Business and Credit Cycles in Agriculture

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Based on working paper with Todd Hubbs, USDA Economic Research Service. The views are those of the author and should not be attributed to USDA, ERS, or University of Illinois.

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Three essential questions for the farm economy in 2016

- How bad is it?
- How bad can it get?
- How long will this last?

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Economic cycles

- **Business cycle**: Expansion and contraction in aggregate economic activity
- **Credit cycle**: Expansion and contraction in credit and asset markets
  - Longer frequency and greater amplitude than business cycle
  - Peaks are closely related to banking failures
  - Recessions during credit cycle downturns are deeper and longer
  - Leading indicator of financial distress

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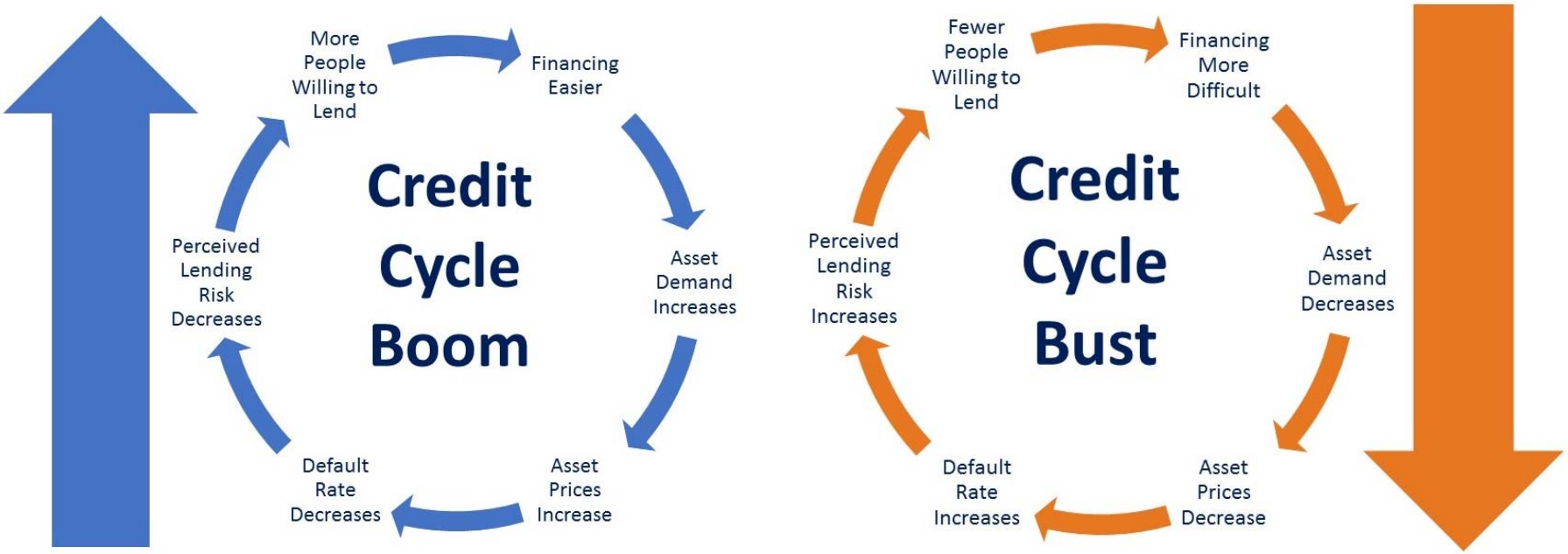
Credit and asset values as drivers of the economy



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A macroeconomic model for agriculture

Aggregate Economy	→	Agricultural Sector
Business Cycle		
Gross domestic product (GDP)	→	Gross value added (GVA)
Credit Cycle		
(i) Total credit to private non-financial sector	→	Total farm debt
(ii) Residential property prices	→	Farm real estate values
(iii) Credit-to-GDP ratio	→	Farm debt-to-GVA ratio

- Business cycle duration: 1 to 8 years
- Credit cycle duration: 8 to 50 years
- Credit cycle is the average of the cyclical components of debt, real estate, and output-to-debt ratios

