

# Nontraditional Finance Update

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*We gratefully acknowledge the cooperation and partnership of staff and members of KFMA*



## Outline

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- What
- Why
- How much?
- Recent research findings



# Defining nontraditional finance

Regulation/reporting?

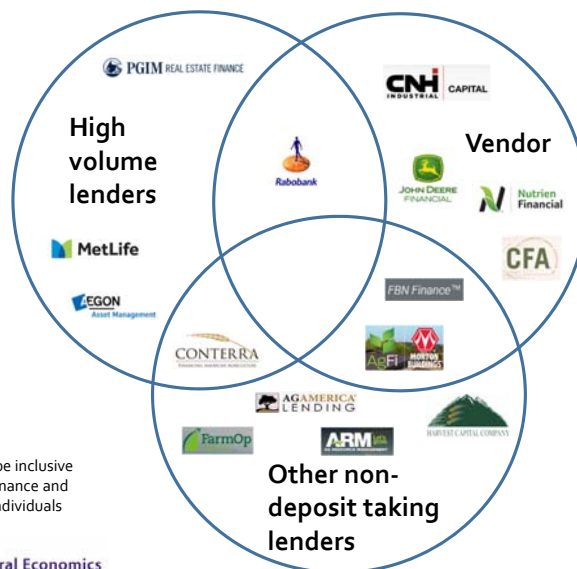
Age/experience?

Origination?

"Nontraditional credit suppliers or lenders...are those whose primary contacts with producers historically have been for goods and services other than credit" (Sherrick, Sonka, & Monke, 1994)

**Another definition:** Lending that is originated outside of the "traditional" local branch-loan officer model

## Types of nontraditional finance



Note: This figure is not intended to be inclusive of all firms offering nontraditional finance and does not include public lenders or individuals

# Why study nontraditional finance?

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- Producers: understand lending options & costs
- Lenders: understand competition
- Policymakers and financial regulators: measure the amount of debt from non-reporting entities and associated financial stress

# What drives nontraditional finance?

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## Supply side determinants

- “Outside” investment
- Innovation
- Credit standards

## Demand factors:

- Unique needs
  - Large and small?
  - Complex?
  - Fast-growing?
  - High share of rented land?
  - Increased appetite for risk?
- Financial stress ?



# Business model: High volume, branchless

- Competitive rates
- Focus on (very?) large commercial farms
- Farm sector expertise
- Service is a key part of the business model

# Business model: vendor credit

- Many forms of this
  - Trade credit
  - In-house financing arm
  - 3<sup>rd</sup> party
- Often exists to support product sales
  - Some vendors prefer 3<sup>rd</sup> party lenders (despite fee) except for riskier customers when it isn't possible
  - Cost of doing business in a competitive market
- With 3<sup>rd</sup> party, loan is often guaranteed by the supplier
- Rates competitive to low, may be absorbed by supplier as a cost of business or product prices
- Loan sizes relatively small, allows easy application (convenience matters)
- Anecdotally, repayment is high due to supplier relationship

# Business models: Other NDT lenders

- Also called “collateral-based”
- Staff often have farm lending expertise
- Typically, narrower lending decision: collateral + repayment ability
- Rates vary from competitive to relatively high
- Different approaches:
  - Alternative lending: farms that might have difficulty accessing traditional finance
    - Rigorous oversight of risk management and collateral
    - Higher rate that reflects higher risk
  - Unconventional farms
  - More leveraged/risk tolerant operations
  - Single lender for short term credit

## Some nontraditional lenders rival largest Farm Credit lenders

- Farm Credit Services of America: **\$35.7** billion loan volume in 2021
- Metlife: **\$21.7** billion agricultural loan portfolio (as of June 30, 2022)
- John Deere Capital Corporation: **\$20.35** billion in “agricultural loans” reported March 31, 2022
- Rabo Agrifinance: **\$15** billion loan volume reported in 2019 (not based on regulatory reports)
  - Rabobank N.A. had **~\$4.7** billion in non-real estate & real-estate ag production loans on Dec. 31 2018
- American AgCredit: **\$15.9** billion loan volume in 2021
- Conterra: **\$4** billion in loan assets across portfolios in 2020
- Frontier Farm Credit: **\$2.4** billion loan volume in 2021
- Farm loans holdings of the **largest 30** U.S. banks declined **17.5%** between Dec 2015 and March 2019 (**\$18.3** billion held in March 2019)
- 2022 USDA farm sector debt forecast: **\$496** billion (Sept 2022 forecast)

<https://www.fcsamerica.com/about/newsroom/financial-reports>  
<https://investments.metlife.com/financing-solutions/agricultural-finance/>  
<https://www.bankingdive.com/news/rabobank-us-agriculture-lending-gap/559342/>  
<https://www.agloan.com/about-us/reports/>  
<https://cdt.fiec.gov/public/>  
<https://www.frontierfarmcredit.com/about/newsroom/financial-reports>  
<https://www.reuters.com/article/us-usa-farmers-lending-insight/wall-street-banks-bailing-on-troubled-u-s-farm-sector-idUSKCN1U618E>  
<https://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/highlights-from-the-farm-income-forecast/>

# How big is nontraditional finance?

## Short answer

We don't know, at least 25% of farm lending nationally would be a reasonable guess

## Longer answer

- Estimate/educated guess by lending category
  - High-volume, branchless: 8-10%
  - Vendor: 10-12%
  - NDT lenders: 3-4%.
- Comparison: FCS 43%, Banks 40%, FSA 3% (ERS 2019)
  - **Note: percentages will not total 100**

