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Growth of large farms and financial risk in U.S. agriculture

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The Findings and Conclusions in This Preliminary Presentation Have Not Been Formally Disseminated by the U.S. Department of Agriculture and Should Not Be Construed to Represent Any Agency Determination or Policy. This research was supported by the intramural research program of the U.S. Department of Agriculture, Economic Research Service.

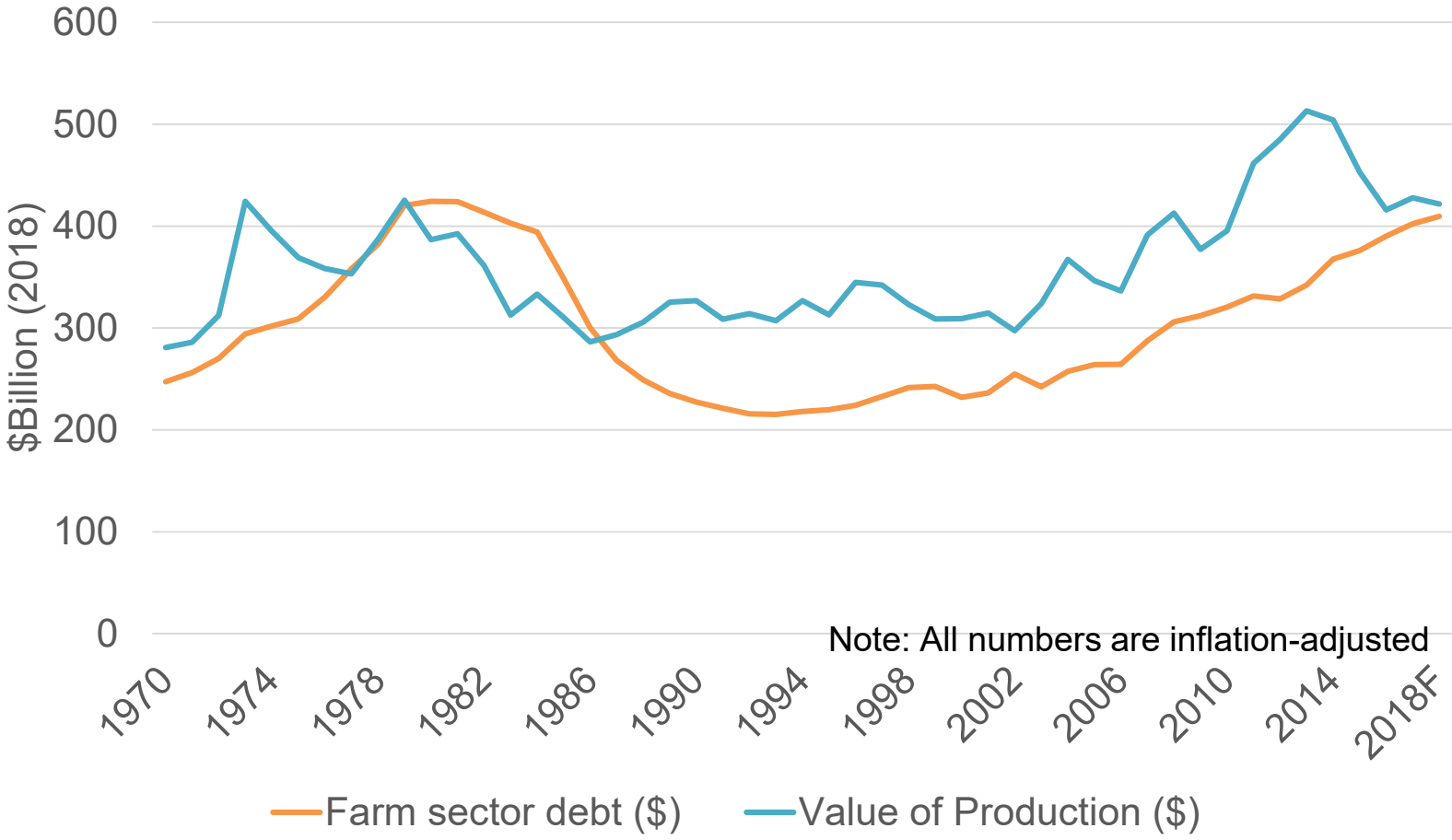
Current situation in farm economy

- Several years of lower commodity prices and farm income

- Interest rates are rising

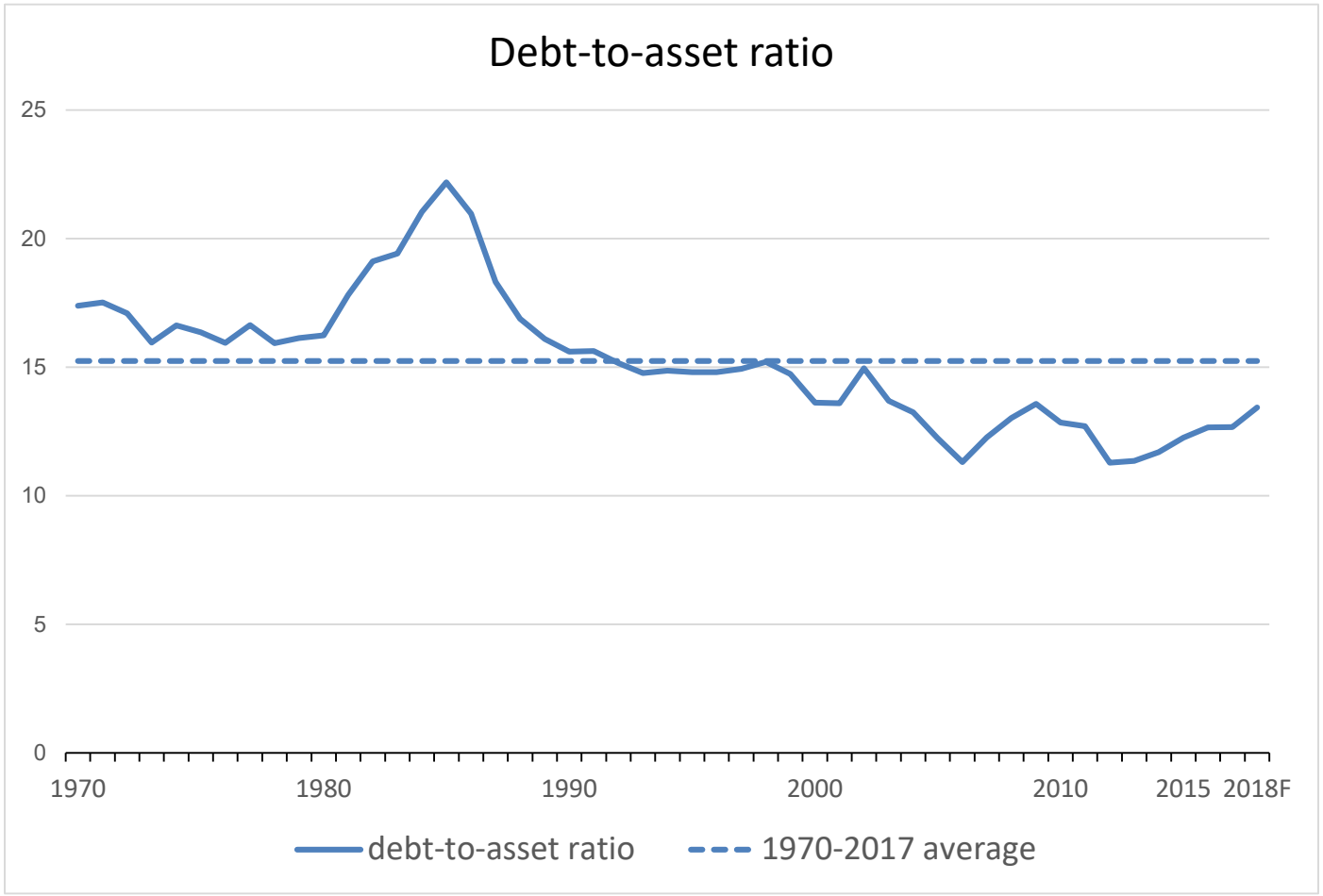
- Total farm debt is nearing the record peak set in the 1980s

Debt is rising, while value of production has declined due to lower commodity prices