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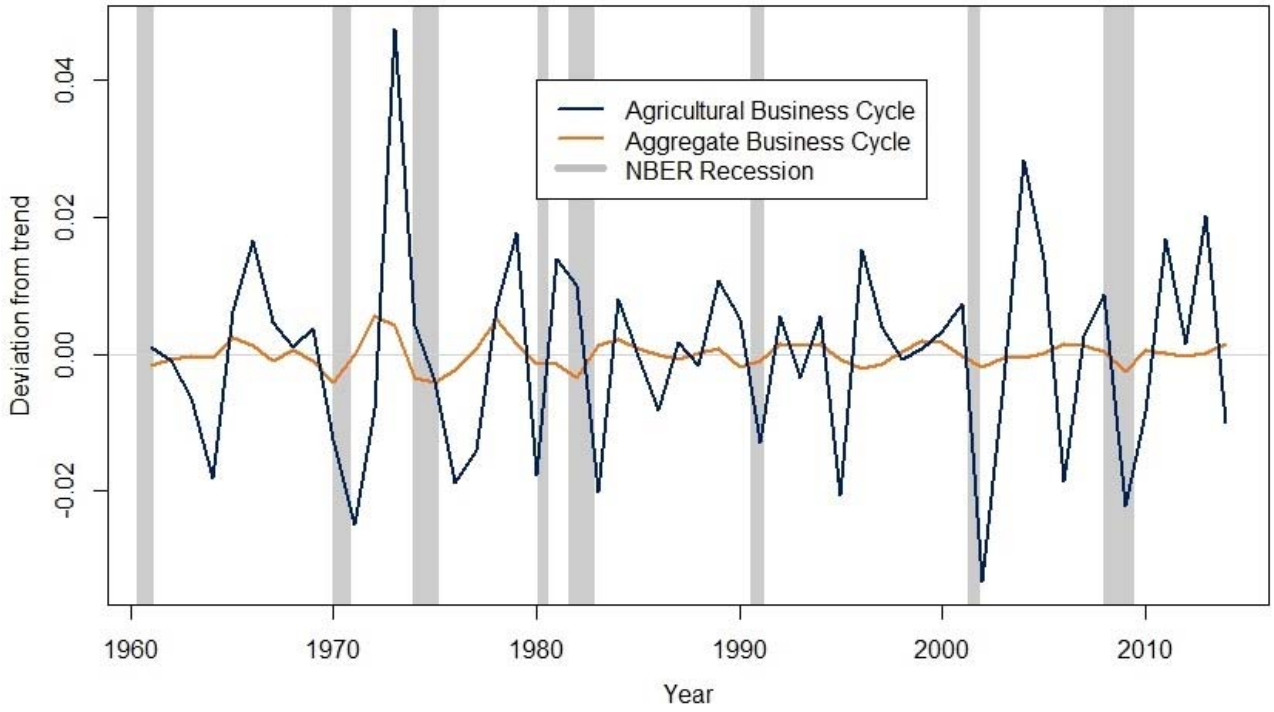
Business cycles



