

Farm Real Estate Collateral: Trends in Debts, Leverage, and Prospects for Future Income Growth

Mitch Morehart*

Presentation to Farm Credit Administration
Regulators Roundtable
February 2011

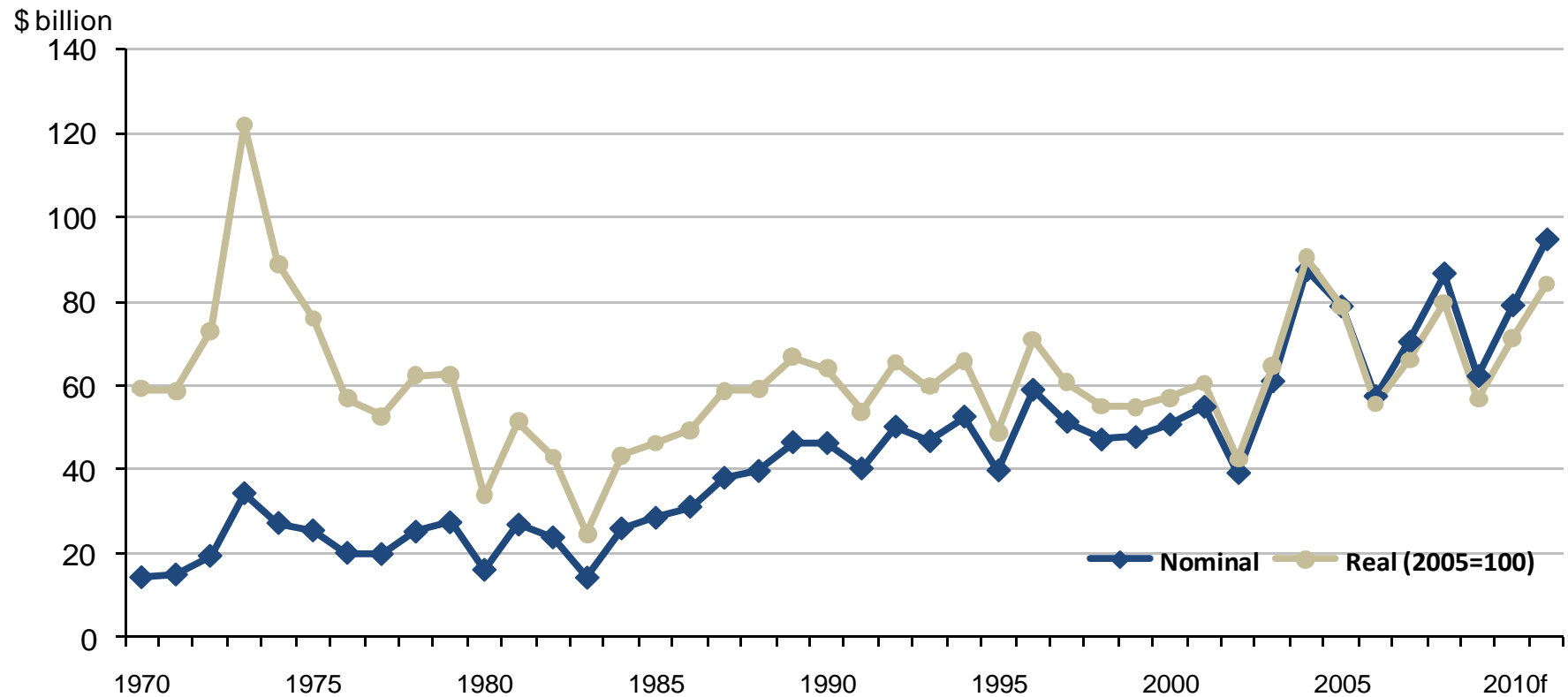
* The views expressed are the authors and do not necessarily reflect those of the Economic Research Service, USDA.

Outline

- Sector Forecast Highlights
- Farm business income prospects
- Farm business equity and debt repayment
- Real estate leverage position and purchases
- Farm real estate values versus earnings

Farm sector profitability improves in 2011

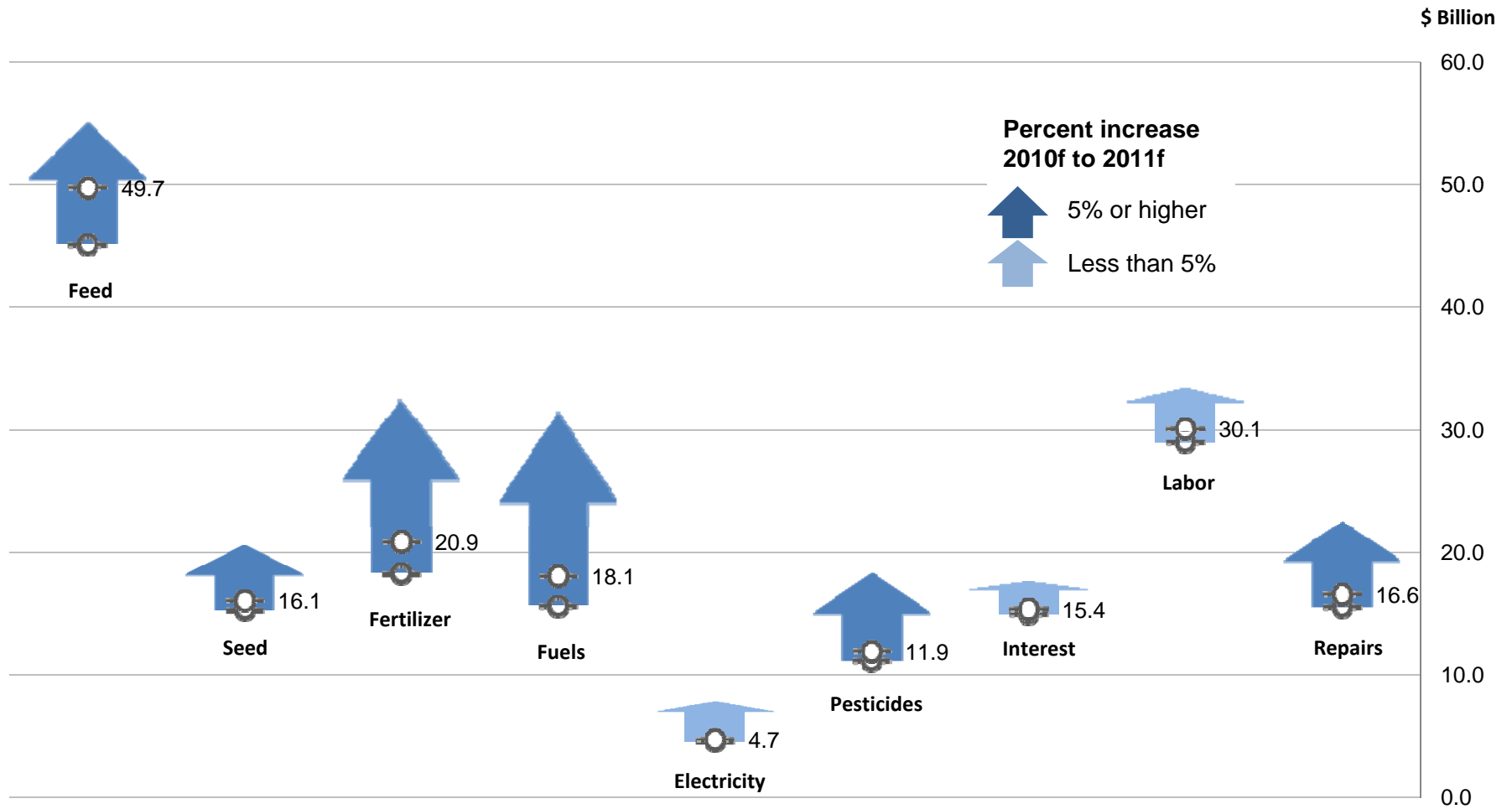
Nominal and inflation adjusted net farm income, 1970-2011f ^{1/}



^{1/} The GDP chain-type price index is used to convert the current-dollar statistics to real (inflation adjusted) amounts (2005=100).

Source: Economic Research Service, USDA. f = Forecast.

Production costs higher for 2011

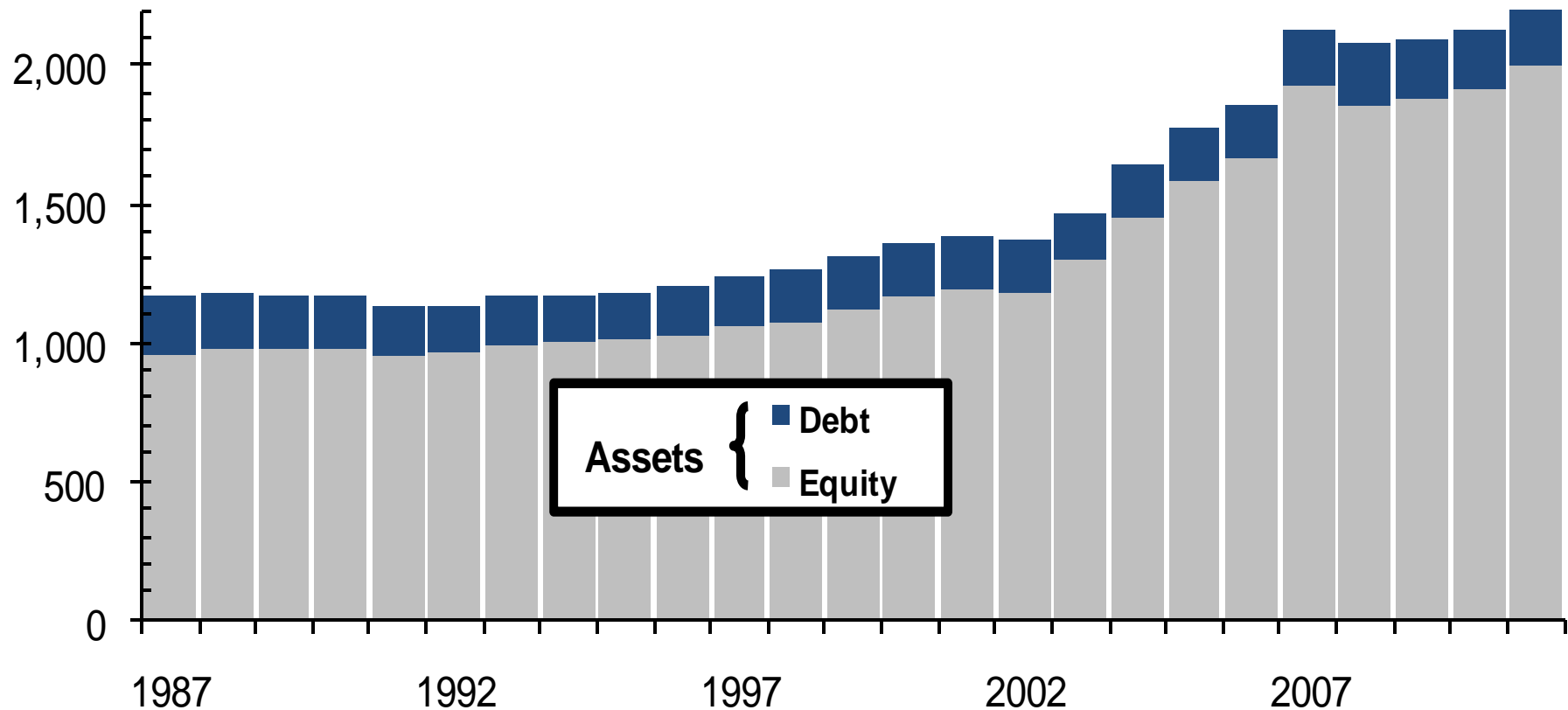


Source: Economic Research Service, USDA.

