

Where Do Small Firms Get Debt Financing?

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September 26, 2025

Outline

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Types of Debt and Lenders

UCC Filings and Small Business Lending

Banking Market Structure

Racial Disparities

Conclusion

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Motivation

- ▶ Small Business Administration (SBA):
 - ▶ 99.9% American business are small
 - ▶ Employ half of the nation's private sector workers
- ▶ Providing small businesses with access to credit enables them to invest and expand
- ▶ Policymakers often focus on enhancing small business access to credit
- ▶ Lack of comprehensive data on small business lending

Current Literature

Paper	Data source	Drawbacks
Davydiuk et al. (2020) Davydiuk et al. (2024)	Business Development Companies	Single lending source
Brown and Earle (2017)	SBA	
Mach et al. (2014) Kim and Stähler (2020)	Fintech or P2P platforms	
Gopal and Schnabl (2022)	Uniform Commercial Code (UCC) filings	Cover loans secured by UCCs only and no amount
Chernenko et al. (2022)	Middle-market firm SEC filings	May not be representative of small business
Small Business Credit Survey (SBCS) Reports	FED Small Business	No actual debt or lender structure

Our Paper: What We Did

- ▶ Detailed claim-level data from bankruptcy filings → Comprehensive
- ▶ All types of debt and lenders
- ▶ Loan amount and contract terms
- ▶ **Debt types:**
 - ▶ Credit cards
 - ▶ Equipment financing
 - ▶ Lines of credit
 - ▶ Mortgages
 - ▶ Receivables financing
 - ▶ Term loans
 - ▶ Other
- ▶ **Lender types:**
 - ▶ Bank
 - ▶ Captive finance
 - ▶ Merchant cash advance
 - ▶ Other nonbank
 - ▶ Individual
 - ▶ SBA

Our Paper: External Validity

- ▶ **Stylized fact:** high failure rate among new businesses:
 - ▶ $\frac{1}{5}$ of new businesses fail within 1 year
 - ▶ $\frac{1}{2}$ fail within 5 years
- ▶ **Exogenous shock:** small business bankruptcies around the COVID pandemic
- ▶ Compare **characteristics** of sample firms with all small businesses in Florida and in the U.S.
- ▶ Discuss how sample selection bias may affect the external validity of different results:
 - ▶ Results on lender specialization, accuracy of UCC filings as a measure of small business lending, racial disparities seem unlikely to be significantly affected

Our Paper: New Findings

1. Debt composition varies with firm size
 - ▶ Smallest firms rely more on credit cards, term loans, receivables financing, and equipment financing
 - ▶ Larger firms rely more on mortgages and lines of credit
2. About half of firms borrow from multiple types of lenders
 - ▶ 29% borrow from both banks and nonbank financial institutions (NBFIs)
 - ▶ 29% borrow only from banks
 - ▶ 21% borrow only from NBFIs
3. UCC filings capture only half of all small business lending
 - ▶ Large variation in coverage across types of debt, lenders, and firms
4. Nonbanks filled in some gap in providing credit access to small firms after the financial crisis
5. Racial disparities in the utilization of different types of debt and lenders

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- ▶ Small business bankruptcy filings in Florida from 2019-2021
 - ▶ Chapter 7 and 11 corporate bankruptcy cases (1,869 cases)
 - ▶ Exclude stockbroker, clearing bank, commodity broker, single asset real estate, and railroad cases
 - ▶ Docket in PACER and has claims register
 - ▶ Exclude financial, real estate, and non-profit firms
 - ▶ Estimated assets \leq \$10 Million
 - ▶ Exclude cases without loan/lease claims or with only government creditors (637 cases)
- ▶ Capital IQ, National Information Center, Dun & Bradstreet
- ▶ Florida corporate records and voter registration

Sample Characteristics I

Panel A: Bankruptcy district ($N = 637$)

	Middle	Northern	Southern
N	343	40	254
%	54	6	40

Panel B: Estimated assets ($N = 637$)

	0–50K	50–100K	100–500K	500K–1M	1–10M
N	267	57	162	55	96
%	42	9	25	9	15

Panel C: Firm age ($N = 637$)

Mean	SD	Min	25th	50th	75th	Max
11.39	10.14	0.23	4.30	8.62	15.26	89.00

Panel D: Total debt in \$ thousands ($N = 637$)

Mean	SD	Min	25th	50th	75th	Max
1,193	4,130	0	76	292	904	85,070

Sample Characteristics II

Panel E: 2-digit NAICS industry ($N = 588$)

