAP). This will be beneficial for beginning farmers because they are more likely to produce commodities not traditionally covered by crop insurance. Additionally, there will be increased premium assistance for beginning farmers in NAP.

In addition to the loan provisions of the farm bills, the Farm Credit System, a government sponsored enterprise, targets loans to young, small, and beginning farms. The Farm Credit

System was established by Congress in 1916 and its current authority is the Farm Credit Act of 1971. In 2011, the System made nearly $10 billion in new farm loans to beginning farmers.

Literature Review

There is an extensive literature on beginning farmers and ranchers. Ahearn and Newton (2009) and Ahearn (2013) provide an overview of beginning farmers, analyzing their characteristics and pointing out the declining number of beginning farmers. Beginning and young farmers have several challenges to entering agriculture, with the major ones being access to land and access to government programs (Meyer et al., 2011; Sureshwaran and Richie, 2011; Thilmany and Sureshwaran, 2011; Ahearn, 2011; Ahearn and Newton, 2011; Meyer, Katchova, and Hunter, 2011). Not all beginning farmers are young, and research shows that farm entry, exit, and growth decisions follow the stages of the farm operator's lifecycle (Boehlje 1973; Gale 1994; Gale, 2003; Ahearn Korb, and Yee, 2009; and Whittaker and Ahearn, 1991). Farm succession decisions are also shown to be significantly influenced by farmer's age showing the need for further research based on the farmer's lifecycle stages (Mishra, El-Osta, and Shaik, 2003). Most small business owners report that they do not want to grow or innovate, but rather there are nonpecuniary benefits of small business ownerships that drive owners to start businesses and remain small (Hurst and Pugsley, 2011).

Government policy and government payments affect the financial performance of beginning farmers differently than performance for the rest of the farmers (Kropp and Katchova, 2011, Katchova, 2010). Farmland holdings growth for beginning farmers is also influenced by the Aggie Bond program, in the states where it is available, possibly due to additional financing being available for beginning farmers (Williamson and Katchova, 2013). These studies

underscore the importance of financial performance, capital constraints, and government programs for the successful start-up of farm operations by beginning farmers.

The literature on farmland values, farmland ownership, and tenure arrangements is also extensive. Many studies have been conducted on farmland values and performance of farmland investments (for an overview, see Moss and Katchova, 2005). The recent trends in U.S. farm values and ownership are analyzed in Nickerson et al. (2013), pointing out that on average about 40% of the farmland is currently being rented with significant geographical differences. Farmland is increasingly being held by aging, older farmers which may also affect farmland values when land is transferred down to the next generation (Duffy, 2011). Other studies examine the effects of wealth or debt on farmland ownership (Weber and Key, 2013 and Briggeman, 2011).

While there is an established literature on beginning farmers, farmland, and capital needs, there is a gap in the literature on the transition process of young and beginning farmers. In particular, there is a need for an improved understanding of the diversity in the transition process that can contribute to better informed policies. Our goal is to extend the literature by analyzing the dynamic paths of farm expansion, contraction, and changes in farm size for young and beginning farmers.

Approach and Methodology

The Census of Agriculture data are used for this study. The Census of Agriculture is conducted every 5 years, with the most recent Censuses conducted in 1997, 2002, and 2007 (data from the 2012 Census are not available yet). The Census includes information on farmland holdings (owned, rented from others, rented to others, and total operated acres) and their values. It also

includes information and characteristics on the primary operators including farmer age and number of years of farming experience.

We use the Census data without aggregating them into age and experience categories as is typically done in other studies. Trends that cannot be seen from aggregate, categorical data (e.g. beginning versus established farmer categories, and young versus old farmer categories) are now determined considering the entire distribution of farmer age and farmer experience. This methodology allows for determining the farmer age and experience at which land ownership and leasing trends change in levels (cross-sectional comparisons among farmers) and differences (changes over time for the same farmers).

The typical approach is to use Census data as repeated cross-sectional data. However, with repeated cross-sectional data, the composition of the sample can change over time making it hard to observe valid trends and changes over time. Our approach involves tracking the same farms in all three Censuses using a farm id number assigned by USDA-NASS. Of the 2.2 million farms, 875,709 farms or about 39.7% of the farms can be found in all three Censuses in 1997, 2002, and 2007. We refer to this panel of farms participating in all three Censuses as continuing, linked farms. Using the linked-farms longitudinal data, we are able to analyze growth rates in farmland ownership and leasing for farmers.

For these cohorts of farms, we will track the expansion strategies of young and beginning farmers as well as the contraction strategies of retiring farmers as they prepare for farm transitions. We expect that younger farmers will expand rapidly through both purchasing and leasing farmland, while older farmers will continue owning their existing farmland while reducing the level of farmland leasing.

It is important to note that when the analysis is done for farms that are continuing operations and linked over time, their designation of beginning farmers (10 years or less of experience) or young farmers (farmer age is less than 35) is as of 1997. Since their age and experience increased by 5 years in 2002 and by 10 years in 2007, a beginning farm in 1997 would be an established farm by 2007 and a young farmer is 1997 will likely be joining the mid-age group of farmers by 2007.

Farmer Age Distribution

According to statistics from the U.S. Census of Agriculture, the population of U.S. farmers has been aging. The average age of a principal operator has increased by close to one year from one Census to the next, from 50.3 in 1978 to 54 in 1997, 55.3 in 2002, and 57.1 in 2007. Using the Census of Agriculture data allows for a greater level of detail based on each year of farmer age instead of using aggregate age categories. Figure 1 shows the number of farms that have a primary operator of a particular age in the 1997, 2002, and 2007 Censuses. Data are not aggregated in age categories, but the entire age distribution is used. The results show that the farmers' age distribution is approximately bell-shaped or normal. The graph peaks between ages 50s and early 60s, which is consistent with the average age of farmers being 57 in 2007. When comparing age distributions from the three Censuses, there is also a noticeable shift of the age distribution to the right, which confirms that farmers are aging – there are fewer younger farmers and more farmers who are older than 50.