2011 real assets and equity to exceed 2007 peak values

Real farm sector assets, debt, and equity 1987-2011f ^{1/}

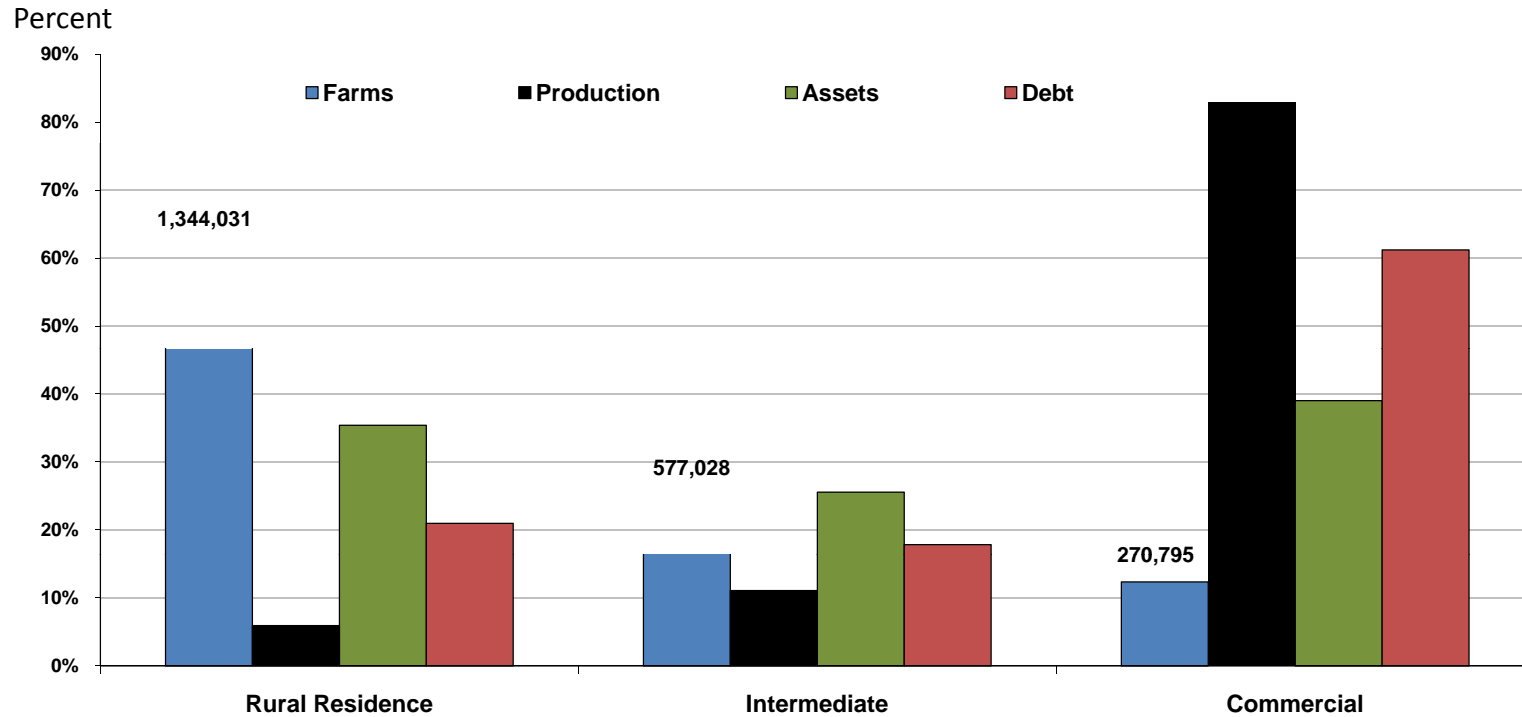
\$ billion (2005=100)



^{1/} The GDP chain-type price index is used to convert current-dollar amounts to real (inflation adjusted) amounts (2005=100).
Source: Economic Research Service, USDA. f = Forecast.

Farm Business Income Prospects

FARM BUSINESSES represented about 850,000 farms and accounted for 94 percent of production in 2009



Small farms whose operators report they are retired or they had a major occupation other than farming.

Small farms with sales less than \$250,000 whose operators report farming as their major occupation.

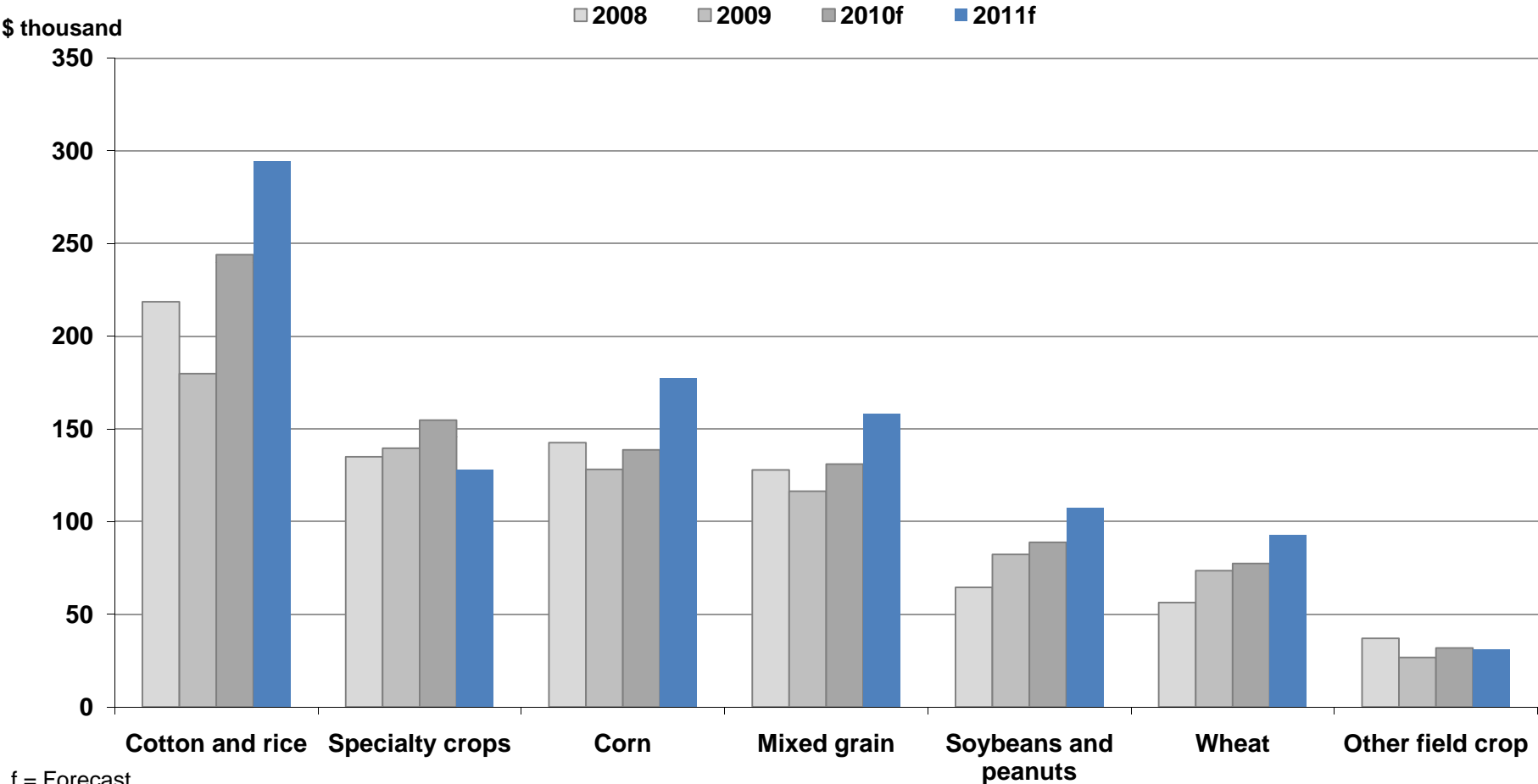
Farms with sales greater than \$250,000 and farms organized as nonfamily corporations or cooperatives.

Farm Businesses

Source: 2009 Agricultural Resource Management Survey, USDA

Receipts outpace cost increases leading to higher net cash income for most crop farm businesses in 2011

Average net cash income for crop farm businesses 1/

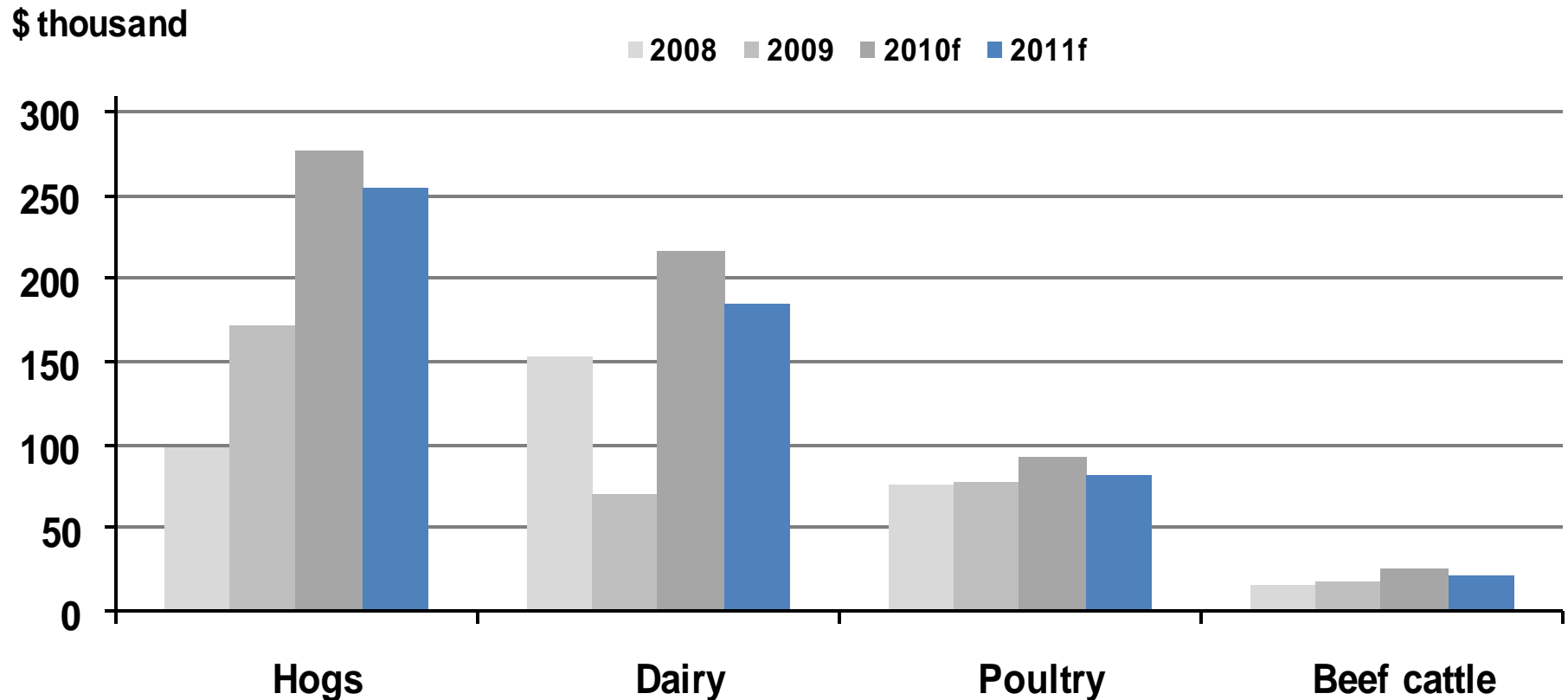


f = Forecast.