## Older research findings

- More leveraged KS farms more likely to use multiple sources of credit including nontraditional sources (Brewer et al 2019)
- Implement dealer financing with USDA farm survey data (Ifft, Kuethé and Patrick 2017)
  - No correlation with financial status and implement dealer financing
  - Implement dealer-loans have lower interest rates for small and midsize farms
- Vendor credit for seed corn is effectively more expensive than standard operating loans (Fiechter and Ifft 2019)
- Trade credit offered by dairy feed manufacturers (Fiechter and Ifft 2022)
  - Increases dramatically when milk prices drop, used by more leveraged farms
  - Credit provided by feed manufacturers is **larger** than any single bank in northeast US

## New findings: market share

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- Nontraditional real estate lenders hold over 1/3 of Farmer Mac's Farm and Ranch portfolio, following substantial growth since 2013 (Lyons and Takach 2022)
- Perceived competition from nontraditional lenders is related to some commercial bank lending practices and outcomes (Kuethe et al 2022)
- Cooperatives have capacity to expand credit offerings (Mashanga and Briggeman, 2022)

## New findings: strategies

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- Convenience, underserved borrowers
- Tetteh et al (2022) – detailed case studies
- Anecdotes that nontraditional lenders can provide larger loans (i.e. Stevens 2022)
- Nontraditional *real estate* lenders, such as cooperatives, provide financing to benefit their customers or attract new customers (Lyons and Takach, 2022)
- Beginning farmers more likely to rely on nontraditional finance (Thilmany et al 2022)

## New findings: relationship to farm risk

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- Findings from USDA/farm survey data are inconclusive (McDonald et al 2022)
- In Chapter 9 bankruptcy cases, traditional lenders were more likely to recoup loans, but nontraditional lenders held a relatively small share (Rabinowitz and Secor 2022)
- Among FSA lenders, short term vendor finance correlated with higher probability of default, but not intermediate vendor finance (Dodson et al 2022)

## New findings: Equipment finance

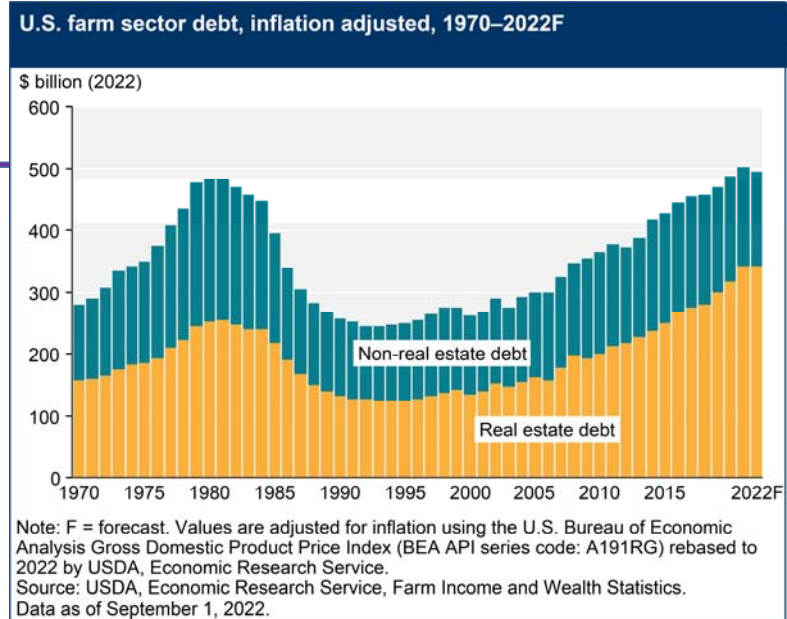
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Based on Luke Byers' MS thesis

Manuscript under preparation by Briggeman, Byers, Ifft, Kuhns, Miller and Yu

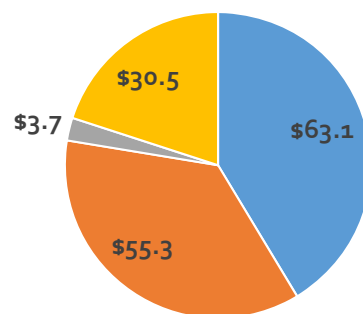


## Farm sector debt estimates



## Nonreal estate debt shares

US Nonreal Estate Farm Debt in 2020, \$ Billion



Commercial banks Farm Credit System Farm Service Agency Individuals and others 1/

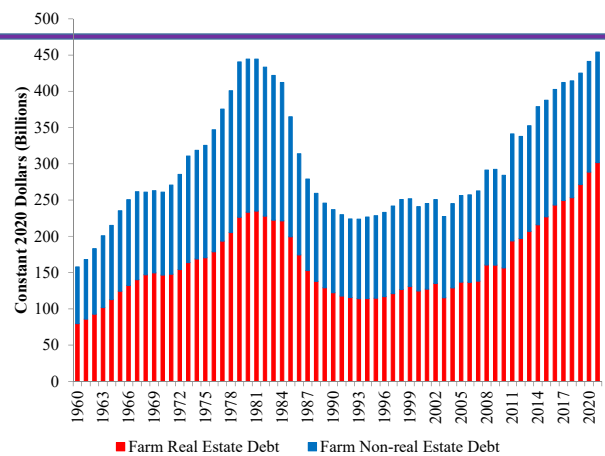
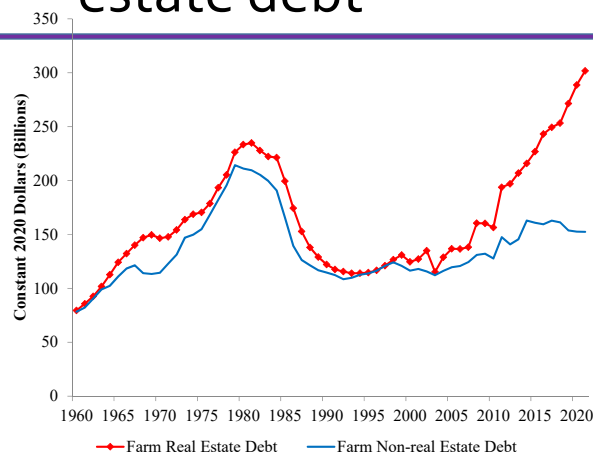
## Farm debt estimates