The age distributions of beginning farmers (with farming experience of 10 years or less) from the three Censuses are also depicted on the same graph. The distribution of all farmers and beginning farmers is identical for farmers younger than 28 as they are by definition beginning

farmers. Beginning farmers' age distribution is also close to normal, but peaking a decade earlier (in the 40s) than the distribution for established farmers. It is interesting to note that beginning farmers are not entering agriculture either young or older after retirement, but at any age along the distribution. The age distribution for beginning farmers is also shifting to the right, which indicates that beginning farmers are aging too.

Farms that have principal operators younger than 35 have declined both in numbers and percentages of the total farm population over the last three Censuses. The number of young farmers declined from 178,611 (8% of all farms) in 1997 to 123,105 (5.8%) in 2002 to 118,636 (5.3%) in 2007. The number of farms operated by beginning farmers has remained relatively stable over time, from 692,674 in 1997 to 720,578 in 2002 to 715,408 in 2007, but the proportion of beginning farmers compared to all farms has declined over time. Beginning farmers were 37.6% of all farms in 1997, but only 33.8% in 2002 and 32.4% in 2007. It is interesting to compare that there were only 118,636 young farmers under 35 (5.3% of the farms) versus 715,408 beginning farms (32.4% of all farms) in 2007, so there are very few young farmers (who are also beginning) in comparison to all beginning farmers that can be of any age. The presence of fewer young farmers is of particularly notable, and therefore, a good target group for policy intervention and support programs for young farmers as opposed to all beginning farmers.

Land Ownership and Leasing

Table 1 shows the average number of owned acres, acres rented from others, acres rented to others, and total operated acres for all farms in the three Censuses (1997, 2002, and 2007). The statistics are presented for all farmers and for the continuing, linked farms in the three Censuses and then for groups of beginning versus established farms and young, mid-age, and older

farmers. The average number of total operated acres for all farms is 431 in 1997, 442 in 2002, and 419 in 2007. The continuing, linked farms tend to be larger with average number of operated acres being 554, 604, and 590 in 1997, 2002, and 2007 respectively.

Beginning farms are smaller – the average number of operated acres is 252 (with 191 owned acres and 86 rented acres) for beginning farms, as compared to 419 total operated acres (with 294 owned acres and 162 rented acres) for all farms in 2007. Farms operated by young farmers are also smaller – the average number of operated acres is 307 (with 131 owned acres and 194 rented acres) for young farmers in 2007. Although they own fewer acres, young farmers rent more acres than beginning farmers or all farmers. Young farmers use farmland leasing extensively as an entry strategy into farming.

Analysis by Farmer Age – Young, Mid-Age, and Older Farmers

Figure 2 presents repeated cross-sectional data from the 1997, 2002, and 2007 Censuses. Across the farmer age distribution, younger farmers own less land while older farmers own more land. Even for farmers in retirement age, the older farmers are, the more land they own. The number of rented acres is similar for younger farmers, while farmers older than 50 tend to rent fewer acres. Farmland rented to others (denoted with negative values in figure 2) is much smaller in magnitude when compared to owned or rented from others acres, and is only marginally higher for older farmers. Total operated acres are calculated as owned acres plus acres rented from others minus acres rented to others, and represent farm size. The total operated acres increase across the age distribution until the 50s (due to increasing land ownership with stable leasing) and then slightly decrease after that point since more land ownership is offset by less land

leasing. When comparing cross-sectional data from the three Censuses, it is difficult to uncover any noticeable trends over time.

Figure 3 shows land ownership and leasing trends using linked-farms longitudinal data. The horizontal axis is a triple axis representing farmer's age in 1997, who would be 5 years older in 2002 and another 5 years older in 2007. For the cohort of linked, continuing farms, the vertical distance between the graphs represents the change from one Census to the next. These differences in terms of number of acres and growth rates in terms of percent changes between 1997 and 2007 are presented in table 2. Young farmers rapidly expand their operations by both owning more land and renting more land over time – for young farmers under 35, annual growth rates were 7.9% for owned land, 4.5% for rented land, and 5.6% for operated land over the 10 year span from 1997 to 2007 (table 2). On the other hand, older farmers had a reduction in their farm size – owned acres remained similar (0% growth), but rented acres declined by 3.1% annually leading to an annual reduction in operated acres by 1.2% between 1997 and 2007 (table 2). By using linked-farms longitudinal data, we can now see strong trends over time and contrasting differences for younger versus older farmers that were not noticeable using repeated cross-sectional data.

Figure 4 is obtained from figure 3 as annual growth rates which are calculated as the differences between 2007 and 1997 divided by initial positions in 1997 for owned, rented, and operated acres. The points where the lines cross zero (zero growth rate), correspond to where the lines cross each other in figure 3 (number of acres is the same over time). There is generally a decreasing growth rate for land ownership and leasing as farmers age - at some point the growth rates turn negative (the farm business expansion turns into a contraction). The growth rate in owned acres is decreasing and only turns slightly negative for farmers older than mid-60s.

Rented acres turn from positive to negative growth rates for farmers in their mid-40s. Operated acres switch from positive to negative growth in the mid-50s (due to the offsetting effects of owned and rented acres). The use of longitudinal data and the entire age distribution allows us to determine growth rates based on farmer's age, and to pin point the lifecycle stages of farm business expansion and contraction of farmland.

Next, the analysis is subset to include only farmers who were beginning farmers (with 10 years or less of experience) in 1997 (figure 5). The results for young farmers are identical because young farmers are also beginning farmers. The results for older farmers who are also beginning farmers are similar, but the difference is that their farm size is about half of the farm size for all old farmers and the contraction of the farm for older beginning farmers is not as strong as when all old farmers are considered. In other words, after older beginning farmers start their farm businesses, there is no further expansion as seen for young beginning farmers. These results imply that older beginning farmers may need capital to start their businesses at an "optimal size" but no further capital is needed for subsequent expansion of the farm business.

Analysis by Farmer Experience – Beginning Farmers versus Established Farmers

The same analysis for land ownership and leasing is repeated by years of experience instead of farmer's age. Figure 6 shows owned, rented, and operated acres by farmer's years of experience using cross-sectional data. Note that established farmers with more years of experience will be older, while beginning farmers with less experience will include all age groups: young, mid-age, and old farmers. The overall findings are similar, but there are more pronounced differences along the experience distribution than along the age distribution. This is because older farmers with significant farming experience operate larger farms than older farmers who are beginning

farmers. Across the farming experience distribution, beginning farmers own less land and established farmers own more land. There is a pronounced "peak" in rented acres at about 30-35 years of farming experience. The operated acres increase across the experience distribution (driven by higher land ownership) and are more stable for farmers with more than 30 years of experience (since more land ownership is offset by less land leasing). It is again difficult to discern trends over time using repeated cross-sectional data.