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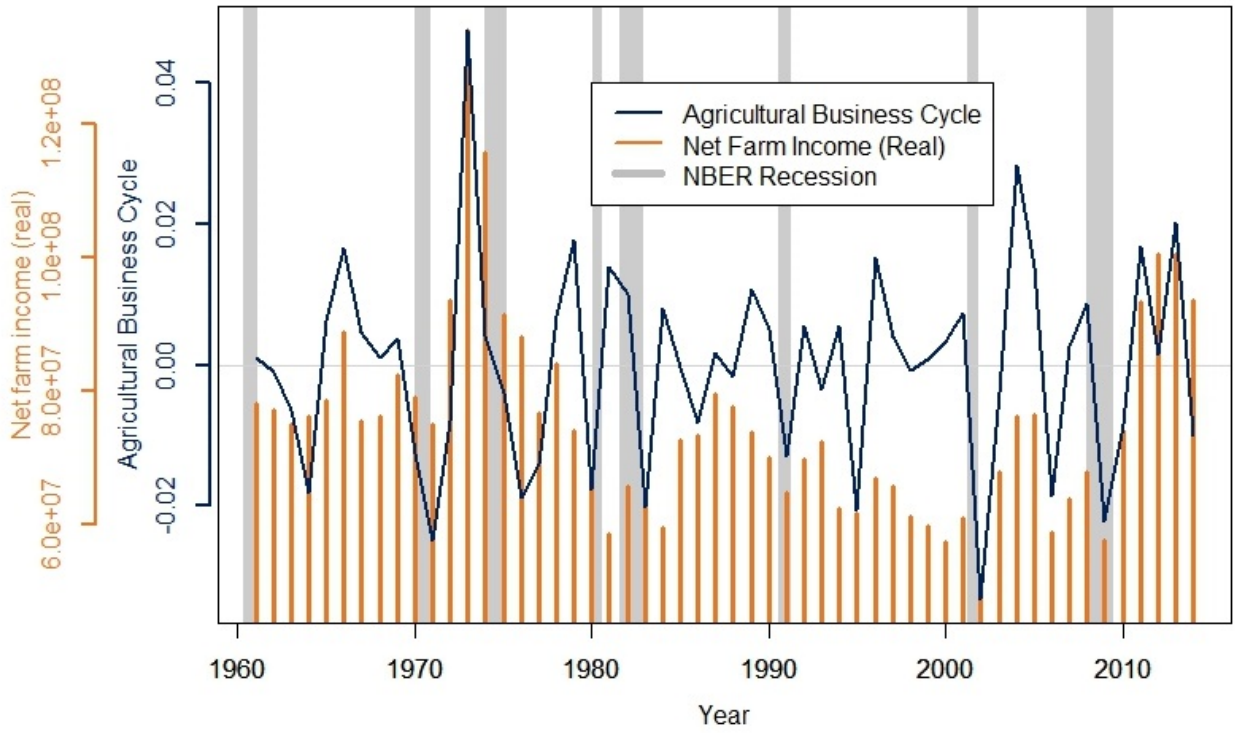
Net farm income & ag business cycle



Source: USDA-ERS

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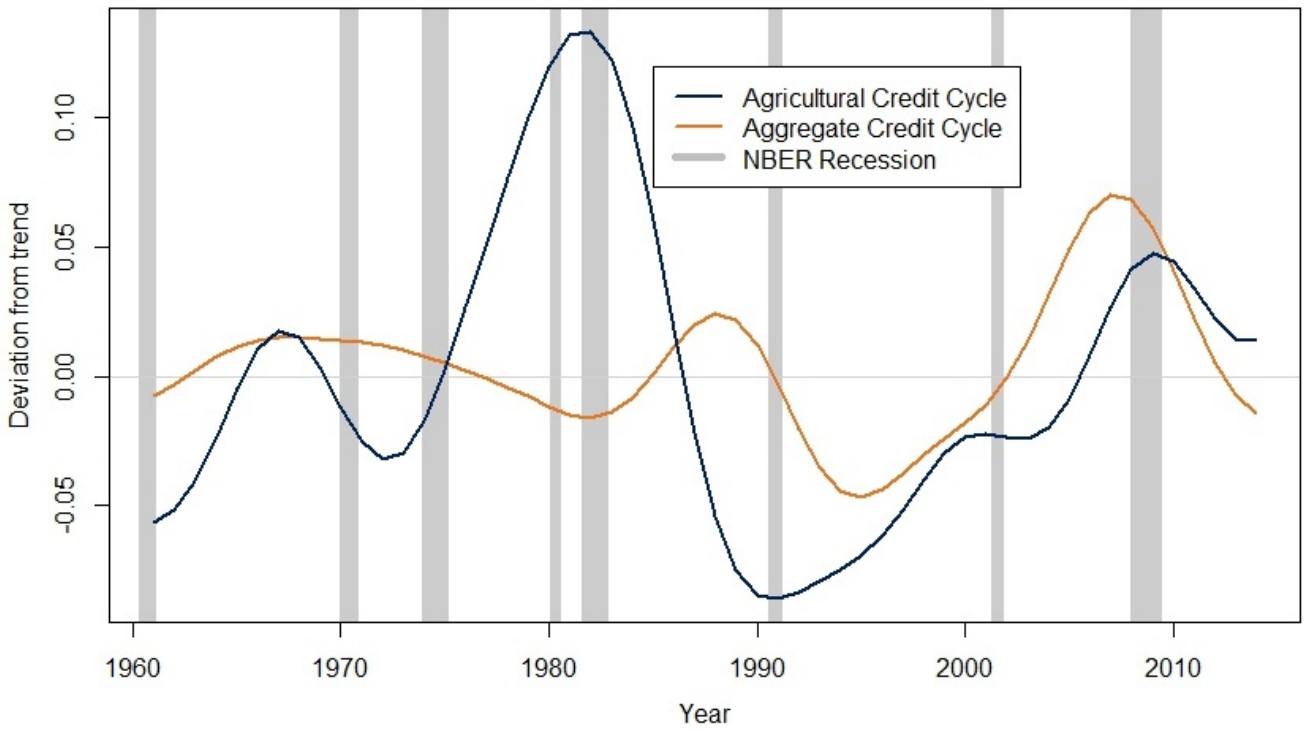
Credit cycles



