Farm Transitions in U.S. Agriculture

Ani Katchova
Associate Professor and Farm Income Enhancement Chair

Joint research with Mary Ahearn (USDA-ERS)

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Farm transitions: introduction

- Farm transitions are identified as a major upcoming structural change that concerns policy makers.
- Farm transitions are defined as:
  - Changes in farm size or structure over the life-cycle (growth or contraction of the farm business)
  - Intergenerational transfers – ownership, control, participation
  - Entry and exit of farm operations in the agricultural sector.
- Challenges of the aging farmer population and the need to transition ownership and control of farmland
- Need to provide support and training for beginning farmers to start their businesses
Farm transitions: introduction

- Significant challenges for young farmers (less than 35 years old) and beginning farmers (10 years or less of experience) 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 but rather purchase or lease farmland to start their businesses and grow over time.
The Agricultural Act of 2014 (aka 2014 U.S. Farm Bill)

- Special programs and provisions supporting beginning farmers and ranchers
- Providing training programs and outreach
- Access to capital and land, crop insurance premium assistance and conservation programs
- Offering FSA microloans to new farmers
- Definition for beginning farmers (no more than 30% of average acres in the county)
Farm Bill: funding levels for beginning farmer programs (2014 funding, 5 year totals)

- Beginning Farmer and Rancher Development Program – $100 million
- Federal crop insurance premium reductions for beginning farmers – $84 million
- Outreach and assistance to socially disadvantaged and veteran farmers/ranchers – $50 million
- USDA’s CRP Transition Incentive Program – $33 million
Our research

• We use data from the U.S. Census of Agriculture to address 3 issues on farm transitions:
  • What is the age distribution of all farmers and beginning farmers?
  • How do young and beginning farmers enter agriculture and grow over time in terms of owning and renting farmland?
  • How many beginning farmers start operating every year? What are the exit rates for U.S. farms?
Age distribution for all farmers vs. beginning farmers

Provide insights into farmer’s age distribution

- Farmers are aging (according to U.S. Census of Ag):
  - Average age of U.S. farmers is 57.1 in 2007 and 58.3 in 2012.
  - Average age of Ohio farmers is 55.7 in 2007 and 56.8 in 2012.
- Farmers don’t retire from farming
- Fewer beginning farmers
- What is the age distribution for all farmers, young farmers, and beginning farmers?
Among U.S. farmers, 6% are young (<35 years) and 33% are old (>65 years).
Percent Ohio farms in 2012 by age group

Among Ohio farmers, 7% are young (<35 years) and 29% are old (>65 years).
<table>
<thead>
<tr>
<th>Age group</th>
<th>Number of farms</th>
<th>Percent farms</th>
<th>Number of farms</th>
<th>Percent farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 35 years</td>
<td>119,833</td>
<td>6%</td>
<td>118,613</td>
<td>5%</td>
</tr>
<tr>
<td>35 to 44 years</td>
<td>214,106</td>
<td>10%</td>
<td>268,818</td>
<td>12%</td>
</tr>
<tr>
<td>45 to 54 years</td>
<td>466,036</td>
<td>22%</td>
<td>565,401</td>
<td>26%</td>
</tr>
<tr>
<td>55 to 64 years</td>
<td>608,052</td>
<td>29%</td>
<td>596,306</td>
<td>27%</td>
</tr>
<tr>
<td>65 to 74 years</td>
<td>443,571</td>
<td>21%</td>
<td>412,182</td>
<td>19%</td>
</tr>
<tr>
<td>75 years and over</td>
<td>257,705</td>
<td>12%</td>
<td>243,472</td>
<td>11%</td>
</tr>
<tr>
<td>All</td>
<td>2,109,303</td>
<td>100%</td>
<td>2,204,792</td>
<td>100%</td>
</tr>
<tr>
<td>Age group</td>
<td><strong>Ohio 2012</strong></td>
<td></td>
<td><strong>Ohio 2007</strong></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
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</tr>
<tr>
<td></td>
<td>Number of farms</td>
<td>Percent farms</td>
<td>Number of farms</td>
<td>Percent farms</td>
</tr>
<tr>
<td>Under 35 years</td>
<td>5,251</td>
<td>7%</td>
<td>4,729</td>
<td>6%</td>
</tr>
<tr>
<td>35 to 44 years</td>
<td>8,793</td>
<td>12%</td>
<td>10,367</td>
<td>14%</td>
</tr>
<tr>
<td>45 to 54 years</td>
<td>18,401</td>
<td>24%</td>
<td>21,368</td>
<td>28%</td>
</tr>
<tr>
<td>55 to 64 years</td>
<td>21,380</td>
<td>28%</td>
<td>19,407</td>
<td>26%</td>
</tr>
<tr>
<td>65 to 74 years</td>
<td>13,773</td>
<td>18%</td>
<td>12,911</td>
<td>17%</td>
</tr>
<tr>
<td>75 years and over</td>
<td>7,864</td>
<td>10%</td>
<td>7,079</td>
<td>9%</td>
</tr>
<tr>
<td>All</td>
<td>75,462</td>
<td>100%</td>
<td>75,861</td>
<td>100%</td>
</tr>
</tbody>
</table>
Number of Farms by Age, 2012