When using linked-farms longitudinal data, several trends can be noticed (figures 7 and 8). Beginning farmers with 10 years or less of experience, who can be of any age, expand their operations by both owning and leasing more farmland but their farm expansions are not as strong as for young farmers. For beginning farmers, annual growth rates were 3.0% for owned land, 2.6% for rented land, and 2.9% for operated land between 1997 and 2007 (table 2). Established farmers with more than 10 years of experience do not change the size of their operation as much – owned acres increased by 1.7% annually and rented acres declined by 0.7% annually leading to an overall increase in operated acres by 0.4%.

Conclusions and Policy Implications

This study used the Census of Agriculture data to show the land ownership and leasing positions and changes over time for young and beginning farmers. New insights are obtained about farmer behavior that cannot be seen in aggregate, categorical data but can be determined across the entire distribution of farmer age and experience.

Our main findings are that after initial entry into agriculture, beginning farmers further expand their operations only if they are also young. It is common for young beginning farmers to rapidly expand their farm size by both owning more and renting more. Although we do not

have any representative attitudinal data to support our conclusion, we suspect young farmers are motivated to expand to attain economies of size and/or generate an income that can support a family on a full-time farming occupation. Older beginning farmers enter at a farm size that subsequently changes little with time. It is likely that many of these older beginning farmers are entering farming for the lifestyle and investment opportunities after engaging in a successful nonfarm career, a view that is supported by their higher net worth. These differences in motivations for entering farming are recognized by the beginning farmer population as is evident from anecdotal concerns expressed by young farmers. For example, as part of its policy platform, the National Young Farmers Coalition has recommended that land with conservation easements be coupled with affordability and "active farming" requirements so as to discourage investment by those beginning farmers with an investment motivation that helps to bid up the price of farmland (National Young Farmers, 2013).

Young and beginning farmers may start their farm businesses by purchasing or leasing farm real estate. There is substantial leasing among young and beginning farmers and as they get older they tend to purchase more and lease less farmland. Young farmers may not have the necessary capital to purchase farmland. On the other hand, they might want to rely on leasing because of the high cash flow requirement to purchase farmland, the added risk that comes with owning farmland, and the low returns on owned real estate. We show the prevalence of leasing farmland particularly among young farmers which is critical in the first few years to expand their farm operations.

These new results showing the entry positions of young and beginning farmers and the extent of farm expansions after entering agriculture have several policy implications. Historically, farm bill policy has been supporting beginning farmers with 10 years or less of

experience, regardless of their age. It is likely that this approach is nested in the assumption that all beginning farmers are young and motivated to expand their operations. However, it is not clear if policy makers recognize that many of the beneficiaries of the beginning farmer programs are older operators who may be entering farming for the lifestyle and/or financial benefits (e.g., for investment and tax management purposes), rather than to contribute significantly to agricultural production. On the other hand, older beginning farmers may be helping to revitalize rural communities.

Depending on their age, we show that beginning farmers have different capital needs in terms of purchasing or leasing farmland and that they likely need different support programs to start their businesses. Young farmers may have similar needs to initially acquire farmland as older beginning farmers, but subsequently young farmers need additional capital for purchasing additional farmland to expand their operations. In addition, young farmers may be more risky in terms of loan repayment risk and thus may face more credit constraints to start their operations. These considerations make it important for policy makers to have a clearer sense of their policy goals in targeting beginning farmers, including targeting young farmers and tailoring farm policy support for their needs.

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Figure 1. Age Distribution for All Farmers and Beginning Farmers