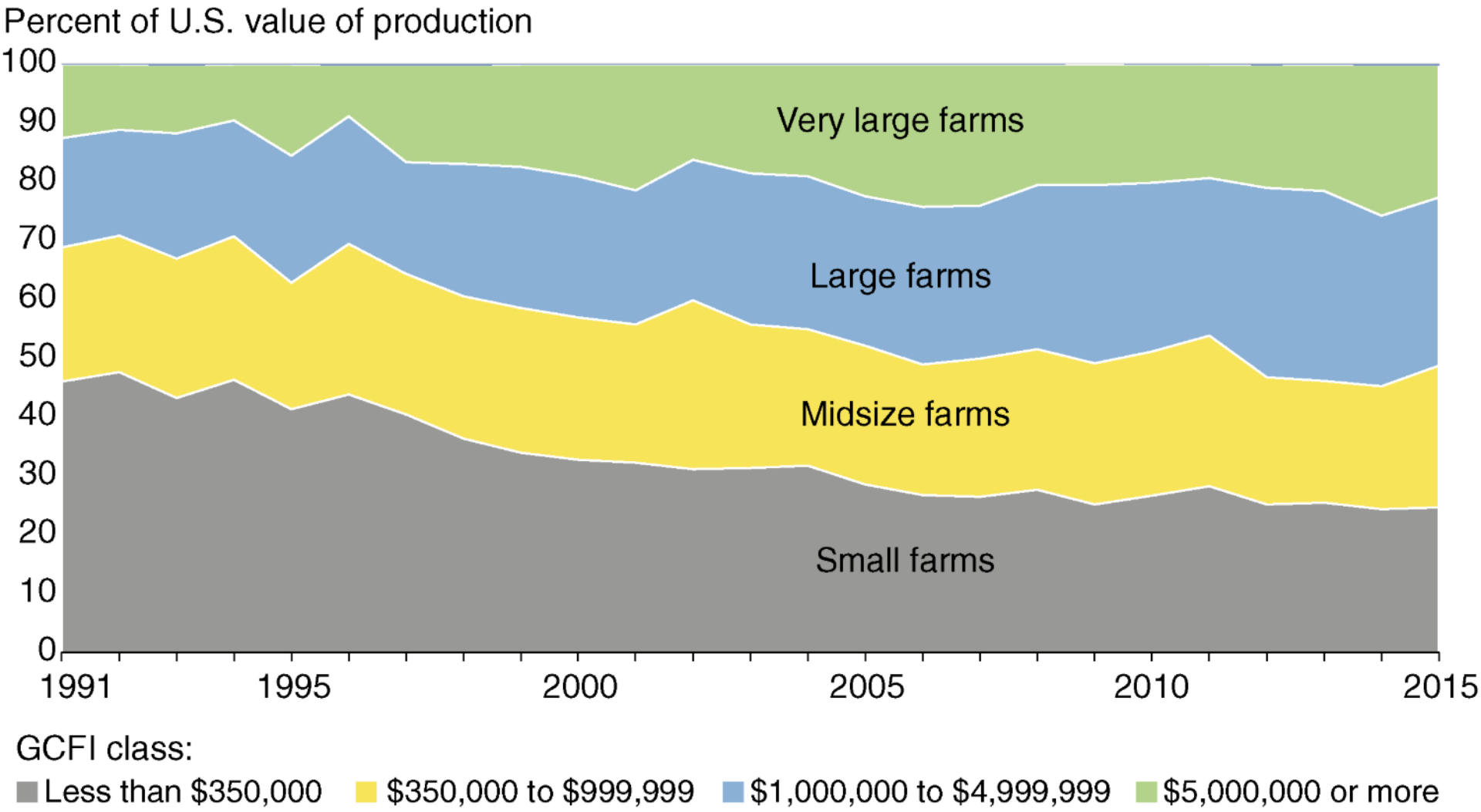
Source: Economic Research Service, using USDA data from ERS and NASS, Farm Income and Wealth Statistics