Industry	N	%
Agriculture, forestry, fishing and hunting	4	1
Mining, quarrying, and oil and gas extraction	2	0
Utilities	3	1
Construction	94	16
Manufacturing	41	7
Wholesale trade	72	12
Retail trade	58	10
Transportation and warehousing	37	6
Information	10	2
Professional, scientific and technical services	46	8
Management of companies and enterprises	2	0
Administrative and support and waste management and remediation services	23	4
Educational services	5	1
Health care and social assistance	58	10
Arts, entertainment, and recreation	29	5
Accommodation and food services	73	12
Other services	31	5

Sample Characteristics III

Panel F: Number of creditors ($N = 637$)

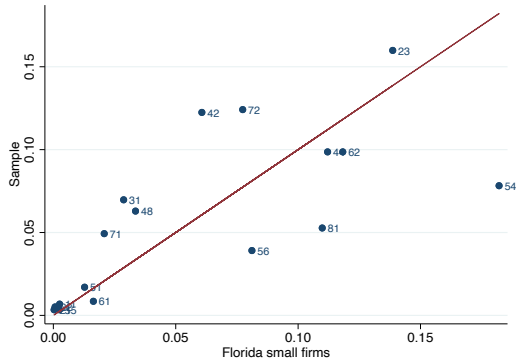
	1	2	3	4	5	6	7+
<i>N</i>	276	153	82	58	28	19	21
%	43	24	13	9	4	3	3

Panel G: Firm owner race ($N = 597$)

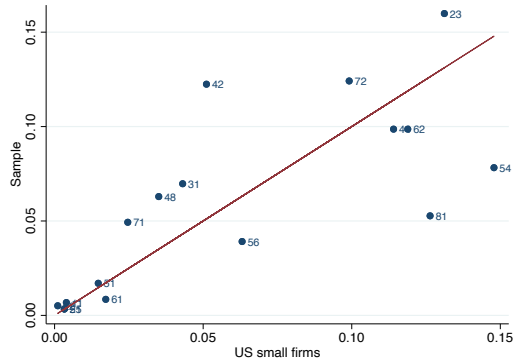
	Asian	Black	Hispanic	White	Other
<i>N</i>	32	37	126	370	14
%	6	6	22	64	2

How do Sample Firms Compare to All Small Businesses?

Industry



(a) Florida

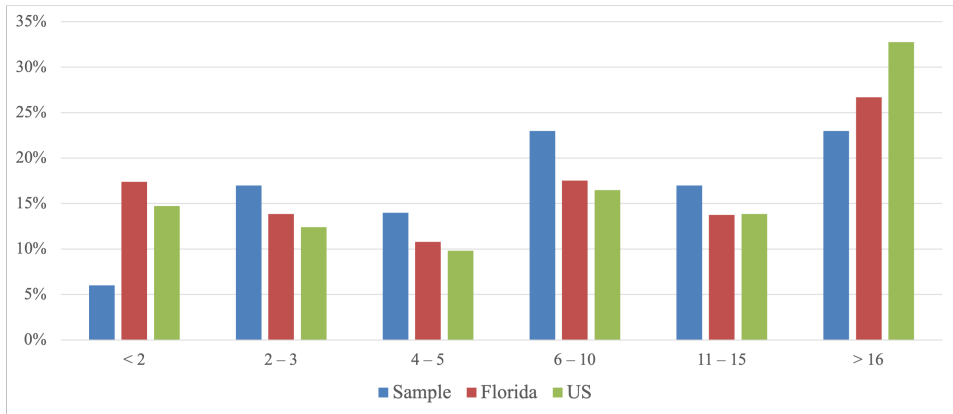


(b) US

Data source: Census Bureau 2019 Statistics of US Businesses Annual Data

How do Sample Firms Compare to All Small Businesses?

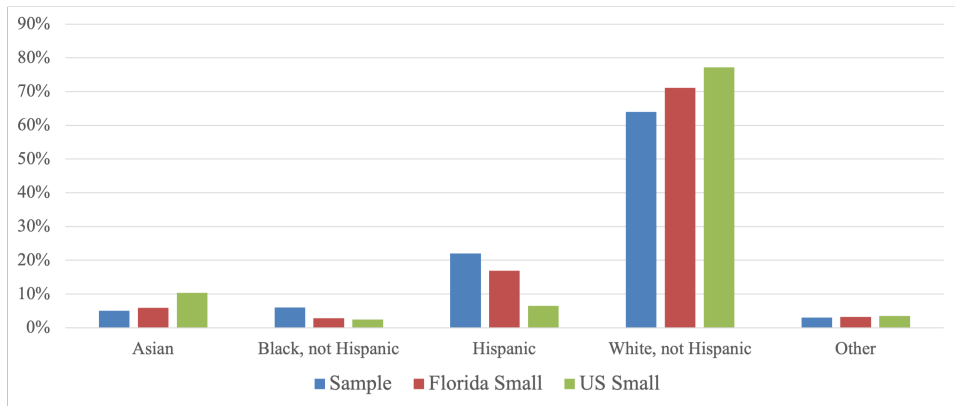
Firm Age



Data source: Census Bureau 2019 Annual Business Survey (ABS)