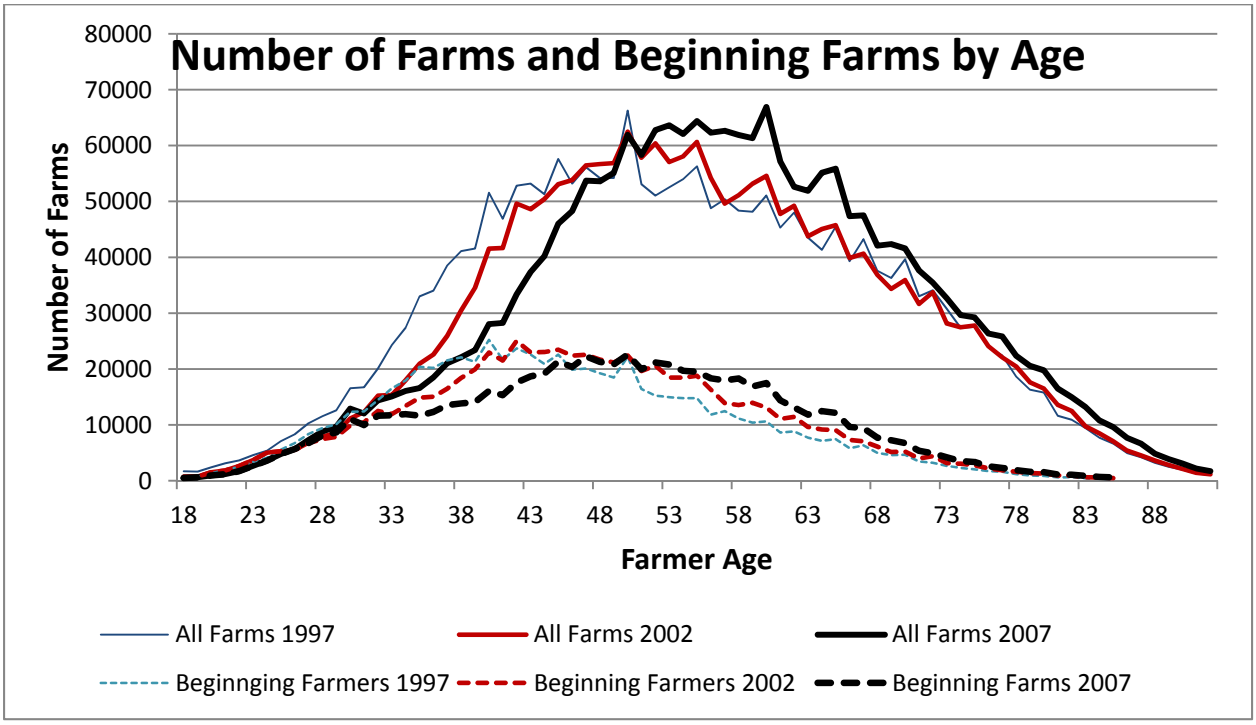

Figure 2. Land Ownership and Leasing using Cross-Sectional Data

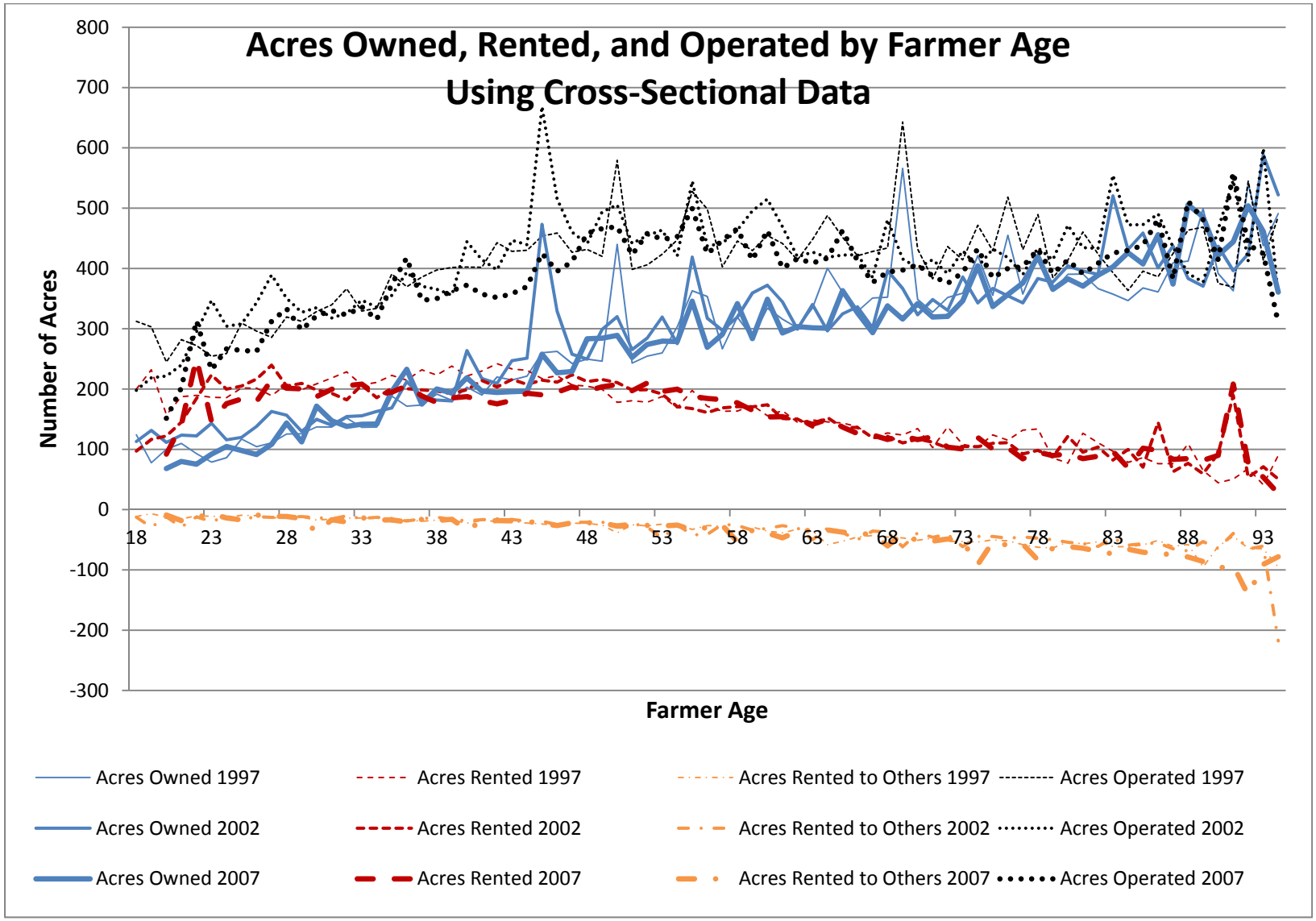

Figure 3. Land Ownership and Leasing using Linked-Farms Longitudinal Data

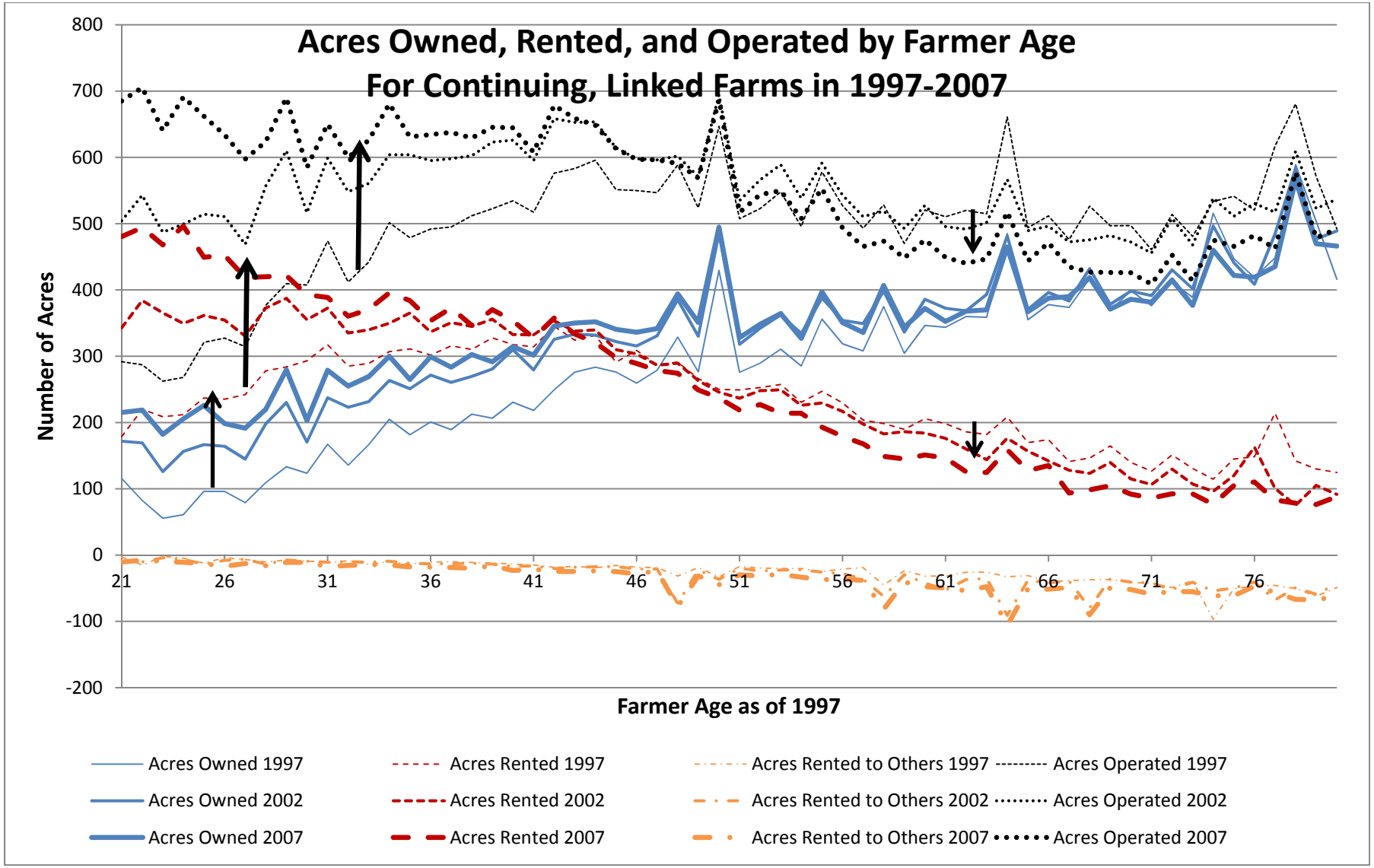

Figure 4. Growth Rates in Land Ownership and Leasing and Farm Size by Farmer Age