Farm sector debt-to-asset ratio is below long-run average but rising



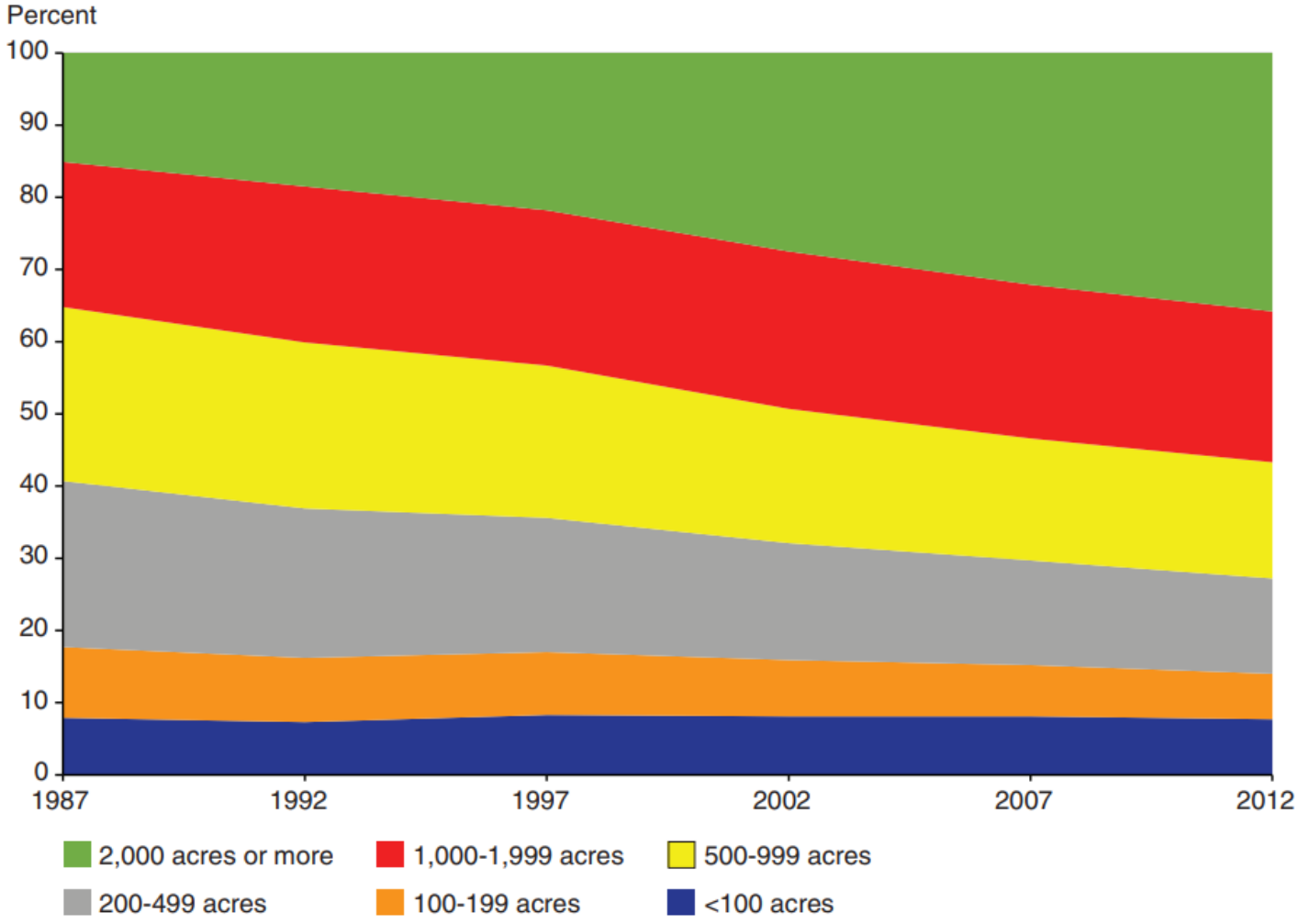
Source: Economic Research Service, using USDA data from ERS and NASS, Farm Income and Wealth Statistics

Production has shifted to larger farms



Source: Economic Research Service, using USDA data from ERS and NASS, Agricultural Resource Management Survey, 1991-2015

Share of cropland on farms with at least 2,000 acres more than doubled between 1987 and 2012



Source: Economic Research Service, using USDA data from NASS, Census of Agriculture, 1987-2012