Number of Farms in Thousands

Farmer Age

All Farms 2012
Number of Farms by Age, 1997-2012

Farmer Age

Number of Farms in Thousands

All Farms 1997  All Farms 2002  All Farms 2007  All Farms 2012
Number of Farms and Beginning Farms by Age, 2012

Farmer Age

Number of Farms in Thousands

All Farms 2012

Beginning Farms 2012
Number of Farms and Beginning Farms by Age, 1997-2012

![Graph showing number of farms and beginning farms by age from 1997 to 2012. The graph includes data for all farms and beginning farms in each year, with distinct lines for different years and farm categories.](image-url)
Findings about farmer age distribution

• Farmers’ age distribution approximately normal
• Overall shift of distribution to the right (aging), fewer young farmers
• Beginning farmers’ age distribution is also close to normal, but peaking a decade earlier than that for established farmers
• The age distribution for beginning farmers is also shifting to the right – beginning farmers are aging too
Farmland ownership and leasing

• How much farmland do farmers own and lease?
• How do young and beginning farmers enter agriculture and grow over time in terms of owning and renting farmland?
Acres Owned, Rented, and Operated by Farmer Age Using Cross-Sectional Data from the 2012 Census
Summary results for farmland ownership and leasing - using repeated cross-sectional data

- Across the age distribution, younger farmers own less land and older farmers own more land.
- Rented acres are similar for younger farmers; less rented land for farmers older than 50.
- Land rented to others is not much.
- Farm size (total acres operated) is higher across the age distribution (driven by more ownership) and is more stable for farmers 50 years and older.
- Can’t notice trends over time from repeated cross-sectional data (similar graphs for all three Censuses).
Farmland ownership and leasing: growth over time for linked farms

- Same farmers tracked in all three Censuses
- Horizontal axis is farmer’s age as of 2002, also representing the same farmers as 5 years older in 2007 and 10 years older in 2012
- Vertical difference between graphs represents changes over time for linked farms
Acres Owned, Rented, and Operated by Farmer Age
For Continuing, Linked Farms in 2002-2012

Farmer Age as of 2002

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
Acres Owned 2012
Acres Rented 2012
Acres Rented to Others 2012
Acres Operated 2012
Growth Rates of Acres Owned, Rented, and Operated by Farmer Age for Continuous, Linked Farms 2002-2012
Summary results for land positions
using linked-farms longitudinal data

• Young farmers rapidly expand their operations by both owning more and renting more
• Older farmers don’t change their operation size much; small reduction of acres rented

• Farmers increase owned acres until age 65
• Farmers increase rented acres until age 45
• Overall, operated acres increases until age 55 then decreases
Acres Owned, Rented, and Operated by Farmer Age
For Continuing Farms that Were Beginning Farms in 2002

Farmer Age as of 2002

Number of Acres

Acres Owned 2002
Acres Rented 2002
Acres Rented to Others 2002
Acres Operated 2002
Acres Rented 2007
Acres Rented to Others 2007
Acres Operated 2007
Acres Rented 2012
Acres Rented to Others 2012
Acres Operated 2012
## Annual growth rates over 2002-2012 for continuing farms