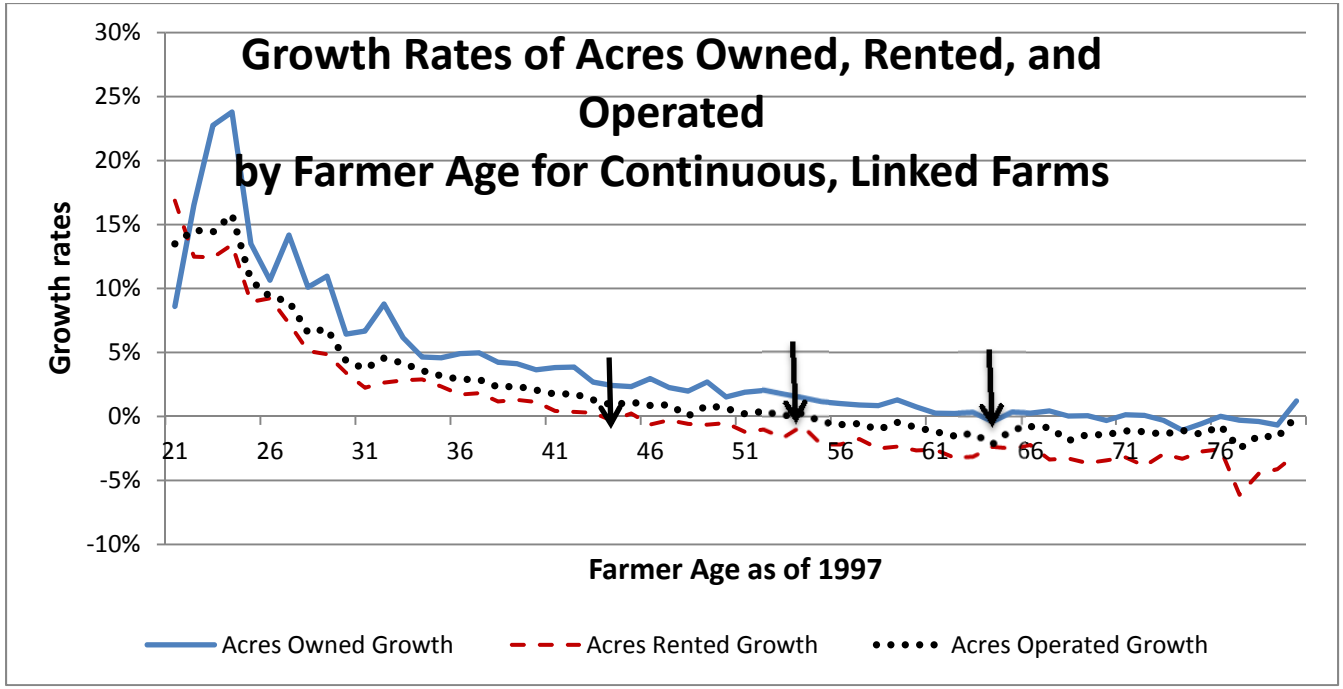
Growth Rates of Acres Owned, Rented, and Operated
by Farmer Age for Continuous, Linked Farms
Growth rates
30%
25%
20%
15%
10%
5%
0%
-5%
-10%
21
26
31
36
41
46
51
56
61
66
71
76
Farmer Age as of 1997
Acres Owned Growth
Acres Rented Growth
Acres Operated Growth