1/The farm level forecasts are derived from partial budget modeling on the 2009 *Agricultural Resource Management Survey (ARMS)* using parameters from the sector forecasts. The model is static and therefore does not account for changes in crop rotation, weather, and other local production impacts that occurred after the base year.

Net cash incomes recede in 2011 for livestock farm businesses

Average net cash income for livestock farm businesses 1/

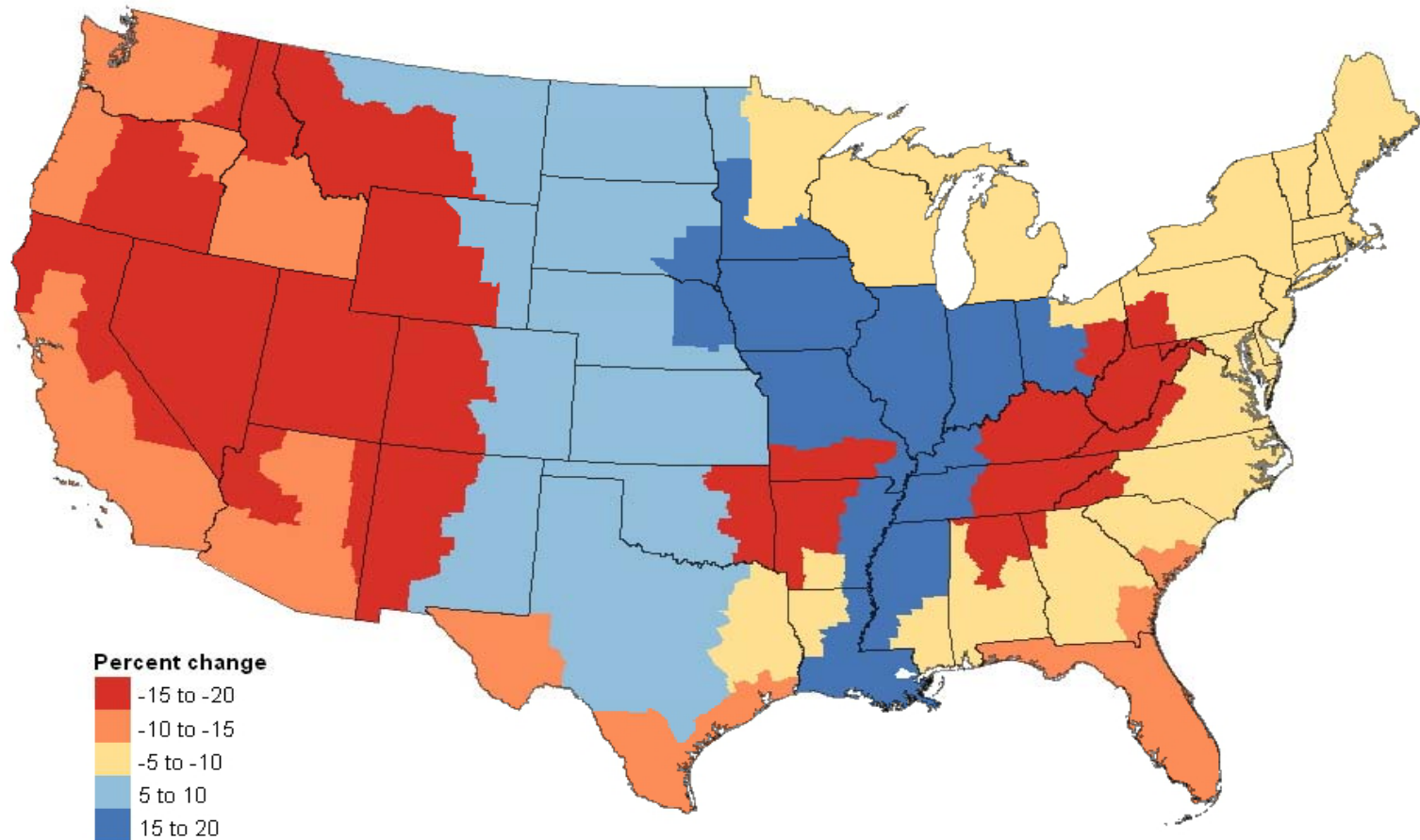


f = Forecast.

1/The farm level forecasts are derived from partial budget modeling on the 2009 *Agricultural Resource Management Survey (ARMS)* using parameters from the sector forecasts. The model is static and therefore does not account for changes in crop rotation, weather, and other local production impacts that occurred after the base year.

Regional disparity for farm business income prospects in 2011

2011 Farm Business Net Cash Income Forecast Compared with 2010^{1/}



^{1/} The farm level forecasts are derived from partial budget modeling on the 2009 *Agricultural Resource Management Survey* (ARMS) using parameters from the sector forecasts. The model is static and therefore does not account for changes in crop rotation, weather, and other local production impacts that occurred after the base year.

Farm business equity and debt repayment

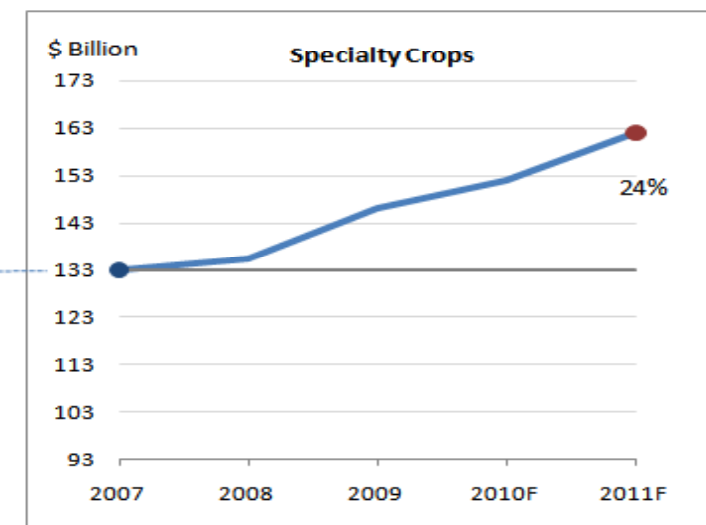
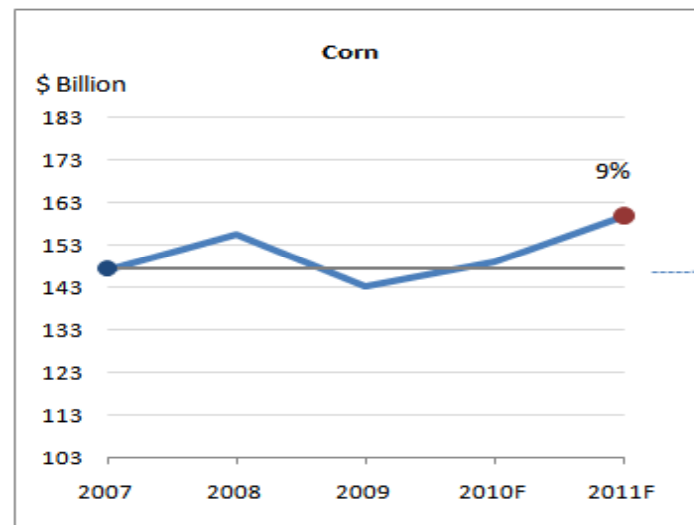
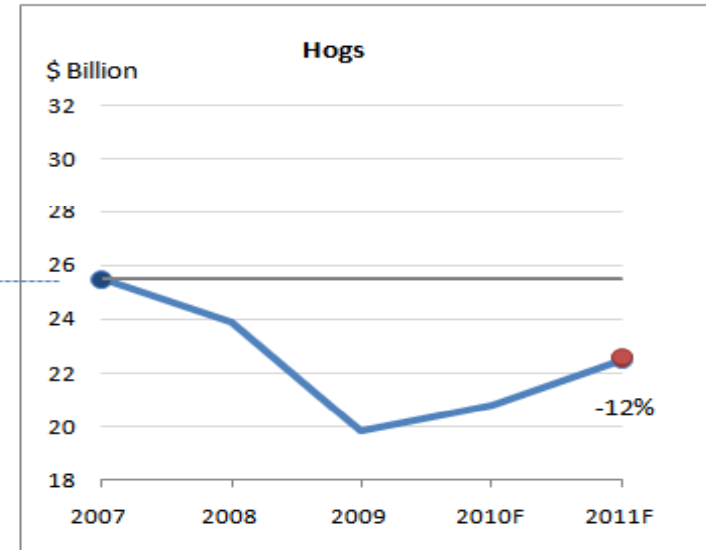
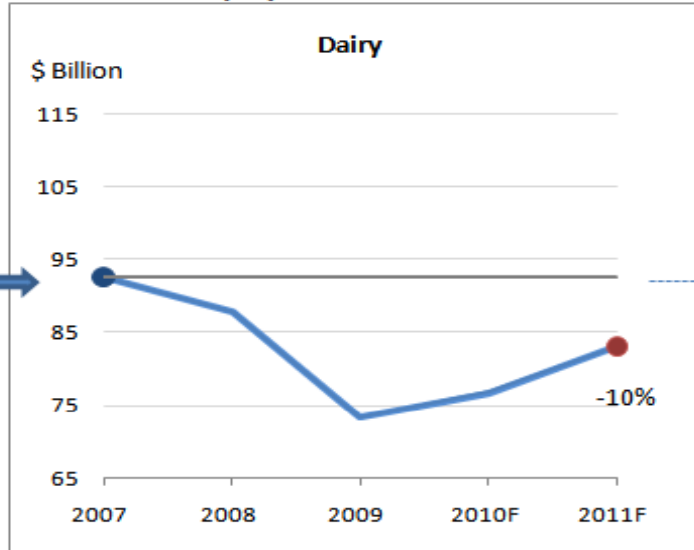
- Equity growth since 2007 for selected farm businesses
- Debt at risk comparison between 2002 and 2009 for farm businesses
- The outlook for debt repayment problems by production specialty



Farm business equity has stayed below 2007 levels for livestock and generally increased for most crop farms

Charts are plotted on comparable percentage change scale beginning in 2007.