“Individuals  
and others”

Growth of  
nontraditional  
finance



# Non-real estate debt no longer tracks real estate debt



Sources: USDA Economic Research Service  
**KANSAS STATE UNIVERSITY** Agricultural Economics



## The challenge

Alternative sources of information on farm debt

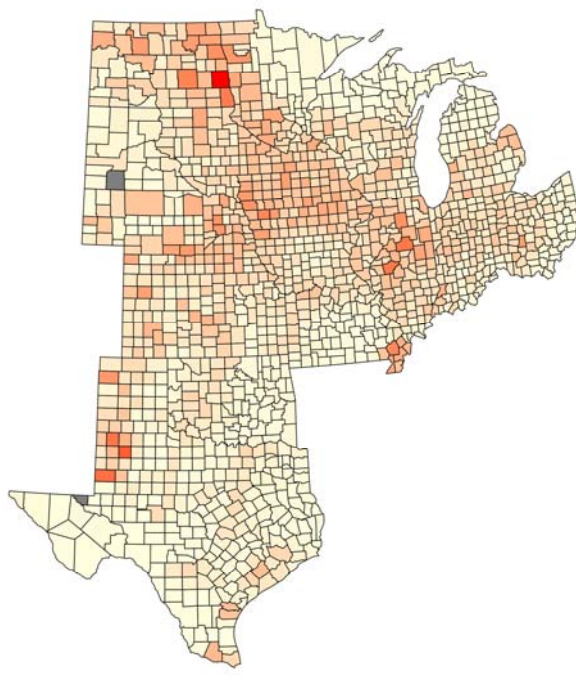
**KANSAS STATE UNIVERSITY** Agricultural Economics



# Overview

- Data on **all** liens placed on farm equipment in 14 field-crop intensive states from 2000-2020
- USDA Agricultural Resource Management Survey (ARMS) is used to estimate “Individuals and Others”
- Compare data
  - Total equipment loan collateral/volume for all 14 states
  - State-level regression analysis

Collateral Equipment Value  
2000-2020



## Study area: value of farm equipment collateral

Source: EDA data on select equipment for  
14 states, 2000-2020

## Liens as a Data Source

- Lien documents collateral pledge
- Publicly available
- Standard business practice (Gopal, Schnabl, 2020)
- Uniform Commercial Code



## UCC Data

- Secured party: lender name and classification
- Buyer: State, FIPS, zip code
- Equipment: make, model, size, value
- Filing date
- Scope
  - Standard farm equipment for field crop production
  - 100+ horsepower equipment when relevant
  - 4.5 million liens analyzed





	BUYID	BUYSTATE	BUYZIP	BUYFIPS	BUYCTY	UCCID	UCCDATE	UCCSTATUS	SPID	SPCLASS	SPCOMP	SPCITY	SPSTATE	EQTUNIT	EQTUCCYR
1	F130361	MO	64673	129	MERCER	15293852	2013-10-21	SALE	A134746	60000	BANK NW	HAMILTON	MO	1	1969
2	J585097	MO	63552	121	MACON	15312175	2013-11-01	SALE	A118202	60000	BANK OF KIRKSVILLE	KIRKSVILLE	MO	1	2005
3	J584944	MO	63957	223	WAYNE	15311841	2013-10-28	SALE	A156595	60000	1ST MIDWEST BANK	PIEDMONT	MO	1	2007
4	J585051	MO	65026	131	MILLER	15312273	2013-10-28	SALE	A672071	60000	CNTRL BANK	ELDON	MO	1	2007
5	H429103	MO	63877	155	PEMISCOT	15312179	2013-11-01	REFINANCE	A644763	60000	BANK STAR OF THE BOOTHEEL	STEELE	MO	1	2003
6	J585616	TX	77975	285	LAVACA	15314360	2013-10-28	SALE	A105831	60000	PEOPLES STATE BANK	HALLETTSVILLE	TX	2	2006
7	J585307	OH	44622	157	TUSCARAWAS	15311267	2013-10-07	SALE	A330198	60000	ELMIRA SVGS BANK	ELMIRA	NY	1	2014
8	J585467	TX	76887	307	MCCULLOCH	15313802	2013-10-29	SALE	A254806	60000	COMMERCIAL NATL BANK	BRADY	TX	1	2014
9	G754767	TX	76933	081	COKE	13097207	2012-04-03	TERMINATI	A606908	60000	SAN ANGELO NATL BANK	SAN ANGELO	TX	1	NA
10	J283023	MO	65035	151	OSAGE	15297916	2013-10-22	TERMINATI	A142501	60000	BANK OF ST ELIZABETH	SAINT ELIZABETH	MO	1	NA
11	J012793	KS	67356	099	LABETTE	15297806	2013-10-25	TERMINATI	A115712	60000	COMMERCIAL BANK	PARSONS	KS	1	2011
12	F661484	MN	56314	097	MORRISON	15312952	2013-10-21	SALE	A615412	60000	STEARNS BANK	UPSALA	MN	1	NA
13	J581638	MO	63401	127	MARION	15293243	2013-10-23	SALE	A740062	60000	H N B NATL BANK	HANNIBAL	MO	1	1947
14	J582439	MN	55072	115	PINE	15296964	2013-10-18	SALE	752369	60000	NORTHVIEW BANK	SANDSTONE	MN	1	1967
15	H044298	OK	73662	009	BECKHAM	15303799	2013-10-09	SALE	A319591	60000	INTERBANK	SAYRE	OK	1	NA
16	J582457	MN	56560	027	CLAY	15297363	2013-10-14	SALE	A658152	60000	MIDWEST BANK	WAUBUN	MN	1	2001
17	J585010	MO	65722	105	LACLEDE	15312152	2013-10-31	REFINANCE	A109484	60000	CNTRL BANK	LEBANON	MO	2	NA
18	H157188	IA	51338	041	CLAY	15301872	2013-09-23	SALE	A605084	60000	STATE BANK	EVERLY	IA	4	NA
19	E329203	MO	65240	019	BOONE	15312148	2013-10-31	SALE	766740	60000	MARTINSBURG BANK & TRUST	HALLSVILLE	MO	3	NA
20	F403654	TX	75645	459	UPSHUR	15313332	2013-10-28	SALE	A419146	60000	SPRING HILL STATE BANK	LONGVIEW	TX	1	1996
21	J585893	MN	56310	145	STEARNS	15312743	2013-10-25	SALE	A501126	60000	STEARNS BANK	ALBANY	MN	1	2013