<table>
<thead>
<tr>
<th>Groups</th>
<th>Acres Owned Growth Rates</th>
<th>Acres Rented Growth Rates</th>
<th>Acres Operated Growth Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>0.8%</td>
<td>-0.2%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Younger than 35</td>
<td>7.5%</td>
<td>5.6%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Age 35-64</td>
<td>1.2%</td>
<td>-0.5%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Older than 65</td>
<td>-0.2%</td>
<td>-2.9%</td>
<td>-1.3%</td>
</tr>
<tr>
<td>Beginning farmers</td>
<td>1.3%</td>
<td>2.2%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Established farmers</td>
<td>1.0%</td>
<td>-0.9%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
Farm entry and exit rates

- Farmers are aging, do we need more new farmers?
- Secretary of Agriculture Tom Vilsack’s goal of 100,000 new farmers

- How many beginning farmers start operating every year?
- What are the exit rates for U.S. farms?
Number of Beginning and Established Farmers in the U.S.

<table>
<thead>
<tr>
<th>Years on present farm</th>
<th>US 2012</th>
<th>US 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of farms</td>
<td>Percent farms</td>
</tr>
<tr>
<td>2 years or less</td>
<td>68180</td>
<td>3%</td>
</tr>
<tr>
<td>3 or 4 years</td>
<td>103370</td>
<td>5%</td>
</tr>
<tr>
<td>5 to 9 years</td>
<td>297548</td>
<td>14%</td>
</tr>
<tr>
<td>10 years or more</td>
<td>1640205</td>
<td>78%</td>
</tr>
<tr>
<td>All</td>
<td>2109303</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: U.S. Census of Agriculture
Fewer beginning farmers in the U.S.: 26% in 2007 and 22% in 2012.
Number of Beginning and Established Farmers in Ohio

<table>
<thead>
<tr>
<th>Years on present farm</th>
<th>Ohio 2012</th>
<th></th>
<th>Ohio 2007</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of farms</td>
<td>Percent farms</td>
<td>Number of farms</td>
<td>Percent farms</td>
</tr>
<tr>
<td>2 years or less</td>
<td>2216</td>
<td>3%</td>
<td>2411</td>
<td>3%</td>
</tr>
<tr>
<td>3 or 4 years</td>
<td>3287</td>
<td>4%</td>
<td>4168</td>
<td>5%</td>
</tr>
<tr>
<td>5 to 9 years</td>
<td>9595</td>
<td>13%</td>
<td>11087</td>
<td>15%</td>
</tr>
<tr>
<td>10 years or more</td>
<td>60364</td>
<td>80%</td>
<td>58195</td>
<td>77%</td>
</tr>
<tr>
<td>All</td>
<td>75462</td>
<td>100%</td>
<td>75861</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: U.S. Census of Agriculture
Fewer beginning farmers in Ohio: 23% in 2007 and 20% in 2012.
Calculating entry and exit rates

Methodology

• Use farmers’ responses for “the year they started farming this farm business”
• Of all farmers that start in a given year, check how many farmers are remaining in subsequent Censuses to calculate exit rates

Problem

• There is no requirement for new farmers to report their farmer status to NASS
• Beginning farmers are less likely to be known to NASS
<table>
<thead>
<tr>
<th>Reported year started this business</th>
<th>2002 Census, 1,000 farms</th>
<th>2007 Census, 1,000 farms</th>
<th>2012 Census, 1,000 farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td></td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
<td>41</td>
</tr>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td>53</td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>2008</td>
<td></td>
<td></td>
<td>55</td>
</tr>
<tr>
<td>2007</td>
<td></td>
<td>28</td>
<td>56</td>
</tr>
<tr>
<td>2006</td>
<td></td>
<td>57</td>
<td>62</td>
</tr>
<tr>
<td>2005</td>
<td></td>
<td>70</td>
<td>68</td>
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<tr>
<td>2004</td>
<td></td>
<td>69</td>
<td>56</td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td>68</td>
<td>53</td>
</tr>
<tr>
<td>2002</td>
<td>30</td>
<td>64</td>
<td>51</td>
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<tr>
<td>2001</td>
<td>45</td>
<td>66</td>
<td>52</td>
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<tr>
<td>2000</td>
<td>68</td>
<td>96</td>
<td>86</td>
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<td>1999</td>
<td>75</td>
<td>67</td>
<td>54</td>
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<td>1998</td>
<td>78</td>
<td>70</td>
<td>59</td>
</tr>
<tr>
<td>1997</td>
<td>71</td>
<td>63</td>
<td>52</td>
</tr>
<tr>
<td>1996</td>
<td>78</td>
<td>62</td>
<td>54</td>
</tr>
<tr>
<td>1995</td>
<td>83</td>
<td>69</td>
<td>62</td>
</tr>
</tbody>
</table>
Number of Farms based on the Year They Started Their Businesses