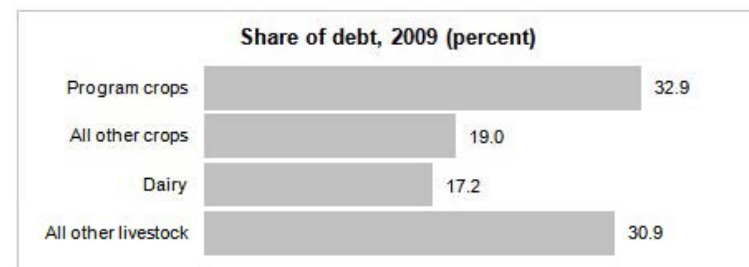
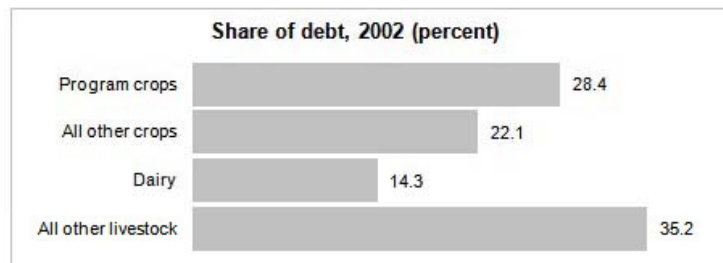
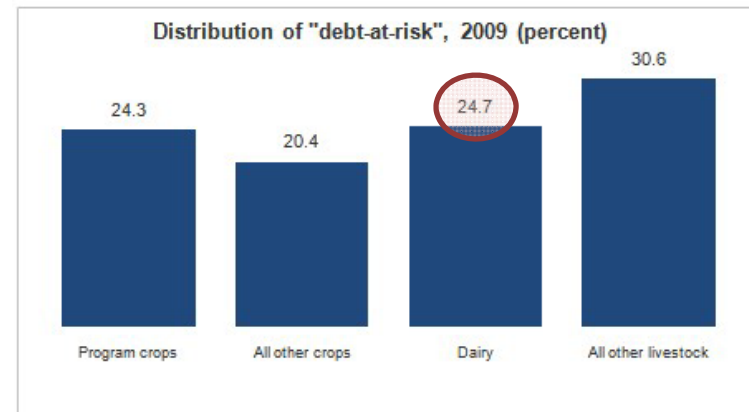
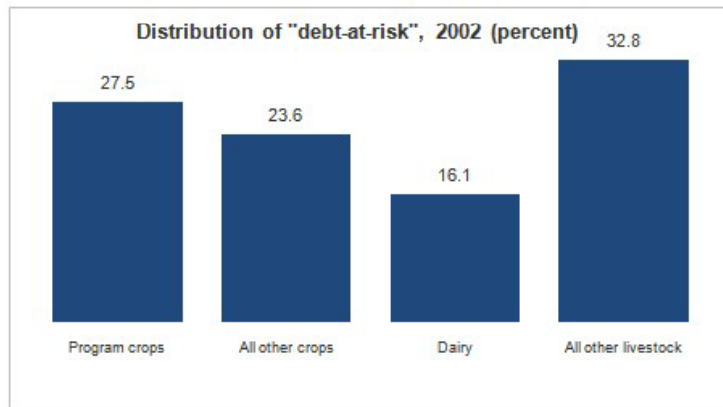
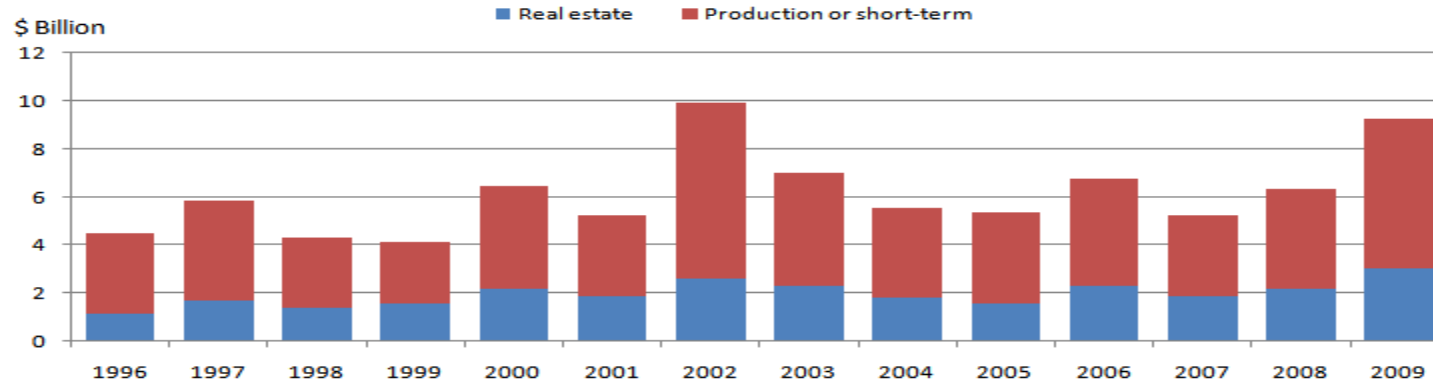
Farm business equity



Source: Agricultural Resource Management Survey (ARMS), USDA

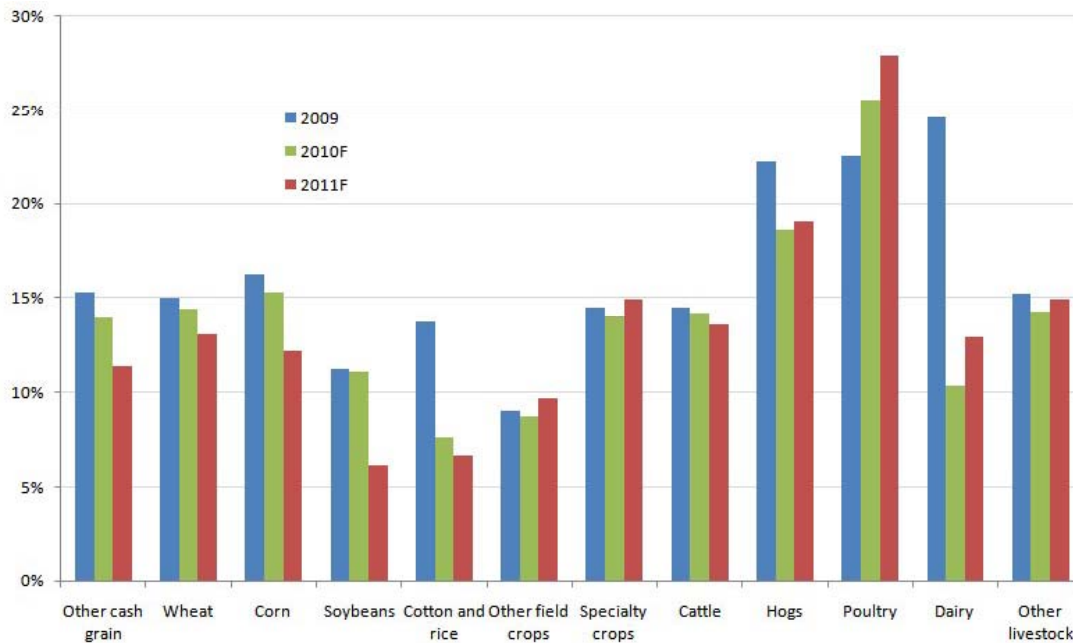
Farm business debt repayment dashboard

Estimated farm business debt at risk of non repayment, 1996-2009



Source: Agricultural Resource Management Survey (ARMS), USDA.

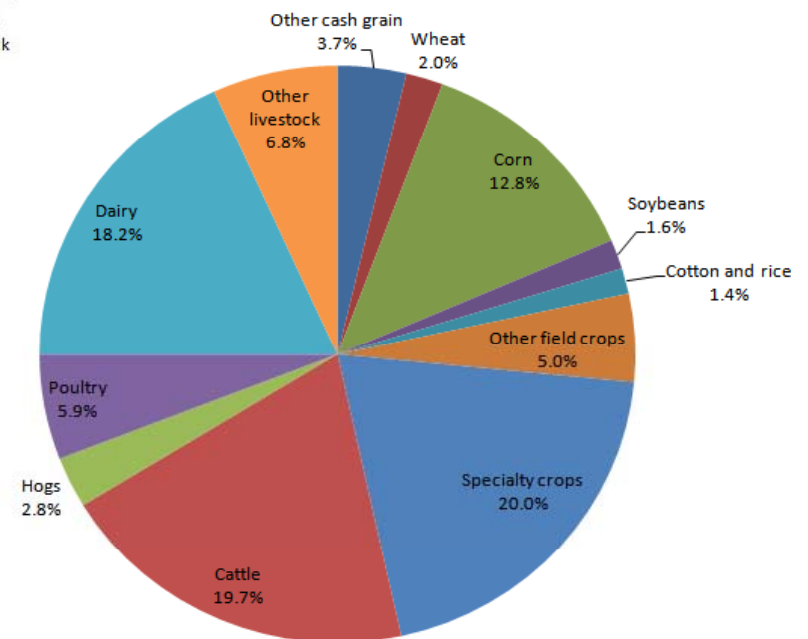
Farm businesses with DRCU > 120%, 2009-11F



According to 2009 ARMS data, livestock farms held 55 percent of total farm business debt at risk. This included large shares held by dairy farms (24 percent) and beef cattle farms (18 percent). Among crop farms, specialty crop farms accounted for 17 percent and corn farms followed with 14 percent of total debt at risk (<http://usda.mannlib.cornell.edu/usda/current/AIS/AIS-12-15-2010.pdf>). The 2011 forecast is for the share of debt at risk to decline for dairy farms and increase for specialty crop and beef cattle farms.

The share of farm businesses with potential debt repayment problems (DRCU > 120%) is forecast to decline for operations that specialize in cash grain, soybean, cotton, and rice production; mirroring income prospects. Hog, poultry, and dairy farm business have had the highest percentage of farms with DRCU > 120 percent. The 2011 forecast shows improvement for hog and dairy farm businesses, relative to 2009.

Distribution of debt at risk by production specialty, 2011F



Source: Agricultural Resource Management Survey (ARMS), USDA.

Real estate leverage position and purchases

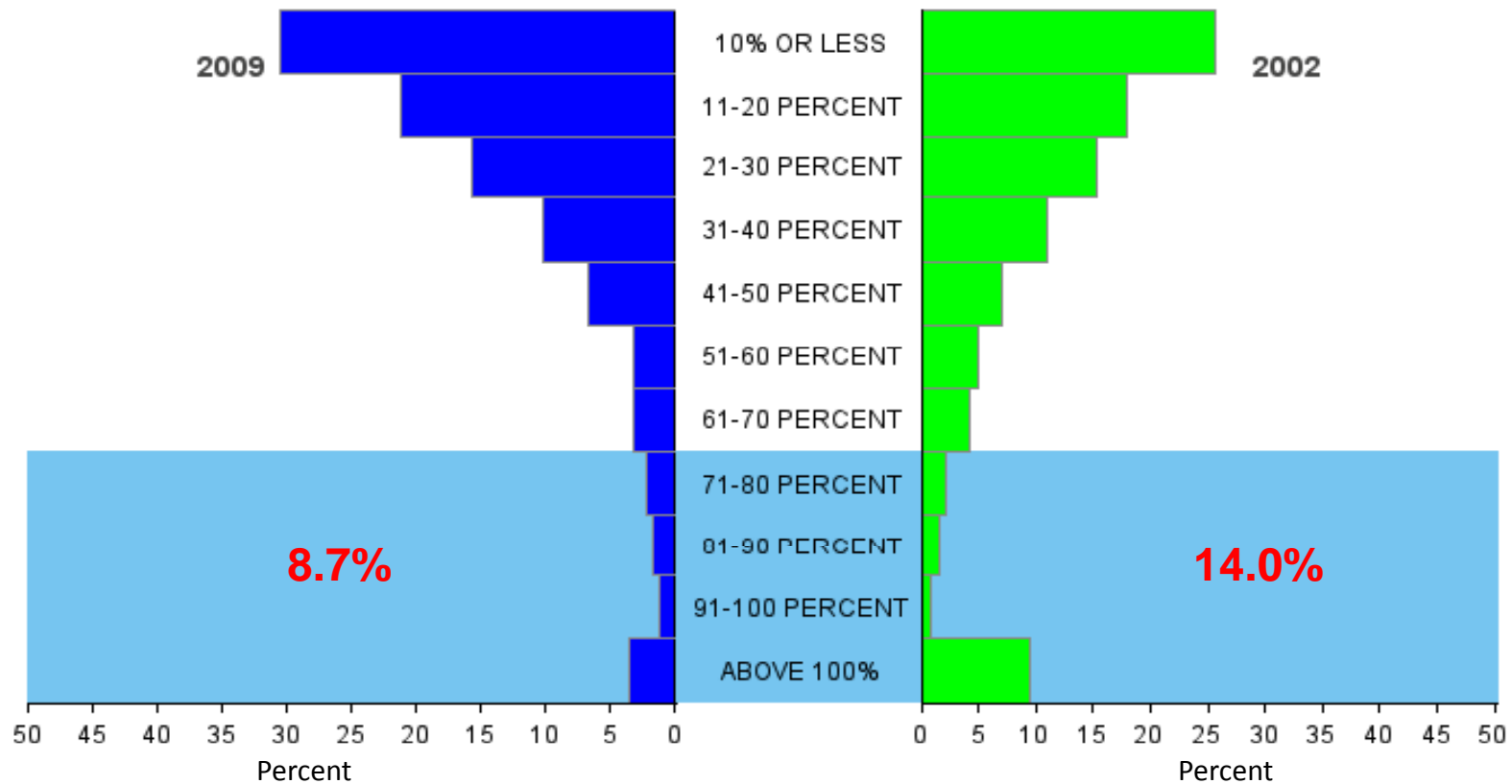
- Comparison of real estate leverage position between 2002 and 2009
- Distribution of high real estate leverage farm business by economic class
- Distribution of high real estate leverage farm business by production specialty
- Farm real estate purchases 2007-2009 by economic class
- Farm real estate purchases 2007-2009 by operator age
- Amount of debt financing used to purchase farm real estate and leverage position