Source: EDA data on select equipment for 14 states, 2000-2020

EQTNU	EQTMAN	EQTMODEL	EQTDESC	EQTCODE	EQTSN	EQTSTZ	EQTEDAYR	EQTATTACH	EQTVALUE	EQTAE	IBV_ADJ_EST
U	WHITE	N/A	UTILITY TLB	8230	218190	Z	1969	NA	0	NA	16000.0
U	HUSQVARNA	HUV-4420	UTILITY VEHICLE	8980	HP0542562559	A	2005	NA	5739	E	5227.5
U	KAWASAKI	3010-TRANS4X4	UTILITY VEHICLE	8980	JK1AF0J1478514096	A	2007	NA	5913	E	5227.5
U	AGCO	LT-75-A	UTILITY LOADER	8220	P167999	G	2005	NA	25289	E	23039.5
U	ALLIED	N/A	UTILITY LOADER	8220	030567	Z	2003	WITH BOX BLADE	32406	E	15500.0
U	KAWASAKI	610	UTILITY VEHICLE	8980	JK1AFEA165B500807	A	2005	NA	3849	E	5227.5
N	KAWASAKI	610	UTILITY VEHICLE	8980	JK1AFED18EB511481	A	2014	NA	7314	E	10455.0
N	KAWASAKI	610	UTILITY VEHICLE	8980	JK1AFEE12EB504590	A	2014	NA	7314	E	10455.0
N	AG-KING	4540	UTILITY TLB	8230	NSN 075568841	D	NA	NA	32000	E	27105.0
U	POLARIS	RANGER-XP	UTILITY VEHICLE	8980	4XARH68A08440092	C	2008	INC/SN	5399	E	6675.0
N	POLARIS	RANGER-XP-800	UTILITY VEHICLE	8980	4XATH76A084209773	C	2011	NA	13484	E	13350.0
U	ALLIS-CHALM	180	UTILITY TRACTOR	8210	10393D	F	NA	NA	36558	E	18481.0
U	FARMALL	H	UTILITY TRACTOR	8210	245689	C	1947	NA	800	E	10268.0
U	FARMALL	656	UTILITY TRACTOR	8210	49874	F	1972	NA	12186	E	18481.0
U	DEERE	2210	UTILITY LOADER	8220	211714	A	2003	NA	8828	E	8203.5
U	VENTRAC	4000	UTILITY TRACTOR	8210	SAA1166	B	2001	WITH MOWER	8663	E	8214.0
U	INTL	966	UTILITY TRACTOR	8210	27569	I	1974	NA	21008	E	31486.5
U	FARMALL	H	UTILITY TRACTOR	8210	217812	C	1946	NA	800	E	10268.0
U	INTL	H	UTILITY TRACTOR	8210	272531	C	1948	NA	800	E	10268.0
U	NEW-HOLLAND	3415	UTILITY TRACTOR	8210	237558300	C	1996	NA	9270	E	10268.0
N	NEW-HOLLAND	BOOMER-40	UTILITY TRACTOR	8210	2103012610	C	2012	NA	34913	E	20536.0