Year Started This Farm Business

- Census2012
- Linear (Census2012)
Graphs about the number of farms that start farming by year

- Spikes indicate that some farmers may recall round numbers (i.e. started farming in 1970)
- Generally decreasing trend – showing farm exits over time
- Lower number of farmers than trend would indicate for farmers that started in the 1980s.
- The number of farms in the first 3 years need to be adjusted as it takes time for new farmers to be “discovered” by NASS
- Estimating about 70-80,000 farmers starting their farm business every year.
- Compare to Secretary Vilsack’s goal of 100,000
Graphs for 3 Censuses

• Because of farm exits, number of farms that started farming in a given year should always be smaller in subsequent censuses.

• 5-year exit rate from farming – difference in number of farms that started farming in a given between two Censuses

• 5-year exit rate in numbers or percent change
Number of Farms based on the Year They Started Their Businesses

Year Started This Farm Business

Number of Farms in Thousands

Number of farms exiting = difference in number of farms that started in a particular year between the two Censuses
Exit rates = percent differences in number of farms between two Censuses
Exit rates depending on the year farm started business.
Findings about farm exit rates

<table>
<thead>
<tr>
<th>Number of years farming</th>
<th>Annual exit rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-10</td>
<td>4.0%</td>
</tr>
<tr>
<td>10-19</td>
<td>2.8%</td>
</tr>
<tr>
<td>20-29</td>
<td>2.5%</td>
</tr>
<tr>
<td>30-39</td>
<td>2.8%</td>
</tr>
<tr>
<td>40-49</td>
<td>4.9%</td>
</tr>
<tr>
<td>50-59</td>
<td>7.5%</td>
</tr>
</tbody>
</table>

- Exit rates depend on the number of years in business
- Can’t calculate exit rates for first 3 years of farming
- Years 3-6 – rates still unreliable
Summary results for land positions for beginning farmers

• Beginning farmers expand their operations only if they are young
• Young beginning farmers expand by owning more and renting more
• Old beginning farmers enter at farm sizes similar to young farmers, but they do not expand much
• If analysis is by years of experience rather than age:
  • Beginning farms expand slightly (influenced by young farmer trends)
  • Established farms decrease slightly by renting less
Shifting age distribution of U.S. farmers

- Farmers no longer “retiring” from farming
- Age distribution for beginning farmers also normal and shifting to the right

Entry and exit rates for U.S. farms

- Informing Secretary Vilsack’s goal of 100,000 new farmers
- Estimated 70-80,000 farmers enter every year
- It is difficult to measure entry rates within first 3 to 6 years of farming
- Exit rates are in the range of 2.5% to 7.5% but depend on years of experience
Land ownership and tenancy growth strategies of U.S. farms

- Both young and beginning farmers need financing as they enter farming
- Similar farm sizes for young and all beginning farmers
- It’s mostly young beginning, not all beginning farmers that expand their operations
- Young farmers need additional capital after entering
- Informing debate among farm management professionals about renting vs. buying farmland
Policy implications

- Historically, farm bill policy has been supporting beginning farmers with 10 years or less of experience, regardless of their age.
- Young farmers may be motivated to expand their operations and significantly contribute to agricultural production.
- Older beginning may be entering farming for the lifestyle and/or financial benefits and may be helping to revitalize rural communities.
Policy Implications

• Informing debate among farm management professionals about renting vs. buying farmland
• Ag lenders are interested in inter-generational farm transfers (capital requirements)
• Policy makers and programs supporting young and beginning farmers
For more information, please contact:

Ani Katchova
Associate Professor
Farm Income Enhancement Chair
katchova.1@osu.edu