Fewer farm businesses had a high farm real estate leverage position in 2009 than in 2002

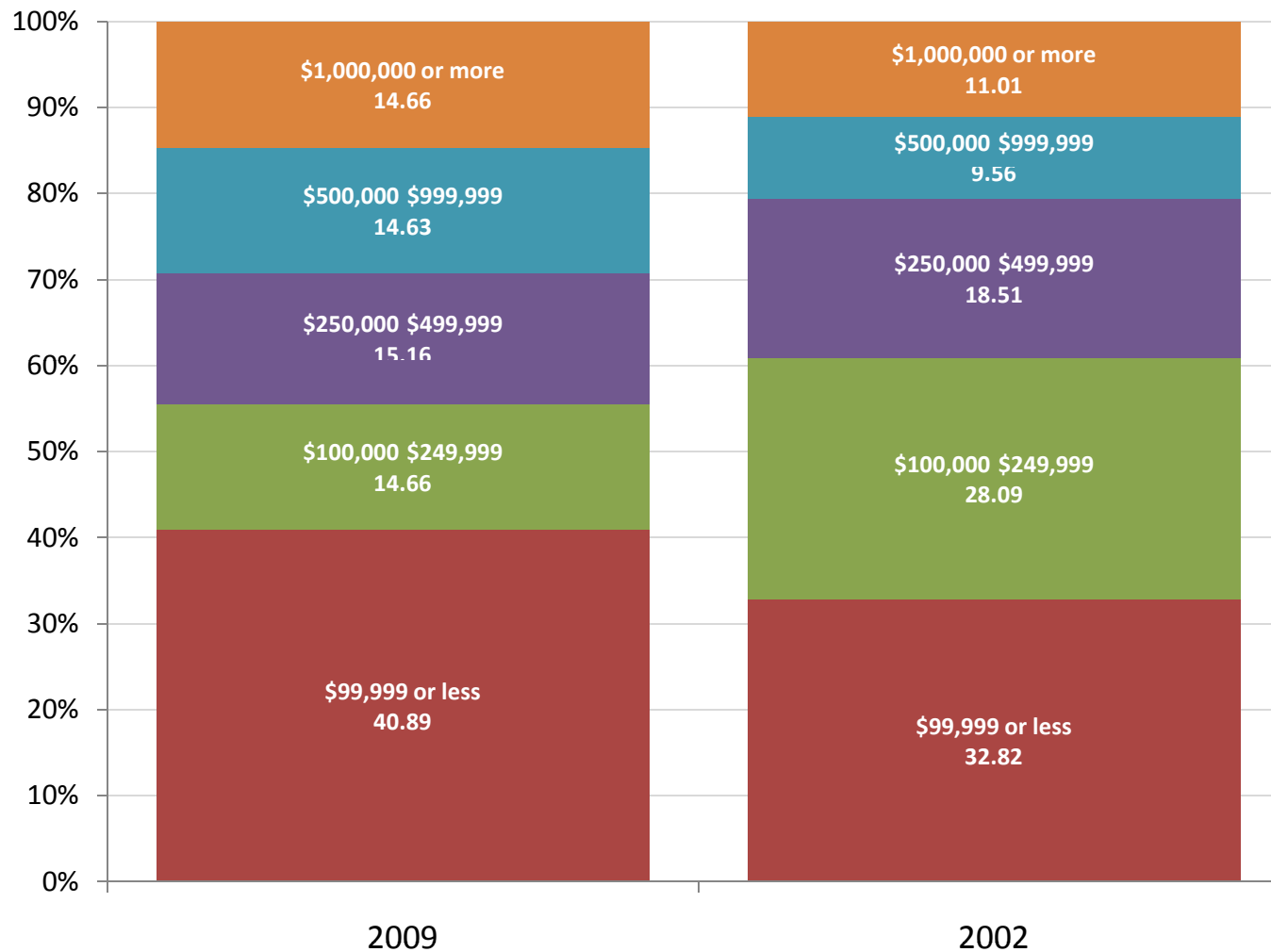
Real Estate Leverage Ratio Distribution Comparison for Farm Businesses

(shaded area denotes highest leverage positions.)



Source: Agricultural Resource Management Survey (ARMS), USDA.

Distribution of farm businesses with high real estate leverage position (above 70%) by sales class

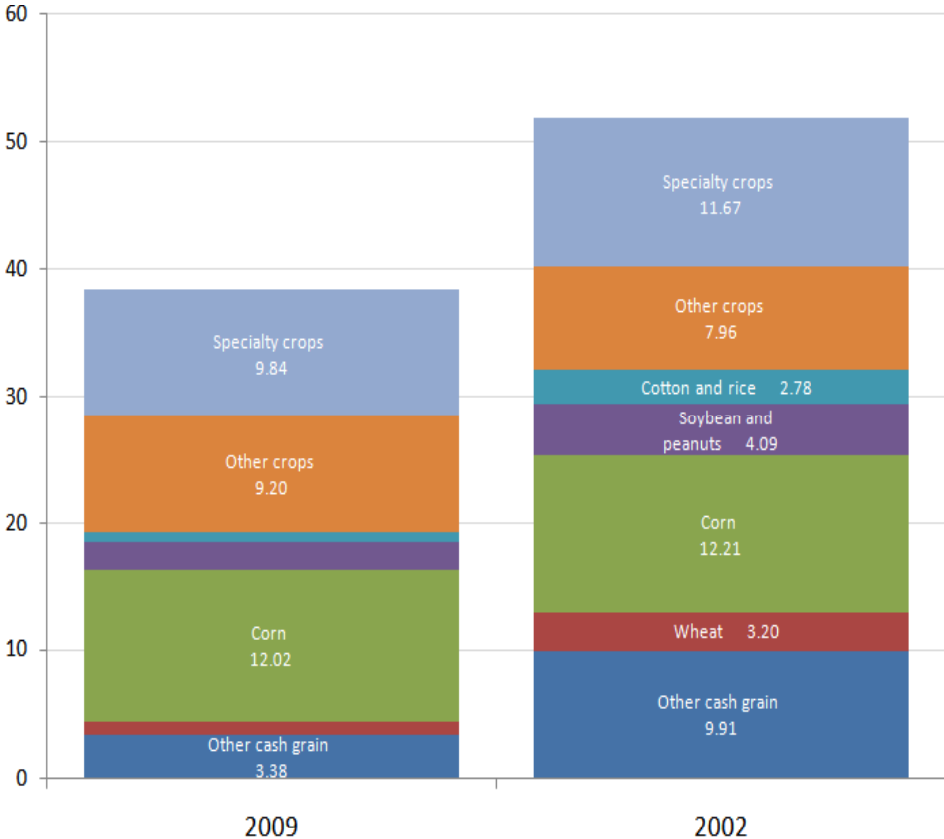


Source: Agricultural Resource Management Survey (ARMS), USDA.

Distribution of farm businesses with high real estate leverage position (above 70%) by production specialty