Dairy production has shifted toward large farms

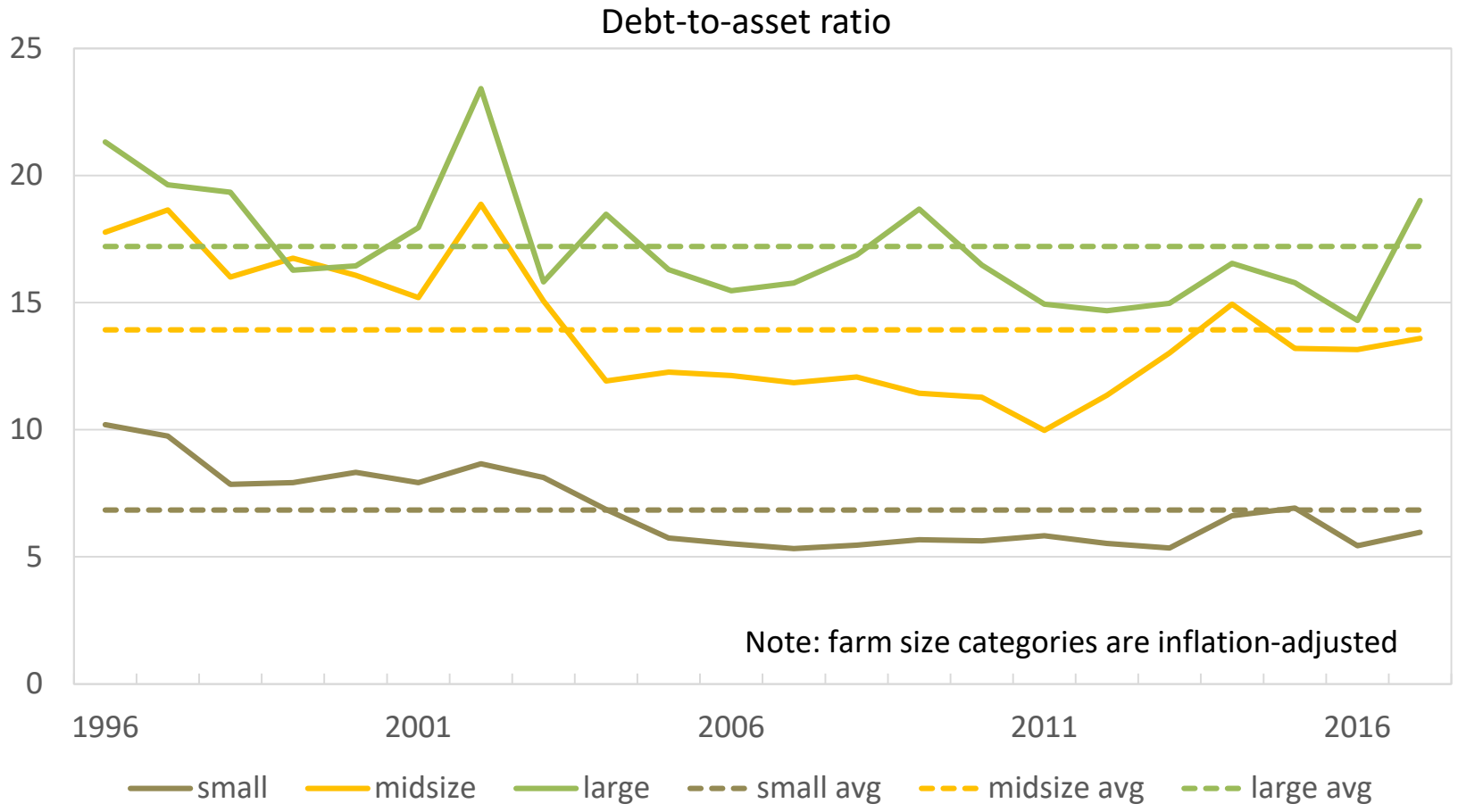
Herd size (milk cows)	Share (%) of milk cows			
	2000	**2005**	**2010**	**2016**
10-499	65.9	56.7	49.1	35.2
500-999	15.7	13.3	14.6	13.3
1,000-1,999	14.1	13.3	14.3	18
2,000+	4.3	16.7	22	33.5
All dairy farms	100	100	100	100

Source: Economic Research Service, using USDA data from ERS and NASS, Agricultural Resource Management Survey, 2000-2016

Large farms have grown due to changes in technology

- Large farms are able to exploit labor-saving technologies:
  - Larger/faster tractors, sprayers, and seeders
  - Larger single-rotary milking parlors
- This has resulted in larger farms having:
  - Lower costs of production
  - Higher profit margins
- But, large farms are generally more leveraged