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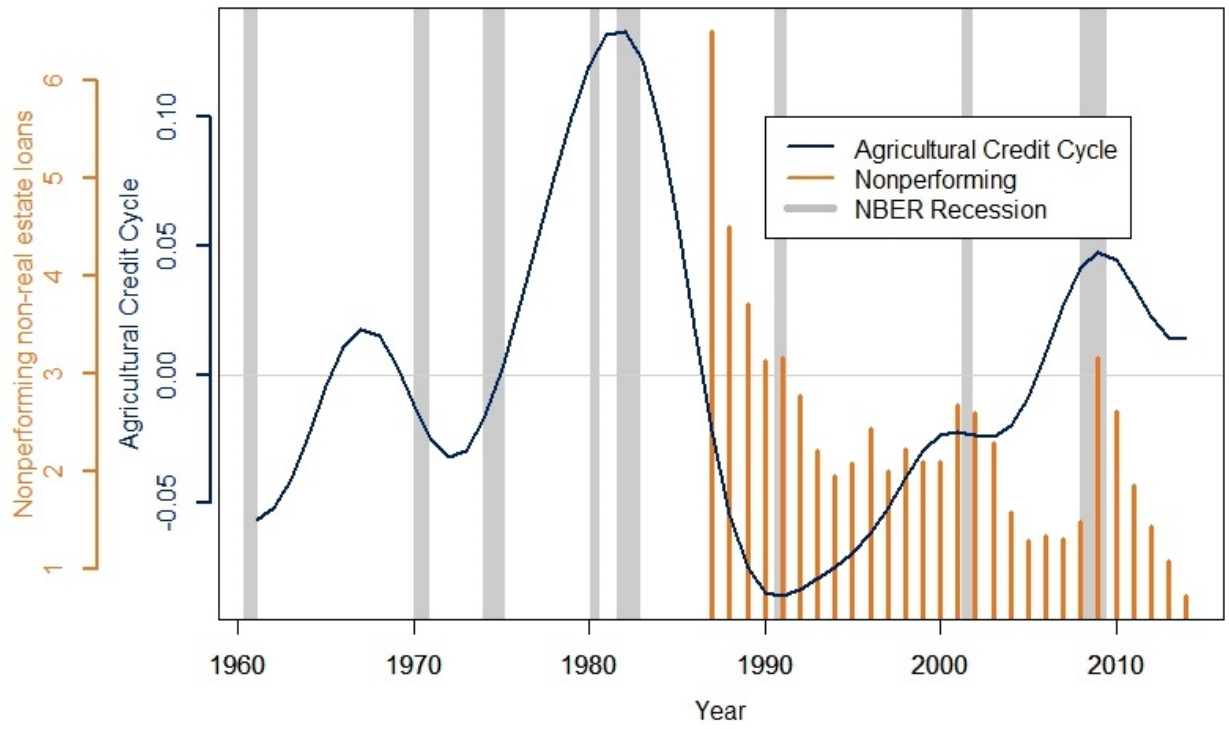
Nonperforming non-real estate loans & ag credit cycle