Figure 5. Changes in Land Ownership and Renting for Beginning Farmers

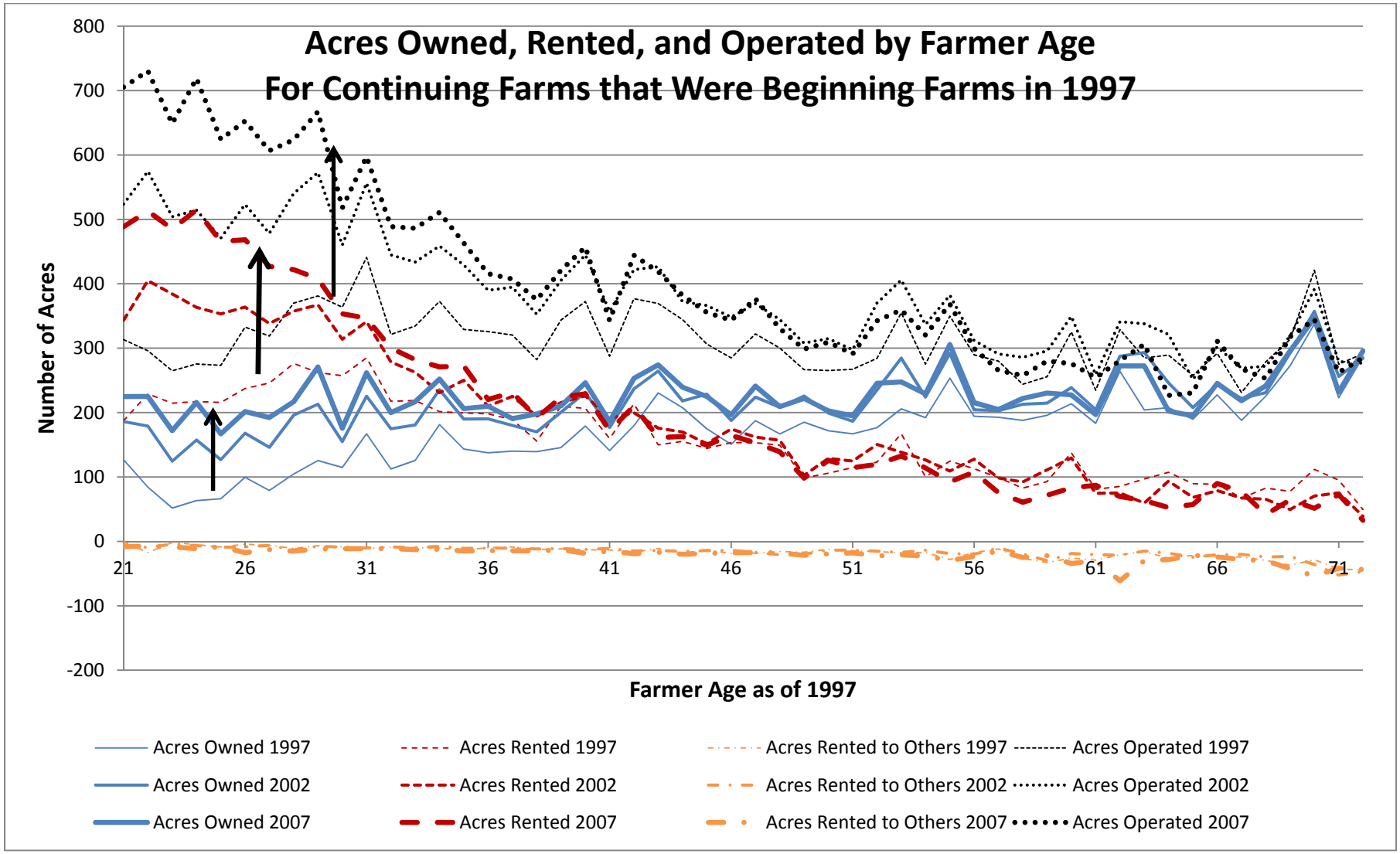

Figure 6. Land Ownership and Renting by Years of Experience Using Cross-Sectional Data

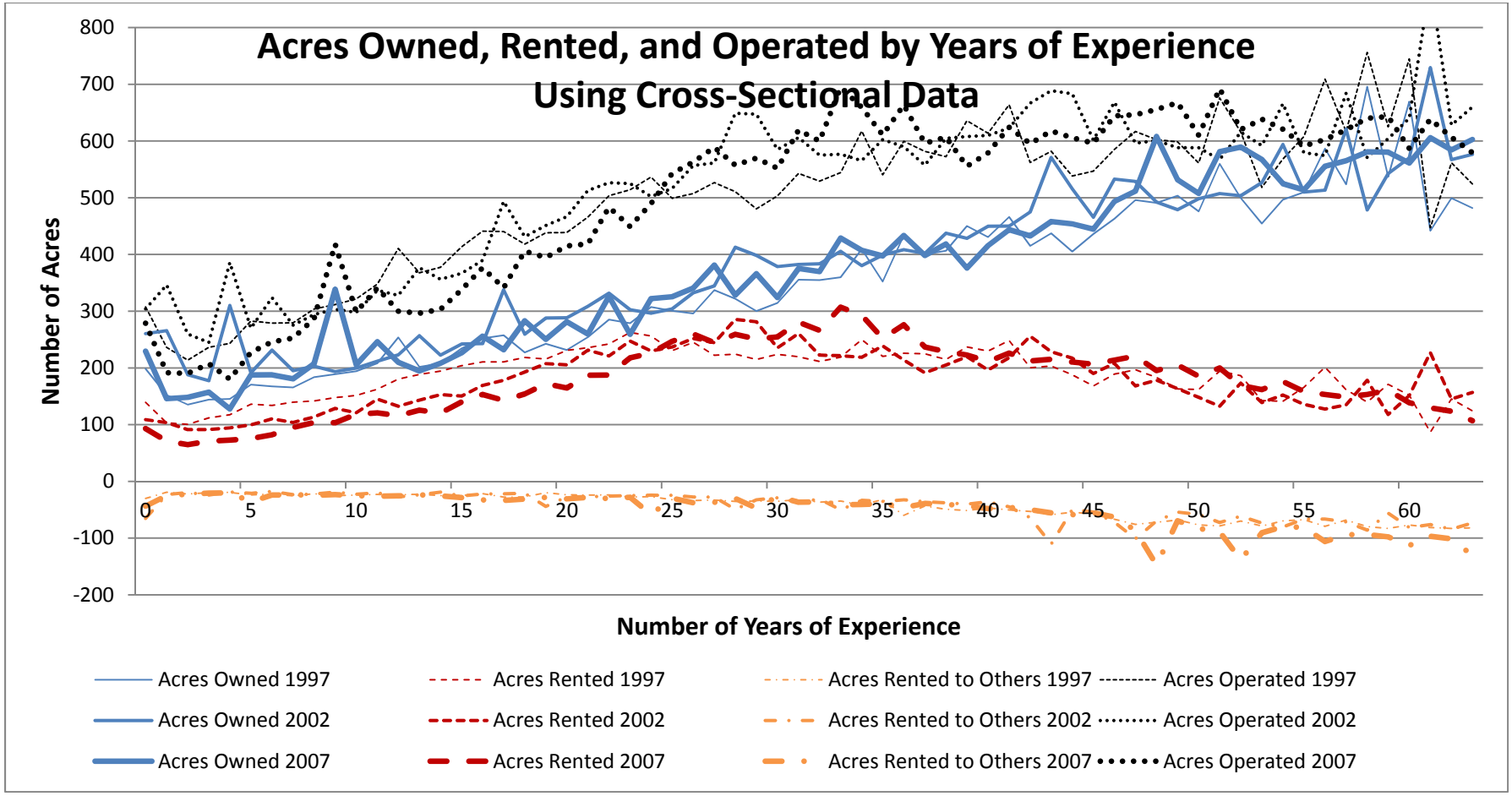
Acres Owned, Rented, and Operated by Years of Experience
Using Cross-Sectional Data
Number of Acres
800
700
600
500
400
300
200
100
0
-100
-200
0
5
10
15
20
25
30
35
40
45
50
55
60
Number of Years of Experience
Acres Owned 1997
Acres Rented 1997
Acres Rented to Others 1997
Acres Operated 1997
Acres Owned 2002
Acres Rented 2002
Acres Rented to Others 2002
Acres Operated 2002
Acres Owned 2007
Acres Rented 2007
Acres Rented to Others 2007
Acres Operated 2007