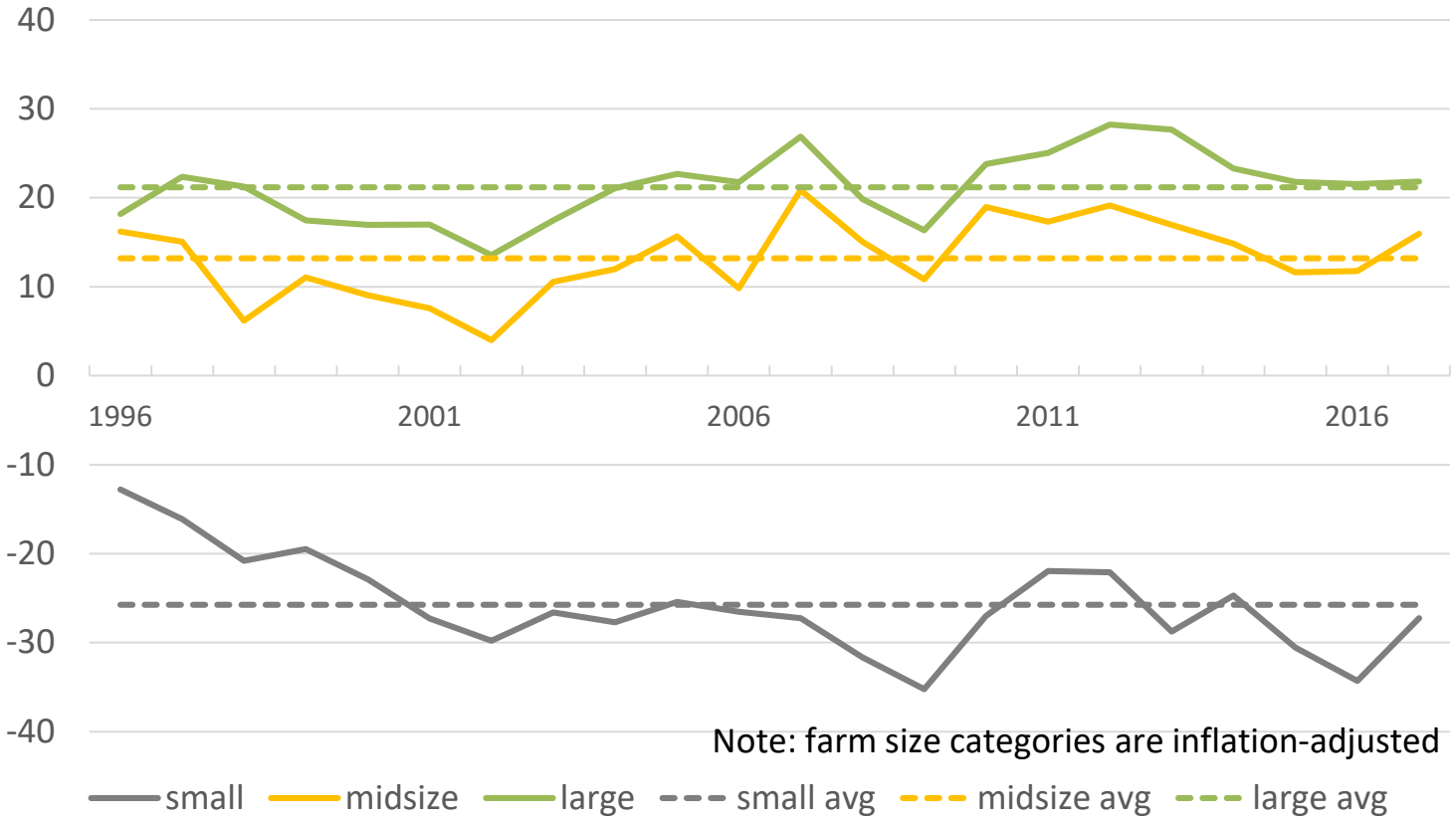
Large farms are generally more leveraged than small and midsize farms



Source: Economic Research Service, using USDA data from ERS and NASS, Agricultural Resource Management Survey, 1996-2017