How do Sample Firms Compare to All Small Businesses?

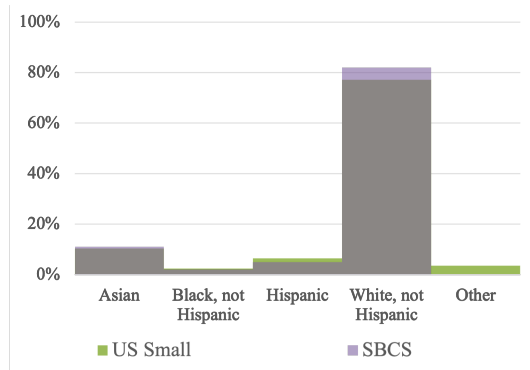
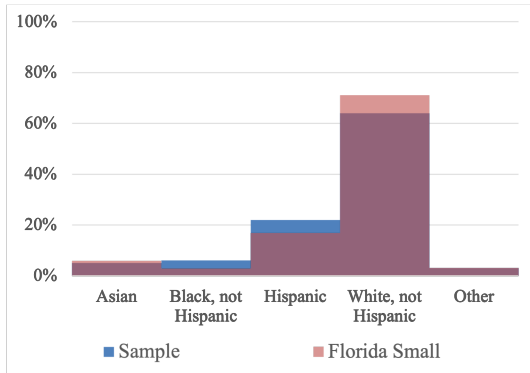
Owner Race



Data source: Census Bureau 2019 ABS

How do Sample Firms Compare to All Small Businesses?

Owner Race



Data source: Census Bureau 2019 ABS and Fed 2019 SBCS

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Debt Composition

Firm Size

	Estimated asset size					Total
	0–50K	50–100K	100–500K	500K–1M	1–10M	
	(1)	(2)	(3)	(4)	(5)	
<i>N</i>	267	57	162	55	96	637
Debt type						
Credit card	19.0	16.1	12.4	4.7	8.7	14.3
Equipment financing	20.3	26.1	15.6	24.3	14.6	19.1
Line of credit	5.2	9.4	7.4	3.4	12.1	7.0
Mortgage	3.7	6.1	13.5	21.8	34.2	12.5
Receivables financing	9.7	3.8	9.0	14.3	4.9	8.6
Term loan	27.0	27.5	27.5	9.9	11.5	23.4
Other	15.2	11.0	14.6	21.6	13.9	15.0
Debt HHI	7,781.0	7,717.0	7,281.7	6,764.7	7,772.0	7,559.2

Debt Composition

Conditional Distributions

	P(Share > 0)	Conditional on utilizing				
		Mean	SD	25th	50th	75th
Credit card	30.8	46.4	41.4	7.1	28.0	100.0
Equipment financing	31.9	60.0	36.5	22.0	64.0	100.0
Line of credit	15.7	44.7	32.7	14.6	38.7	69.0
Mortgage	15.2	82.4	26.8	75.6	96.4	100.0
Receivables financing	17.7	48.7	35.1	17.1	38.6	83.5
Term loan	39.2	59.6	36.0	24.1	65.4	100.0
Other	25.7	58.4	39.8	16.9	69.5	100.0

Debt Composition

Conditional on Utilizing a Given Type

	<i>N</i>	CC	EF	LC	MTG	RF	TL	Other
Credit card (CC)	196	46.4	10.5	7.6	5.6	6.7	17.4	5.8
Equipment financing (EF)	203	5.0	60.0	5.1	4.6	6.6	12.3	6.3
Mortgage (MTG)	97	2.0	4.3	1.6	82.4	1.3	4.0	4.5
Line of credit (LC)	100	7.2	11.9	44.7	2.9	8.5	19.5	5.4
Receivables financing (RF)	113	4.3	13.3	6.3	3.6	48.7	17.4	6.5
Term loan (TL)	250	5.4	10.5	6.0	6.0	6.3	59.6	6.3
Other	164	4.6	8.9	6.5	7.6	2.8	11.3	58.4

Who Lends to Small Firms?