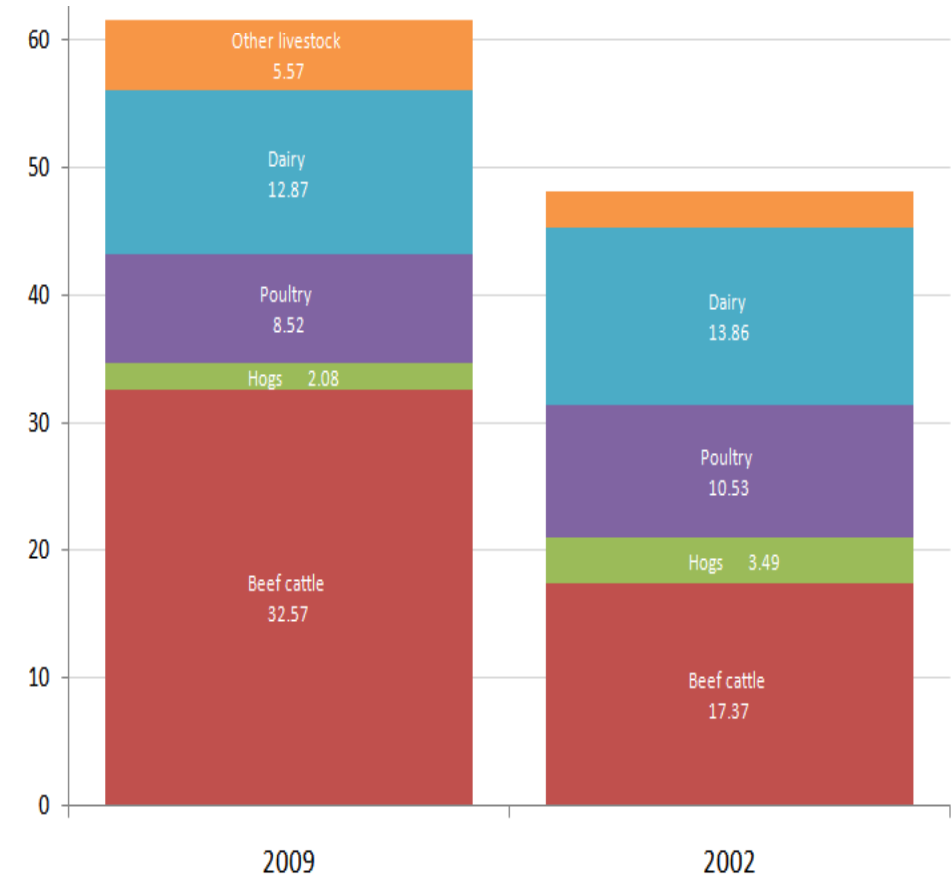
Crop farm businesses

Percent



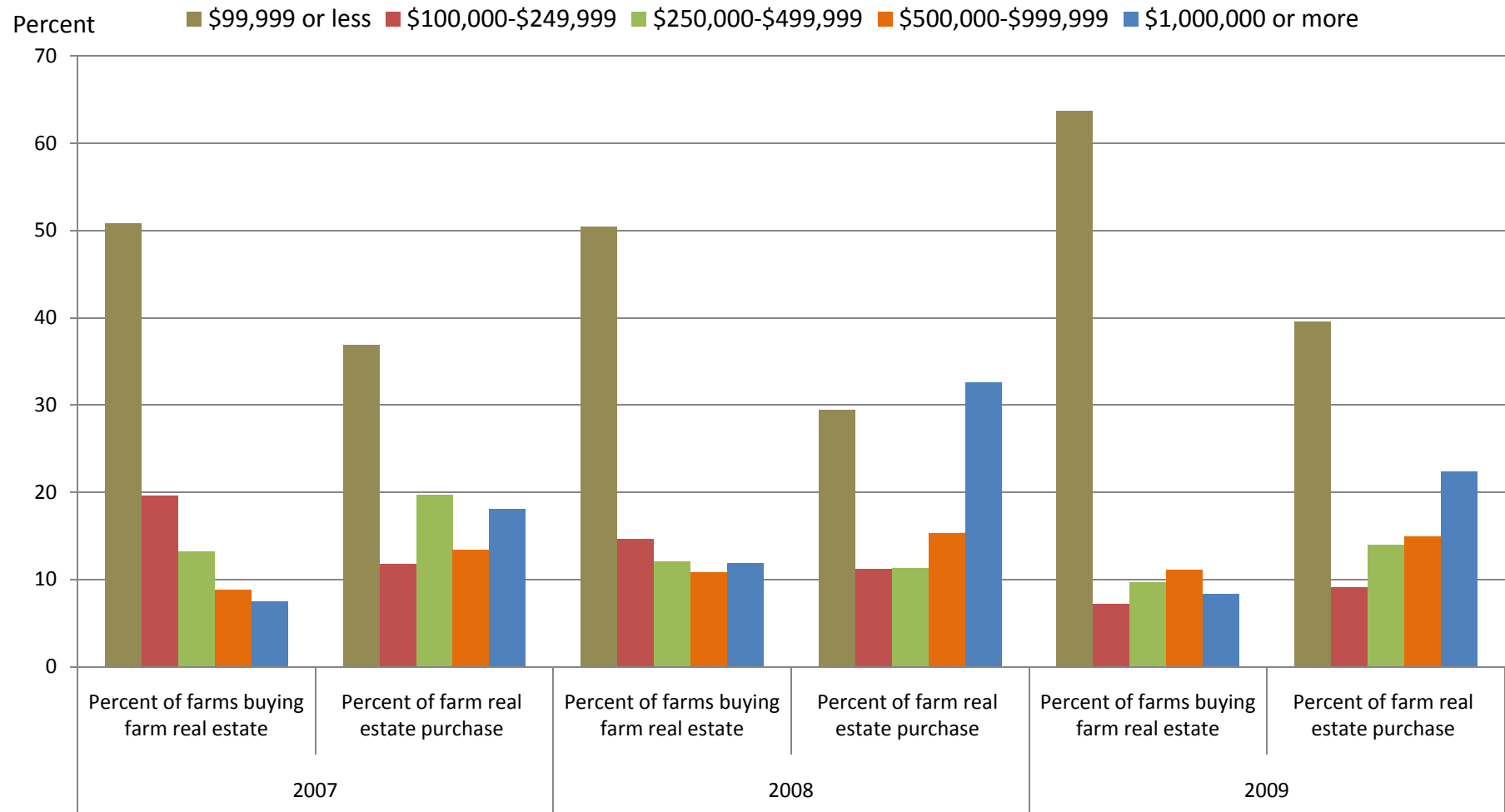
Livestock farm businesses

Percent



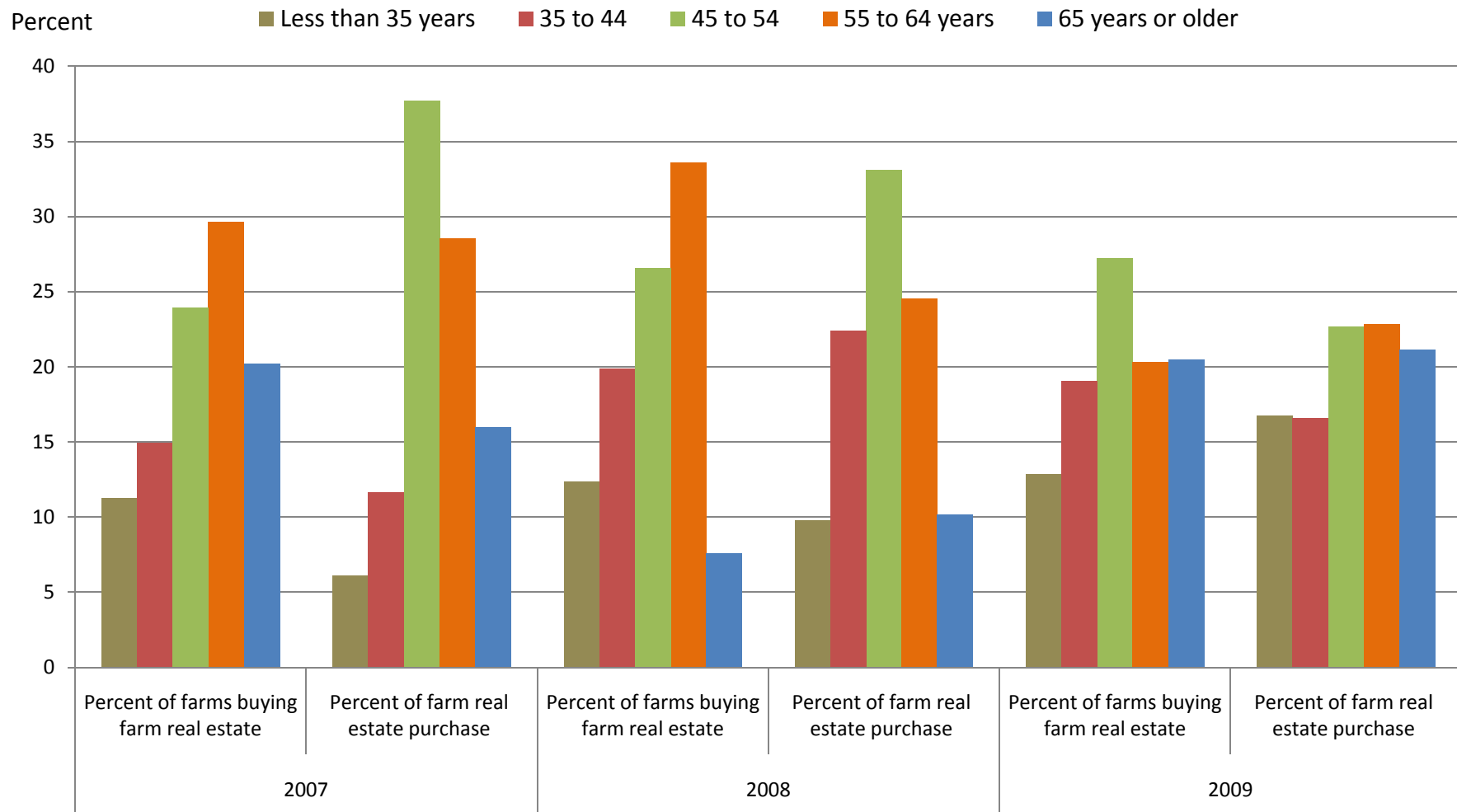
Source: Agricultural Resource Management Survey (ARMS), USDA.

Since 2007, roughly 50,000 farms per year have reported purchasing farm real estate with varying intensity by farm size



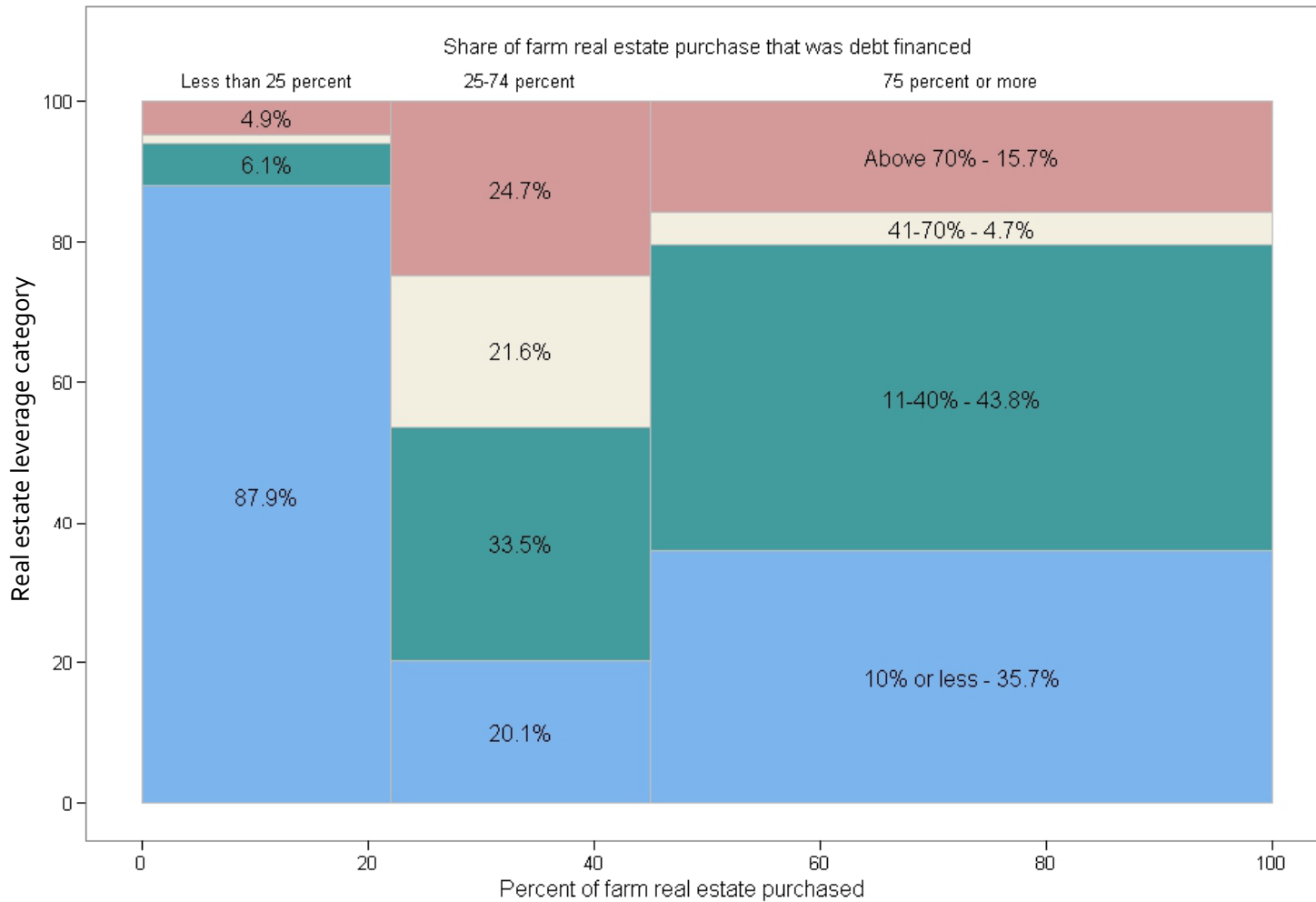
Source: Agricultural Resource Management Survey (ARMS), USDA.