Source: EDA data on select equipment for 14 states, 2000-2020

# Interpretation of UCC data

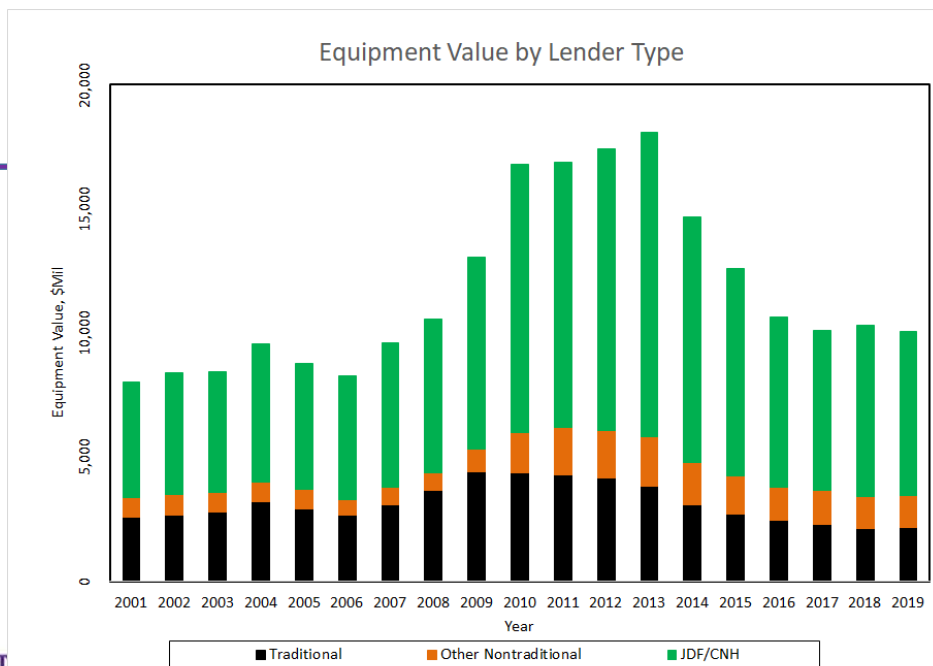
- Collateral value, not loan value
- Non-operator equipment loans
  - May not be relevant after data cleaning
- LTV ratio differences between lender types
  - Traditional: 65-70%
  - Nontraditional/Implement dealers: 80-100%
- Blanket liens by traditional lenders

**Key point: likely underestimates nontraditional market share**

Lender	Equipment Type/Name	Ave. Down Payment
JDF	5045E Utility Tractors	0%
JDF	5055E Utility Tractors	0%
JDF	5065E Utility Tractors	0%
JDF	5075E Utility Tractors	0%
JDF	6 Series M & R Tractors	0%
JDF	Balers and related equipment	0%
Case IH	AFS Connect Steiger Series Tractors	20%
Case IH	AFS Connect Magnum Series Tractors	20%
Case IH	Optimum Series Tractors	20%
Case IH	Puma Series Tractors	20%
Case IH	Maxxum Series Tractor	20%
Case IH	Vestrum Series Tractors	20%
Case IH	Farmall 100A Series Tractors	20%
Case IH	Utility Farmall U Series Tractors	20%
Case IH	Utility Farmall C Series Tractors	20%
Case IH	Farmall Utility A Series Tractors	20%
Case IH	Compact Farmall C Series Tractors	20%
Case IH	Farmall V Series Tractors	20%
Case IH	Farmall N Series Tractors	20%
Case IH	Axial-Flow 150 Series Combines	20%
Case IH	Axial-Flow 250 Series Combines	20%
Case IH	Corn Heads	20%
Case IH	Draper Heads	20%
Case IH	Flex Auger Heads	20%
Case IH	Grain Heads	20%
Case IH	Pickup Heads	20%
Case IH	Speed-Tiller High-Speed Disks	20%
Case IH	True-Tandem Disk Harrows	20%
Case IH	True-Tandem Vertical Tillage	20%
Case IH	Heavy-Offset Disk Harrows	20%
Case IH	Nutri-Tiller	20%
Case IH	Ecolo-Tiger Series Disk Rippers	20%
Case IH	Ecolo-Tiger Series In-Line Rippers	20%
Case IH	Tiger-Mate Series Cultivators	20%
Case IH	Flex-Till Chisel Plow	20%
Case IH	Early Riser 2000 Series Planters	20%
Case IH	Early Riser 1200 Series Planters	20%
Case IH	Precision Disk Series Air Drills	20%
Case IH	Precision Air Air Carts	20%
Case IH	Flex Hoe Air Drills	20%
Case IH	Patriot Series Sprayer	20%
Case IH	Titan Series Floaters	20%
Case IH	Nutri-Placer Pull-Type Fertilizer Applicators	20%
Case IH	Trident Combination Applicator	20%

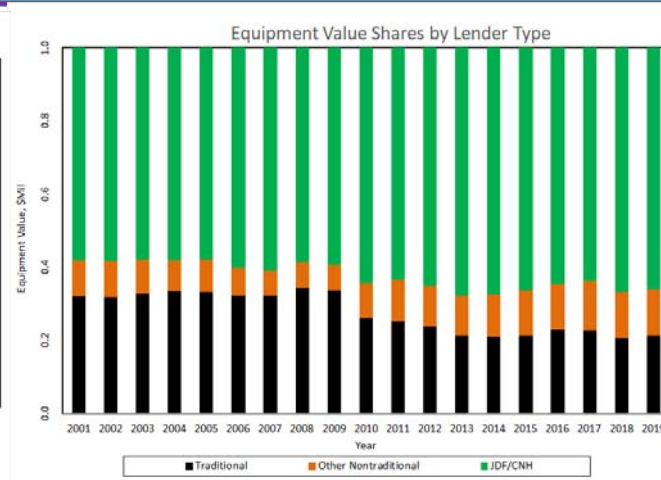
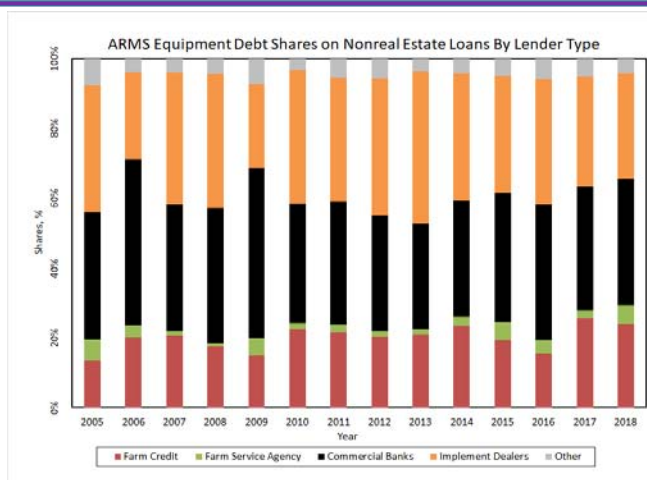
## Equipment Financing Advertisements