Source: Agricultural Finance Databook

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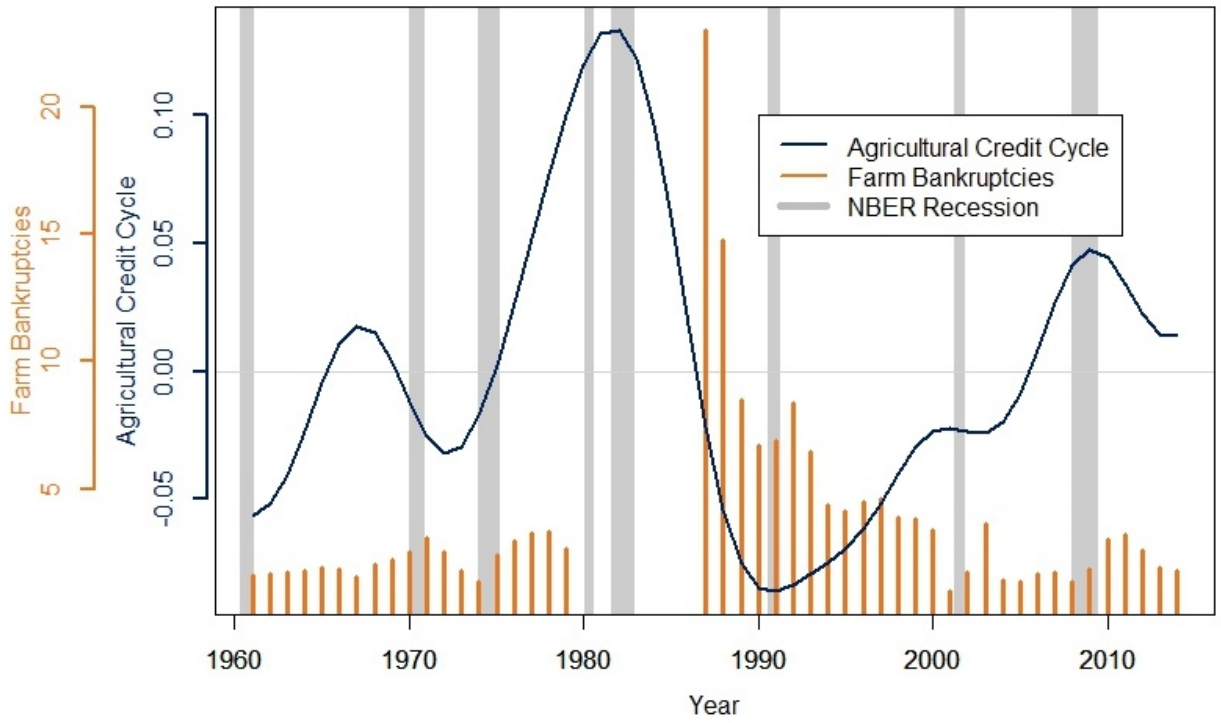
Farm bankruptcies & ag credit cycle