The age distribution of farm operators purchasing farm real estate has also varied during the last three years



Source: Agricultural Resource Management Survey (ARMS), USDA.

In 2009, over half of farm real estate purchased was debt financed at 75 percent or more



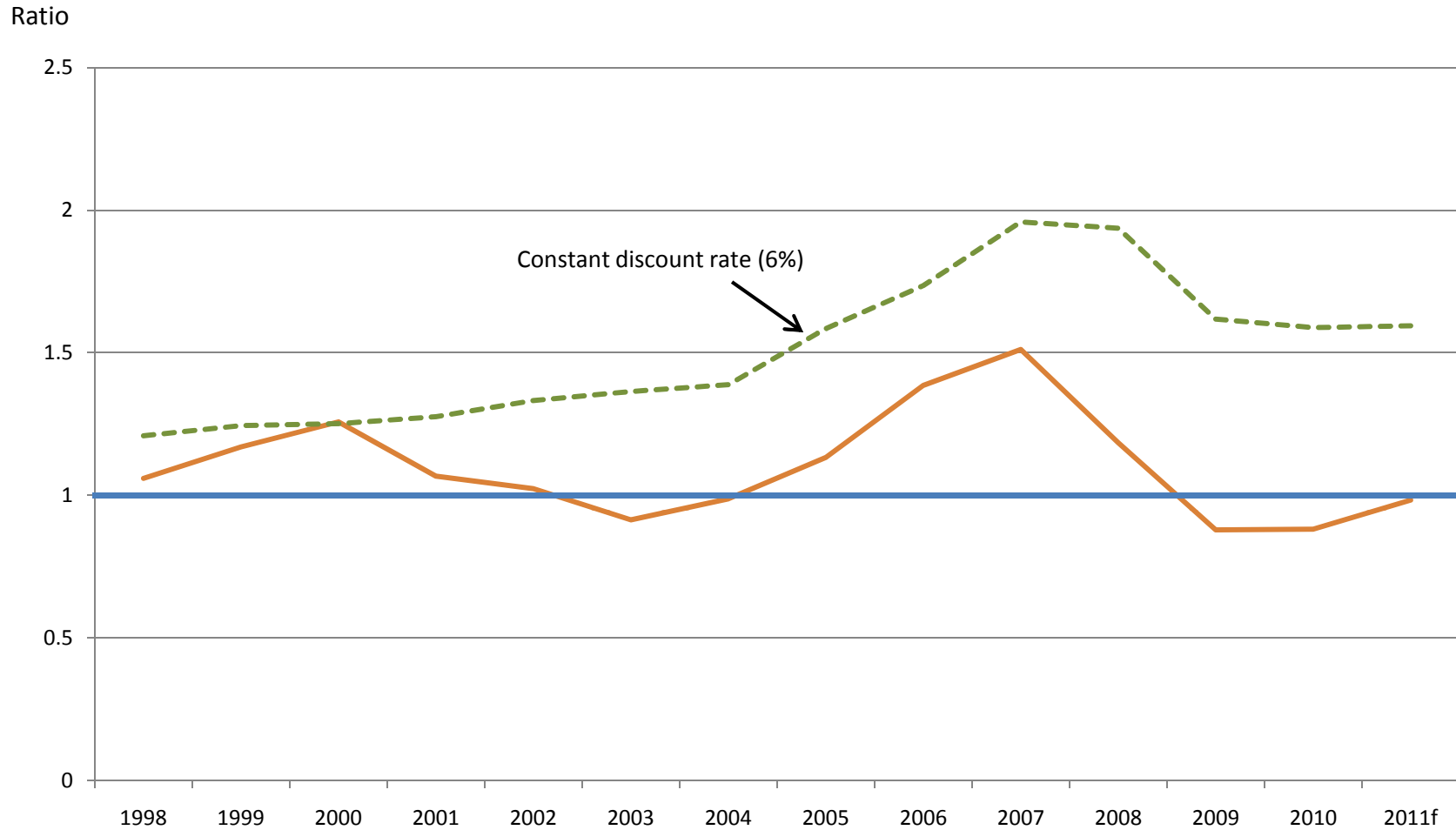
Source: 2009 Agricultural Resource Management Survey (ARMS), USDA.

Farm real estate values versus earnings

- Capitalized value of cropland versus market value
- Farm real estate affordability (sector level)
- Capitalized value and affordability for selected states
- Density map of capitalized value and affordability for select Midwestern states
- Factors besides urban density that explain imbalances
- Long-term trends

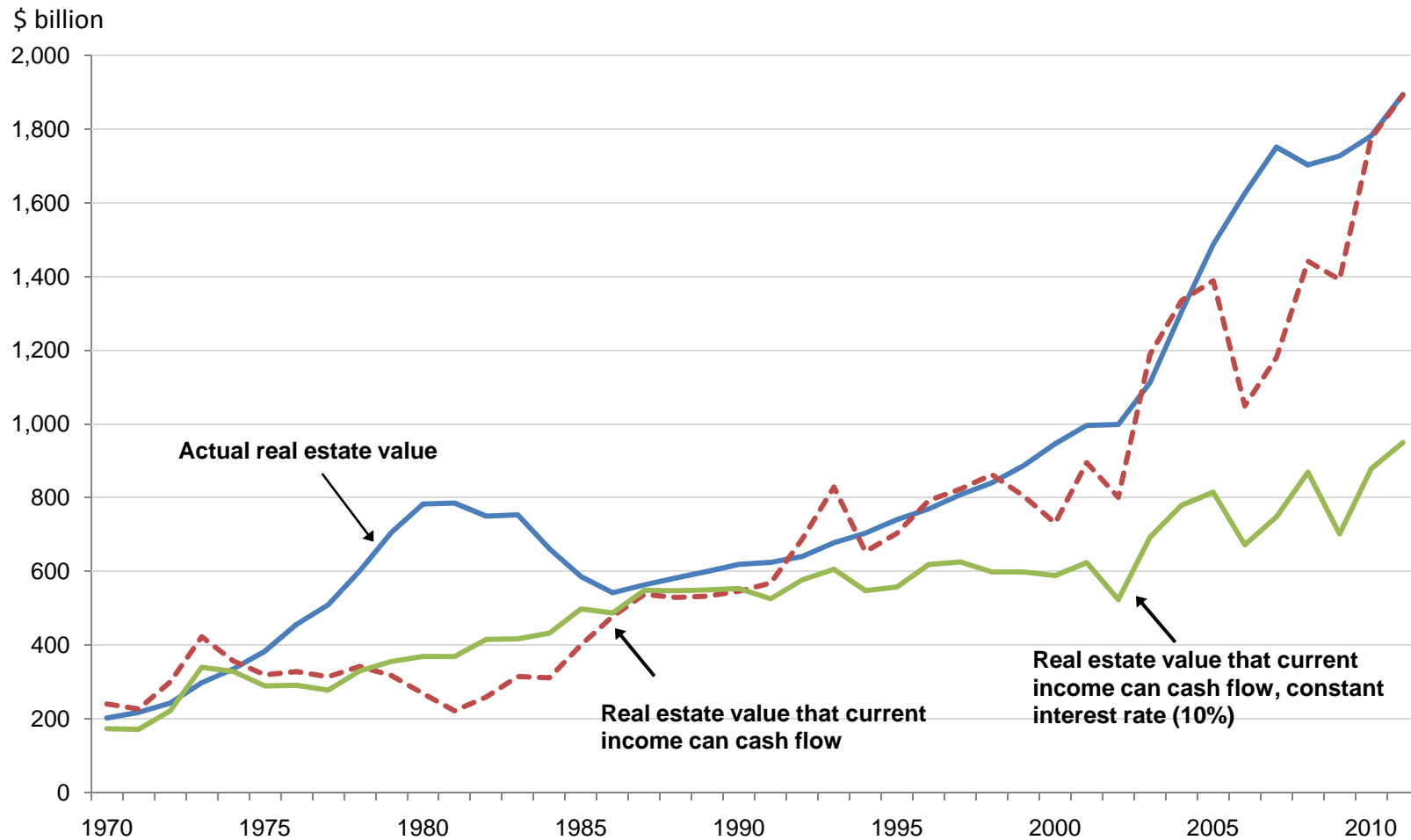


Cropland value divided by capitalized value ¹



¹ Capitalized values are used to quantify impacts of both cash rent and interest rate changes on land values.
A capitalized value represents the estimated discounted value of all future cash flows to farmland.
Capitalized value = cash rent / interest rate on 10-year note.

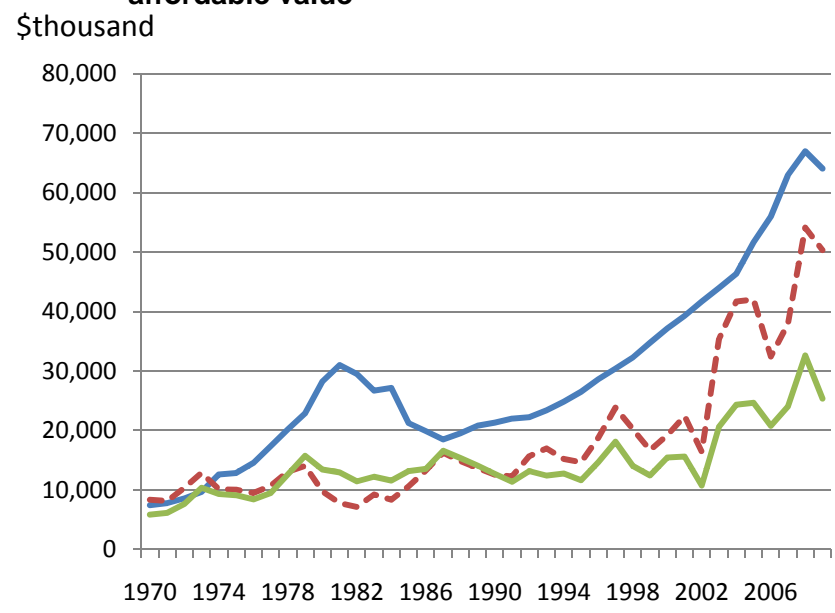
Current value of farm real estate versus maximum affordable value ¹



¹ In order to determine the maximum value of real estate that can be purchased from the adjusted net returns, we assume a loan term of 30 years and use average annual mortgage rates for this type of loan. This is then used to calculate the maximum real estate value that could be mortgaged based on agricultural production only.