Lender	Equipment Type/Name	Ave. Down Payment
Case IH	RB455A Round Balers	24%
Case IH	Small Square Balers	20%
Case IH	Large Square Balers	20%
Case IH	Rotary Disc Mower	20%
Case IH	Pull-Type Disc Mower	20%
Case IH	Rotary Disc Mower Conditioner	20%
Case IH	Sicklebar Mower Conditioner	20%
Case IH	Windrower	20%
Case IH	Draper Headers	20%
Case IH	Sicklebar Header	20%
Case IH	Rotary Disc Headers	20%
Case IH	Wheel Rakes	20%
JDF	Sprayer Performance Upgrades Kits	20%
JDF	Air Seeding Tools and Carts	20%
JDF	Box Drills	20%
JDF	Planters	20%
New Holland	Tractors and Telehandlers	0%
New Holland	Haytools and Spreaders	0%



Source: EDA data on select equipment for 14 states, 2001-2019

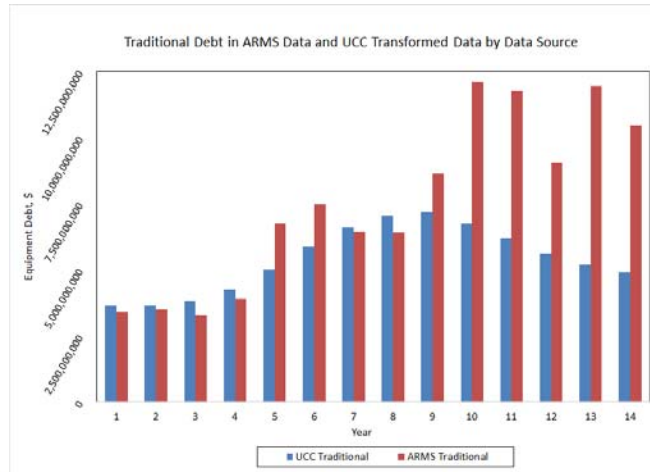
## Equipment Lending Comparisons



Source: USDA, ARMS EDA data on select equipment for 14 states, 2001-2019

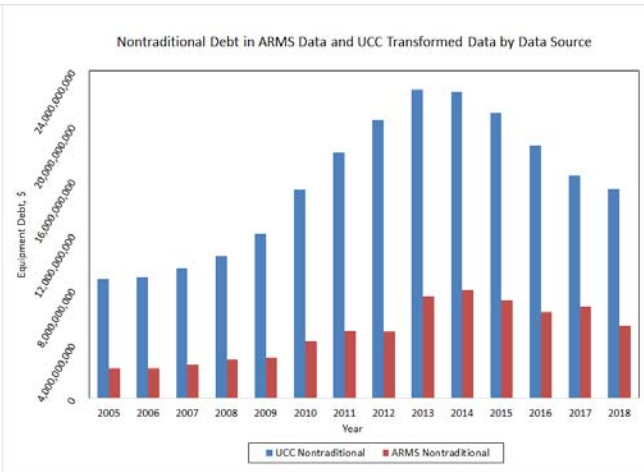


# Debt volume: ARMS vs ESTIMATED UCC



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## Not a simple issue

- USDA farm sector equipment debt is substantially underestimated
- Farm sector debt estimates are consistently estimated and well-understood, especially for publicly reported debt
  - Sources of call report data
  - Consider other data sources?
  - Test different types of ARMS elicitation

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# New study: multiple borrowing

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## Data:

- Kansas Farm Management Association (KFMA) data
- Period: 2002/2013-2020
- Representative sample of commercial farms
- Loans were categorized by Luke Byers and others.



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## Research questions

1. What farm characteristics are associated with loan and lender concentration?
2. Is financial stress related to a decrease in loan concentration? (In other words, do farms add new loans or lenders after experiencing low income?)

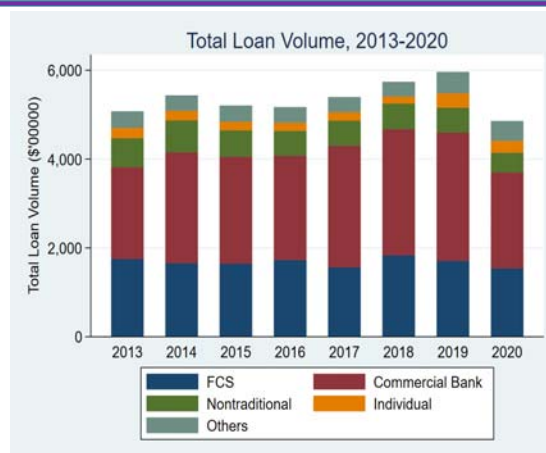
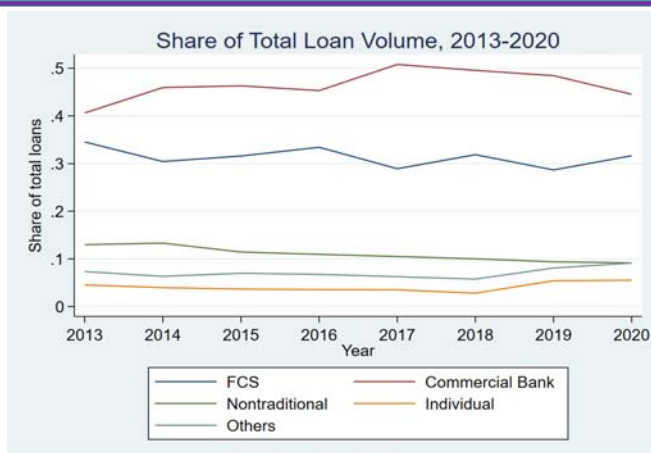
# Recent Trends