Large farms are more profitable than small and midsize farms

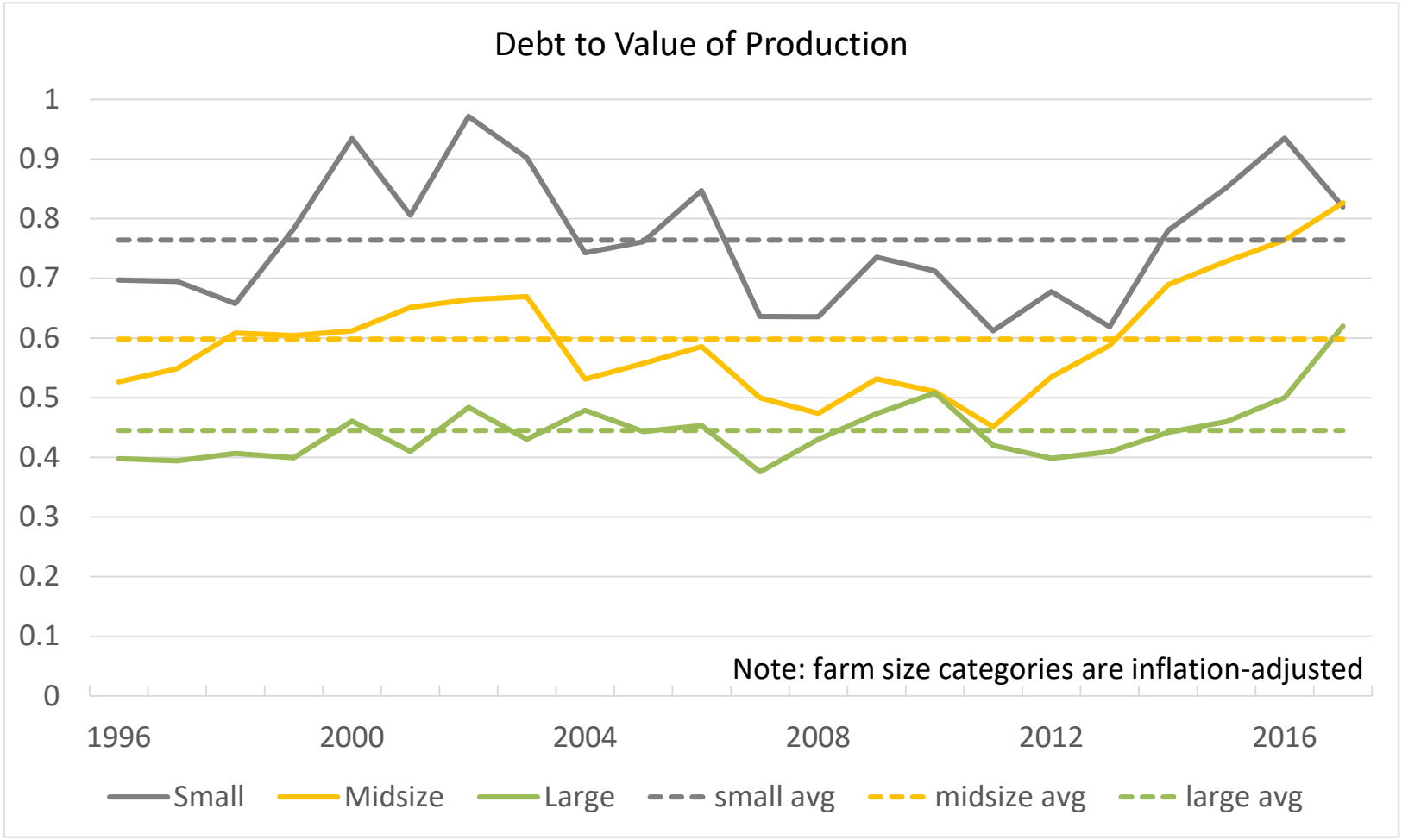
Operating profit margin = net farm operating income/revenue



Note: farm size categories are inflation-adjusted

Source: Economic Research Service, using USDA data from ERS and NASS, Agricultural Resource Management Survey, 1996-2017

Large farms are able to use debt more efficiently



Source: Economic Research Service, using USDA data from ERS and NASS, Agricultural Resource Management Survey, 1996-2017

Large farms have higher Term Debt Coverage Ratios even when prices fall

	2012-2014 *High commodity prices*		
	D/A < 40%	**D/A 40% - 55%**	**D/A>= 55%**
small	20.5	2.1	1.6
midsize	7.4	2.1	1.8
large	11.7	4.0	3.7
	2015-2017 *Low commodity prices*		
	D/A < 40%	**D/A 40% - 55%**	**D/A>= 55%**
small	19.5	2.9	1.5
midsize	6.1	1.3	1.8
large	8.6	3.6	2.3

Term Debt Coverage Ratio = Farm household income available to repay debt/ Total principal and interest on term debt

D/A = debt-to-asset ratio

Source: Economic Research Service, using USDA data from ERS and NASS, Agricultural Resource Management Survey, 2012-2017

Summary thoughts

- U.S. agricultural production has shifted to larger farms over last several decades
- Are larger farms financially riskier in current environment?
  - Not necessarily
  - More leveraged, but better able to repay debt obligations than smaller operations
  - Certain groups may be more vulnerable
    - Highly leveraged dairy operations

Questions?

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