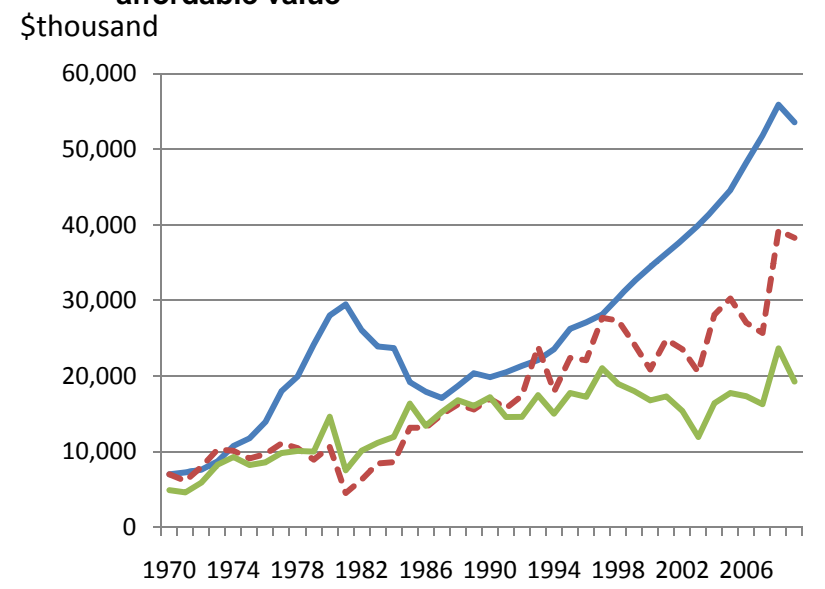
Missouri

Current value of farm real estate versus maximum affordable value

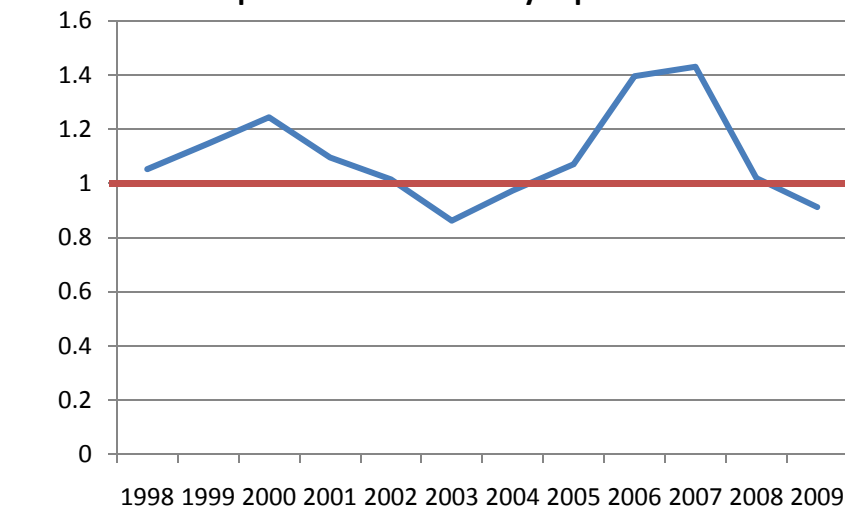


Ohio

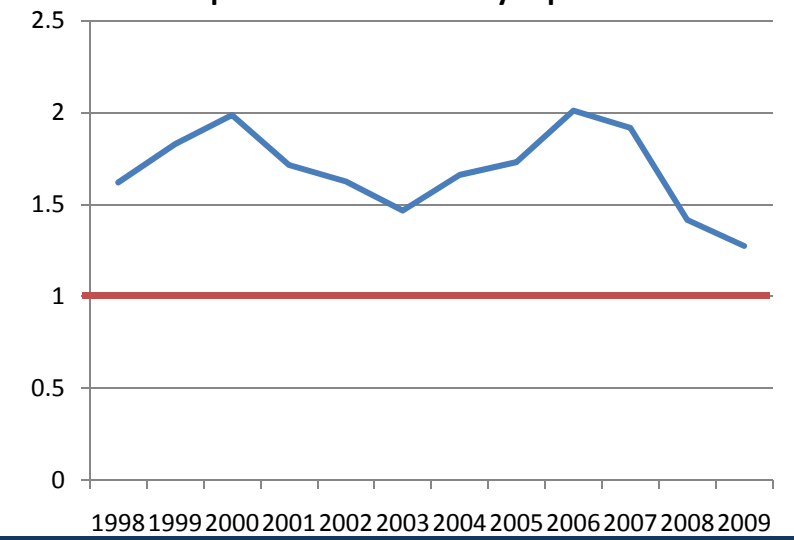
Current value of farm real estate versus maximum affordable value



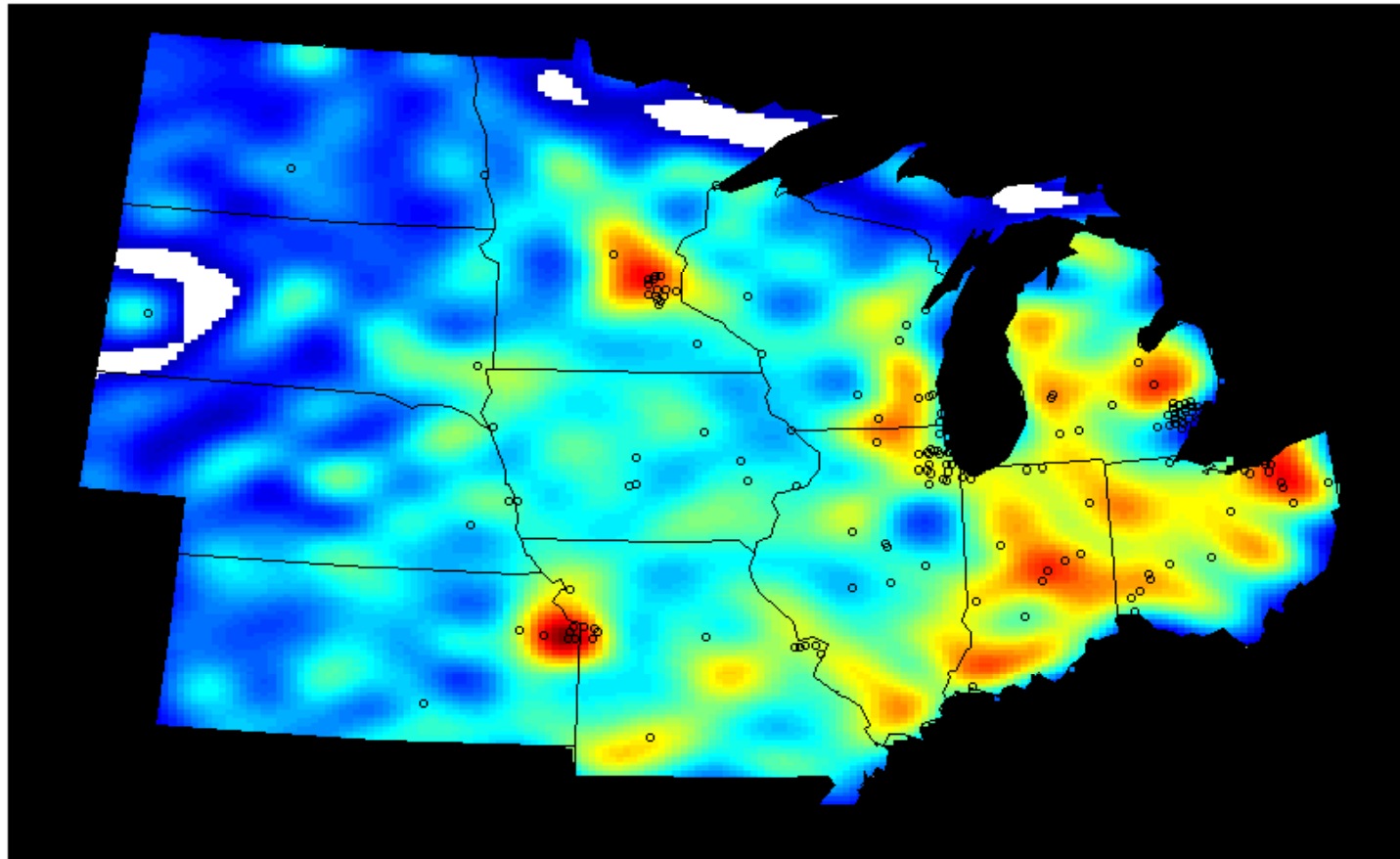
Ratio
Cropland value divided by capitalized value



Ratio
Cropland value divided by capitalized value

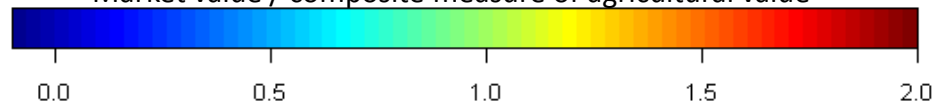


Farm real estate value relative to land affordability and capitalized value, 2009

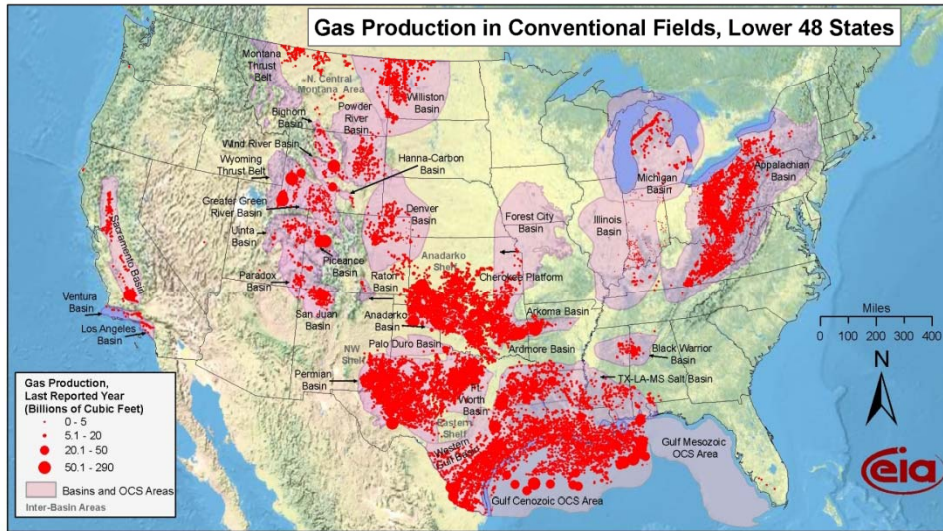


o Cities with population of 50,000 or more

Market value / composite measure of agricultural value



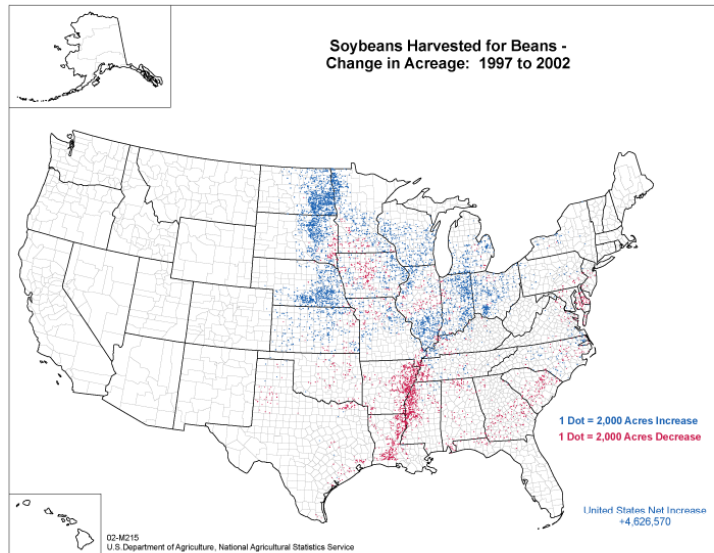
Source: 2009 Agricultural Resource Management Survey (ARMS), USDA.



Source: Energy Information Administration based on data from HPDI, IN Geological Survey, USGS
Updated: April 8, 2009

Market value > farm returns

Mineral rights
Natural Amenities



Market value < farm returns

Technology driven acreage shifts

Rent-to-Value Ratios*, County Average from 1999-2008