Year	Number of Lending Relationships		Share with more than one lender	# of farms
	Average	Total #		
2013	2	2102	67	942
2014	2	2130	69	929
2015	2	1888	68	837
2016	2	1848	68	837
2017	2	1828	68	823
2018	2	1764	65	816
2019	2	1920	70	817
2020	2	1623	69	691

Note: # denotes number. Averages and probabilities are rounded.

Source: KFMA

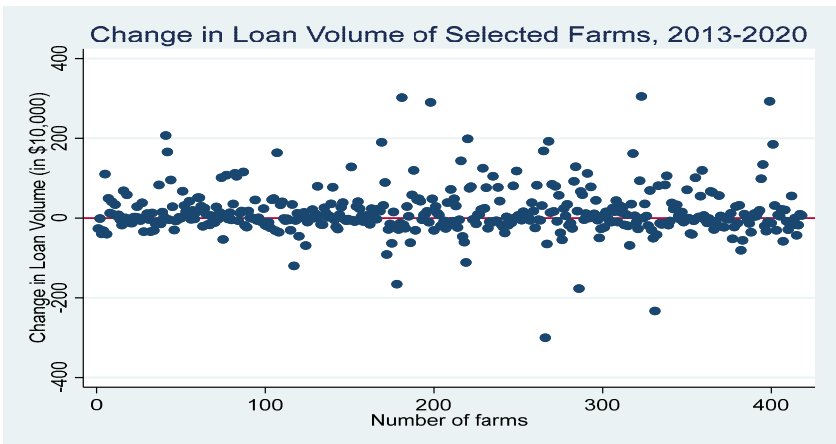
# Recent Trends



# Average loan volume increasing

Year	Number of Farms	Total Loan Volume (\$million)	Average Loan Volume (\$000)
2013	942	508	539
2014	929	543	585
2015	837	521	622
2016	837	517	618
2017	823	540	656
2018	816	574	704
2019	817	596	730
2020	691	486	703

# Loan volume changes



## Recent Trends

- Operators distribute their loans unevenly across lenders.
- To capture the relative loan size distribution, we use Herfindahl–Hirschman Index (HHI)
- The closer the HHI is to 100,
  - the fewer the number of lenders and
  - each lender accounts for a large share of the loan
  - 100 = 1 loan
  - 50 = 2 loans of the same amount
  - 25 = 7 loans of different sizes

## Recent Trends

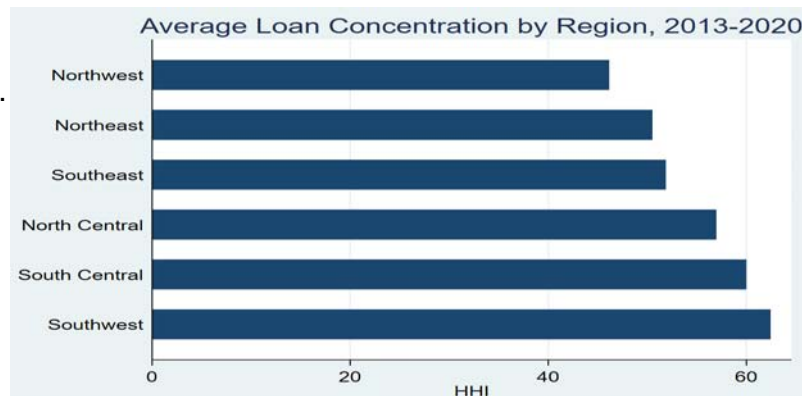
- Loan concentration has declined, consistent with increases in loan numbers.
- Lender concentration trend is not consistent

Year	Concentration (HHI)	
	Loan	Lender
2013	56	75
2014	54	74
2015	54	76
2016	54	76
2017	53	77
2018	53	78
2019	51	74
2020	51	74

Note: The indices are multiplied by 100.

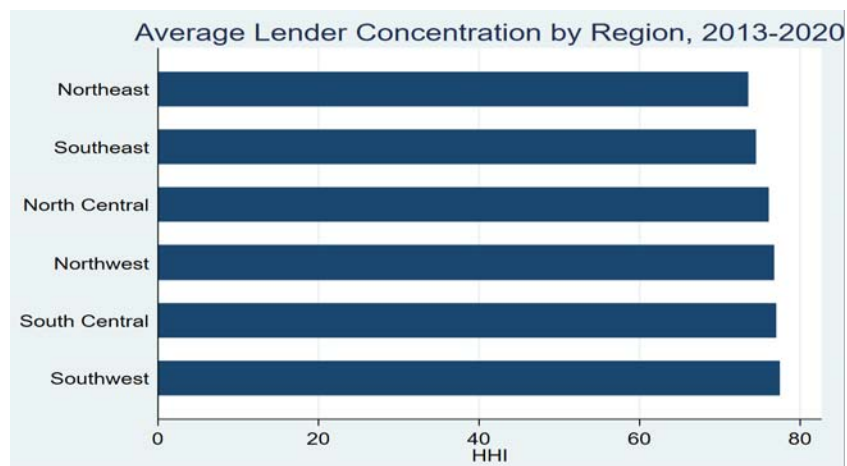
## Recent Trends

- Loans are highly concentrated across regions.
- Largest-Southwest
- Smallest-Northwest.