Figure 7. Land Ownership and Leasing by Years of Experience using Linked-Farms Longitudinal Data

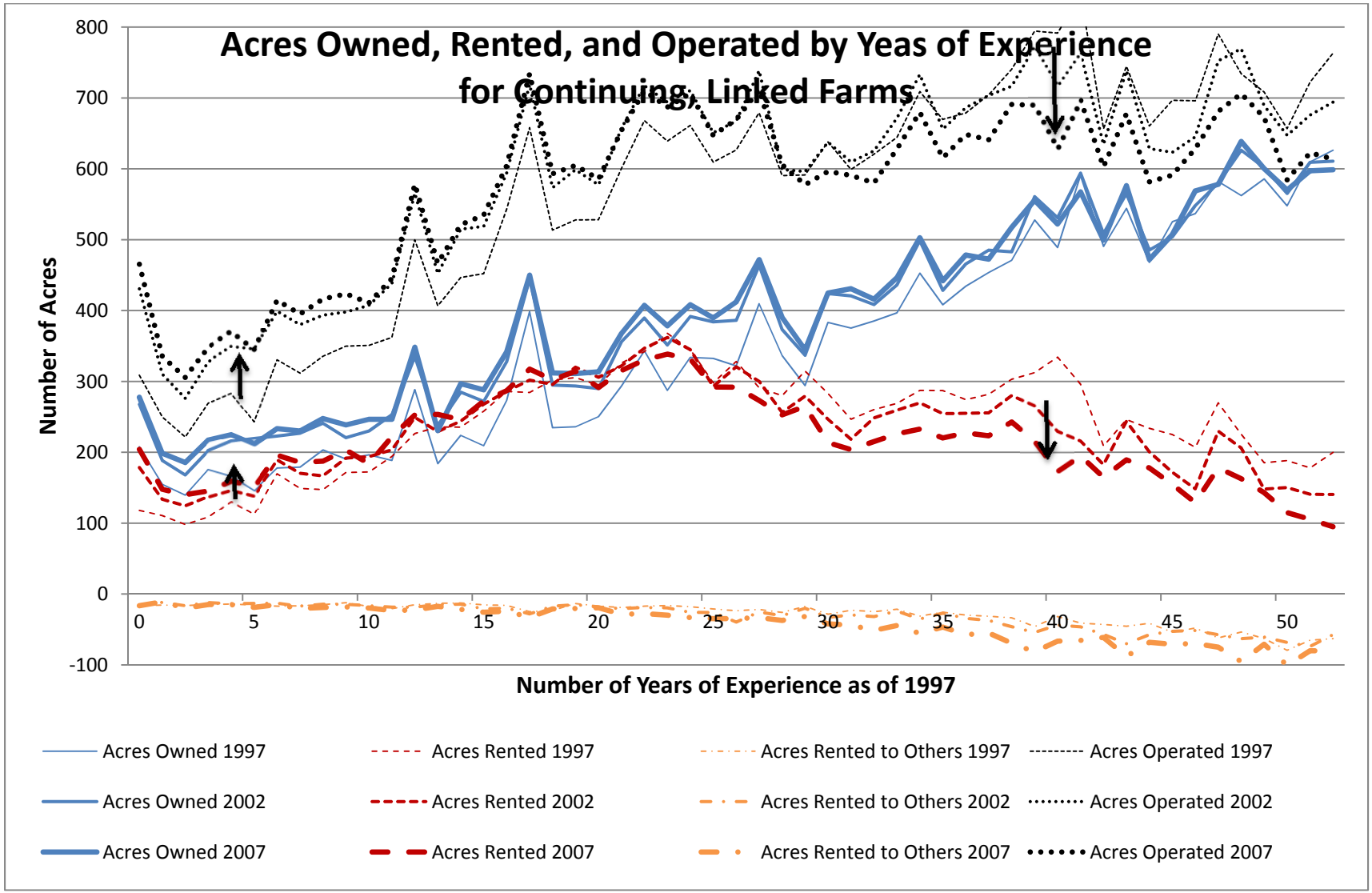

Figure 8. Growth Rates in Land Ownership and Leasing and Farm Size by Years of Experience