Source: US Bankruptcy Court

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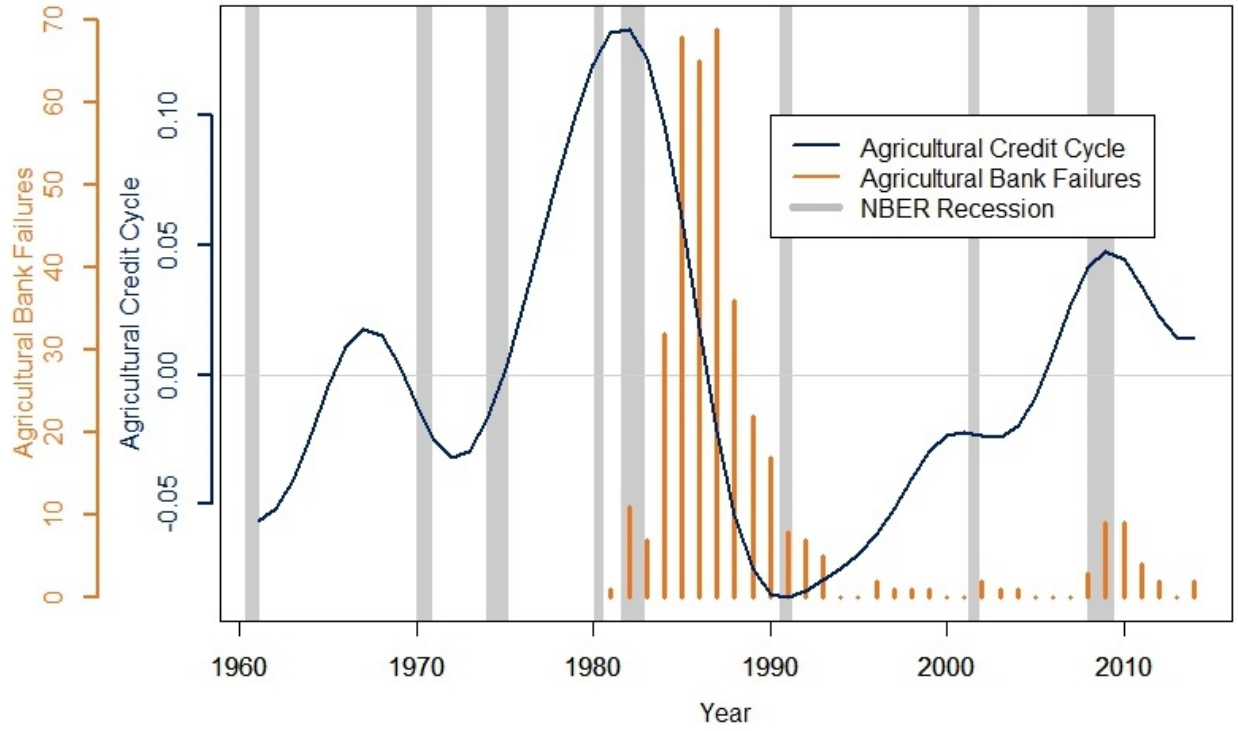
Agricultural bank failures & ag credit cycle



Source: Agricultural Finance Databook

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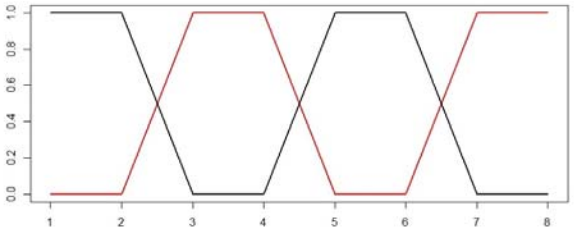
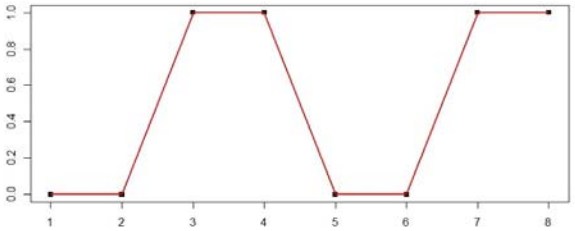
Synchronization of cycles

Exactly counter-cyclical



Exactly procyclical



- Credit and business cycles are *slightly procyclical*
- Agricultural and aggregate **business cycles** are *slightly counter-cyclical*
  - In the short-run, agricultural and aggregate economies tend to move in opposite directions
- Agricultural and aggregate **credit cycles** are *slightly procyclical*
  - In the long-run, agricultural and aggregate economics tend to move together

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Key takeaways

- Asset prices and credit are intrinsically linked through **credit cycle**
  - Three periods of boom and bust since 1960

↑	↓
1960 – 1967	1968 – 1972
1973 – 1982	1983 – 1991
1992 – 2010	2011 – ????

- Agricultural **credit cycle** currently in a downturn
  - Previous downturn durations: 5 years (68-72) and 9 years (83-91)
- Agricultural **business cycle** currently in a recession since 2013
  - Mean duration since 1960: 1.85 years
- Agricultural **credit** and **business cycles** are *slightly procyclical*

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Thank you

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