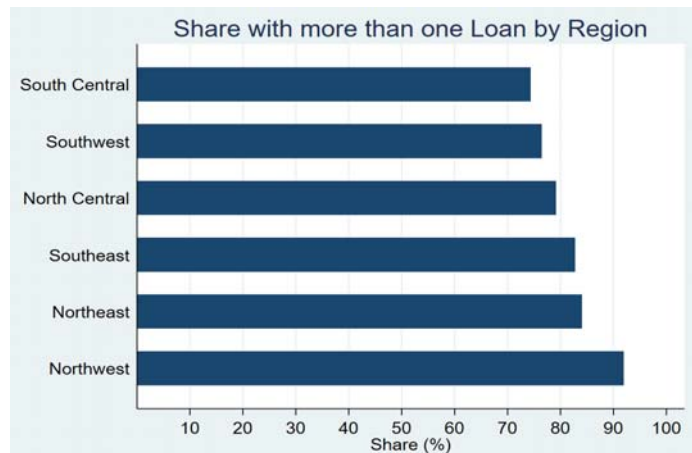
## Recent Trends

- Lender concentration are remarkably similar across regions.
- Largest index-Southwest
- Smallest index-Northeast



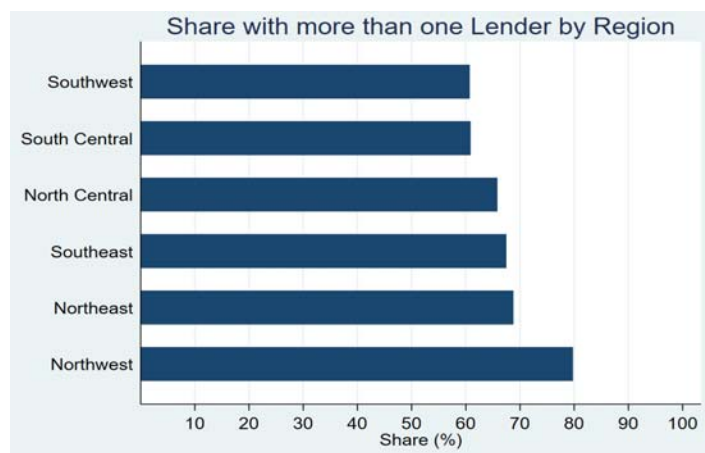
## Recent Trends

- Share varies across regions over the study period.
- Northwest-largest share
- South Central-smallest share



## Recent Trends

- Share varies across regions
- Northwest-largest share
- Southwest-smallest share



## Recent Trends

- Low renters are less likely to have more than one lender
- High renters are more likely to obtain more than one loan.

Year	Share with more than one			
	Lender		Loan	
	Rent0	Rent1	Rent0	Rent1
2013	65	69	77	81
2014	65	72	79	84
2015	64	72	77	84
2016	65	71	80	84
2017	68	68	82	82
2018	63	66	84	83
2019	68	73	85	85
2020	68	71	84	85

Note: Rent0 implies share of rented land less than 73%.  
Cutoff splits the sample into 2 equal parts.

## Recent Trends

- Except in 2017, low renters' lender and loan concentration consistently higher than that of high renters

Year	Concentration			
	Lender		Loan	
	Rent0	Rent1	Rent0	Rent1
2013	77	73	59	52
2014	76	72	58	50
2015	78	74	58	51
2016	78	75	56	52
2017	77	77	54	53
2018	79	77	53	52
2019	76	73	53	50
2020	76	71	53	49

Note: Rent0 implies share of rented land less than 73%.



# Statistical Analyses

What factors are associated with loan concentration (measured by HHI)? (results are similar when using measures of lender concentration)

- Operator's age (+)
- Farm size (-)
- # operators and employees (~-)
- Debt to asset ratio (-)
- Return to asset ratio (-)
- Specialization (-)
- ~~Banks per people~~
- # Agricultural banks (+)
- FCS branch (~+)
- FCS outpost

# Statistical Analyses

What factors are associated with loan concentration (measured by HHI), after controlling for the average farm level loan concentration?

- Extreme weather (~+)
  - Proxy for lower income/financial stress
- Operator's age (+)
- Farm size (-)
- # operators and employees (~-)
- Debt to asset ratio (-)
- Return to asset ratio (-)
- Specialization (-)
- ~~Banks per people~~
- # Agricultural banks (+)
- FCS branch (+)
- ~~FCS outpost~~

# Preliminary findings

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- Multiple borrowing is associated with several factors
  - Size, age and profitability
- Insight: Larger farms or farms that want to grow
  - Find it advantageous to add a new lender
  - No evidence that financial stress is a driver

# Conclusion

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- Measuring debt from individuals and “non-reporting institutions” is a major policy issue
- Competition in agricultural lending continues to increase
  - *Some newer entrants do not have lending as primary business objective*
- Financial stress is at most one part of the story of the growth in agricultural lending options
- KFMA farmers seem to find it advantageous to add loans/lenders to fund new investments
- Open questions
  - Innovation in equity financing?
  - Is agriculture “underbanked”?
- Research
  - Nontraditional data – input finance, real estate lending
  - Financial stress
  - Multistate survey on loyalty to existing lenders, sensitivity to rates and non-price factors

Questions?  
Comments?  
Thank you!

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