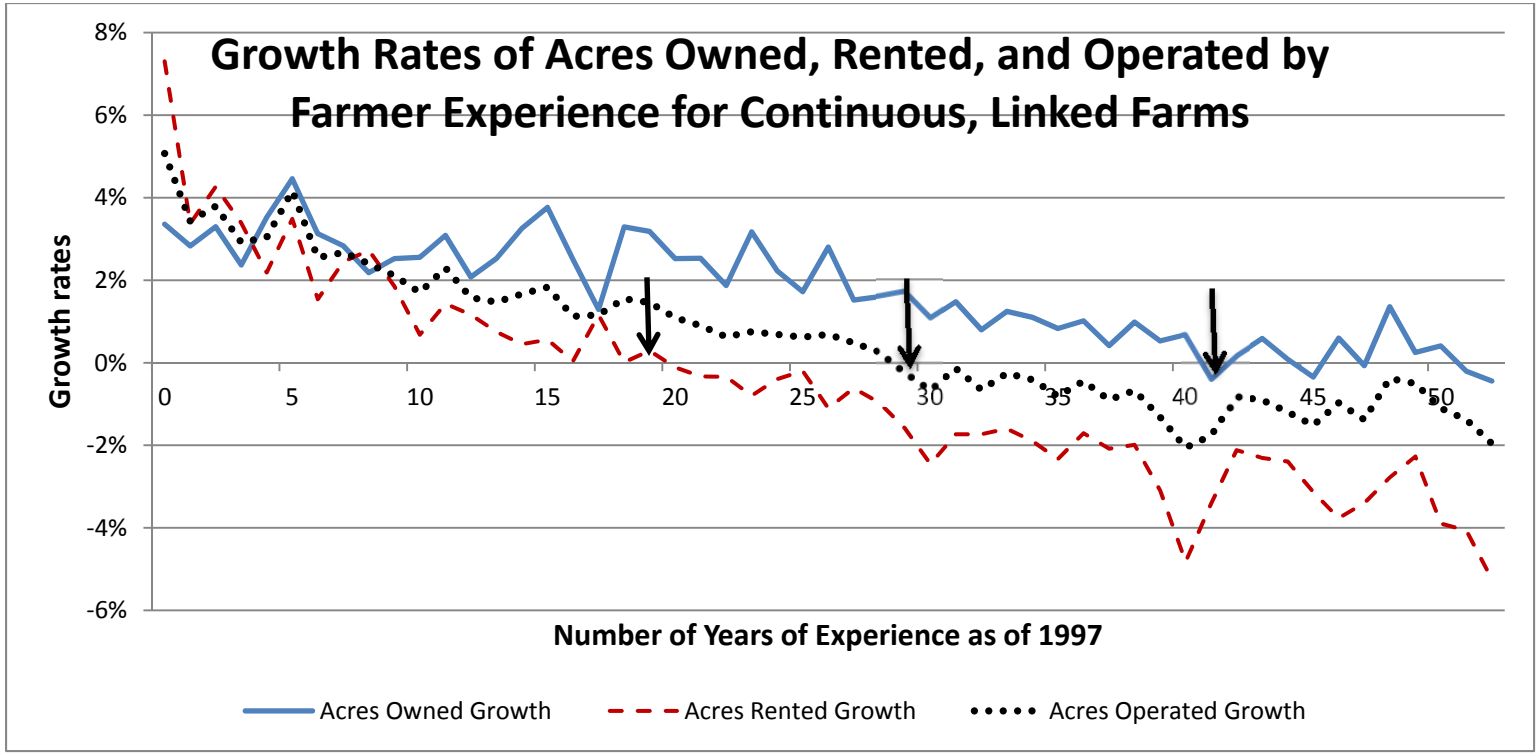
Growth Rates of Acres Owned, Rented, and Operated by Farmer Experience for Continuous, Linked Farms
8%
6%
4%
2%
0%
-2%
-4%
-6%
Growth rates
0
5
10
15
20
25
30
35
40
45
50
Number of Years of Experience as of 1997
Acres Owned Growth
Acres Rented Growth
Acres Operated Growth

Table 1. Average Number of Owned, Rented, and Operated Acres

Year	All or Linked Farms	Group	Acres Owned	Acres Rented	Acres Rented to Others	Acres Operated
1997	All	All	286	177	-32	431
2002	All	All	304	169	-31	442
2007	All	All	294	162	-36	419
1997	Linked	All	329	252	-27	554
2002	Linked	All	378	259	-33	604
2007	Linked	All	383	248	-41	590
1997	All	Beginning	164	127	-23	268
2002	All	Beginning	217	105	-23	299
2007	All	Beginning	191	86	-25	252
1997	Linked	Beginning	173	134	-16	292
2002	Linked	Beginning	215	158	-14	359
2007	Linked	Beginning	225	170	-17	377
1997	All	Established	317	213	-35	495
2002	All	Established	348	202	-35	515
2007	All	Established	343	198	-42	499
1997	Linked	Established	339	284	-24	599
2002	Linked	Established	385	277	-27	635
2007	Linked	Established	395	265	-36	624
1997	All	Age: <35	127	206	-14	320
2002	All	Age: <35	146	196	-13	329
2007	All	Age: <35	131	194	-17	307
1997	Linked	Age: <35	140	279	-10	409
2002	Linked	Age: <35	211	353	-10	555
2007	Linked	Age: <35	250	403	-14	640
1997	All	Age: 35-64	271	195	-27	438
2002	All	Age: 35-64	295	189	-26	458
2007	All	Age: 35-64	279	183	-29	433
1997	Linked	Age: 35-64	297	265	-21	540
2002	Linked	Age: 35-64	345	265	-29	581
2007	Linked	Age: 35-64	353	250	-37	566
1997	All	Age: >65	379	119	-52	446
2002	All	Age: >65	361	111	-47	425
2007	All	Age: >65	355	110	-56	409
1997	Linked	Age: >65	405	153	-43	514
2002	Linked	Age: >65	415	130	-48	497
2007	Linked	Age: >65	403	105	-58	450

Note: Linked Farms are farms that are tracked in 1997, 2002, and 2007 Censuses.

Table 2. Growth Rates of Owned and Leased Farmland

Group	Percent Change in Owned Acres	Percentage Change in Rented Acres	Percent Change in Acres Rented to Others	Percent Change in Operated Acres
All farms	1.6%	-0.2%	5.0%	0.6%
Beginning	3.0%	2.6%	1.0%	2.9%
Established	1.7%	-0.7%	5.5%	0.4%
Age: <35	7.9%	4.5%	4.6%	5.6%
Age: 35-64	1.9%	-0.6%	7.1%	0.5%
Age: >65	0.0%	-3.1%	3.4%	-1.2%

Note: Numbers denote annualized percent changes between 1997 and 2007 for the linked farms.