Lender types	<i>N</i>	%
Bank only	186	29.2
Nonbank only	133	20.9
Individual only	25	3.9
SBA only	14	2.2
Bank + Nonbank	184	28.9
Bank + Individual or SBA	49	7.7
Nonbank + Individual or SBA	45	7.1
Individual + SBA	1	0.2
Total	637	100.0

Lender Composition

	P(Share > 0)	Conditional on utilizing				
		Mean	SD	25th	50th	75th
Bank	65.8	73.9	32.9	49.2	92.4	100.0
Nonbank	56.8	68.1	34.3	34.1	81.4	100.0
Equipment finance	17.4	48.5	35.9	13.2	36.7	89.2
MCA	10.4	46.7	35.2	14.7	35.0	82.2
Other nonbank	43.3	58.7	36.4	22.0	64.0	100.0
Individual	12.9	60.8	35.5	23.8	61.1	100.0
SBA	10.2	47.4	34.7	20.7	36.4	81.4

Lender Specialization

	Bank	Nonbank			Individual	SBA
		Captive finance	MCA	Other		
Panel A: Row %						
Credit card	100	0	0	0	0	0
Equipment financing	53	32	0	15	0	0
Line of credit	81	7	0	12	0	0
Mortgage	49	0	0	36	11	4
Receivables financing	1	1	55	44	1	0
Term loan	36	10	0	36	0	17
Other	29	0	0	25	45	0
Panel B: Column %						
Credit card	32	0	0	0	0	0
Equipment financing	30	81	0	21	1	1
Line of credit	10	4	0	3	0	0
Mortgage	7	0	0	13	12	9
Receivables financing	0	0	99	18	1	0
Term loan	13	15	0	30	0	89
Other	7	0	1	15	85	1

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UCC Filings as a Measure of Small Business Lending I

Panel A: Firm-level ($N = 637$)

	Mean	SD	Median	Min	Max
Share-weighted	0.50	0.44	0.58	0	1
Equal-weighted	0.45	0.41	0.46	0	1

Panel B: Loan-Level by Debt Type ($N = 1,985$)

	No UCC		UCC	
	N	%	N	%
Credit card	318	98.1	6	1.9
Equipment financing	333	56.4	257	43.6
Line of credit	50	40.0	75	60.0
Mortgage	98	63.6	56	36.4
Receivables financing	12	6.7	167	93.3
Term loan	93	26.2	262	73.8
Other	199	77.1	59	22.9

UCC Filings as a Measure of Small Business Lending II

Panel C: Loan-Level by Lender Type ($N = 1,985$)

	No UCC		UCC	
	N	%	N	%
Bank	663	65.2	354	34.8
Equipment finance	126	54.3	106	45.7
MCA	2	2.0	97	98.0
Other nonbank	191	44.3	240	55.7
Individual	113	83.1	23	16.9
SBA	8	11.4	62	88.6

- ▶ Caution: UCC filings only cover about half of all small business lending
- ▶ UCC cannot capture credit card debts, most of mortgages, equipment financing, and other debts
- ▶ Cross lender variation is driven by lenders specializing in different types of debt

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Banking Market Structure and Lender Types

		Nonbank				
	Bank	All	CF	MCA	Individual	SBA
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(Population)	-0.96 (1.96)	1.40 (1.94)	-1.13 (1.20)	1.72*** (0.49)	1.04 (1.28)	-1.48 (1.42)
Ln(Per capita income)	-17.36** (6.67)	0.08 (5.02)	-0.42 (3.86)	3.11 (2.52)	11.61** (4.51)	5.67 (6.29)
Deposit HHI	-100.52*** (18.74)	106.23*** (14.39)	21.81** (9.44)	35.16*** (7.39)	2.14 (13.48)	-7.85 (10.39)
Ln(Average bank size)	-5.14** (2.42)	9.32*** (2.58)	0.54 (1.61)	1.44 (0.98)	-4.03* (2.09)	-0.16 (1.31)
Adjusted R^2	0.036	0.031	0.007	0.060	0.039	-0.008
μ_y	48.10	38.58	8.58	5.06	8.08	5.24
Controls	✓	✓	✓	✓	✓	✓

Banking Market Structure and Debt Types

	CC	EF	LOC	MTG	RF	TL
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(Population)	0.81 (1.26)	-2.16 (1.47)	1.28 (0.78)	-2.03 (1.54)	2.69*** (0.74)	-2.61 (2.10)
Ln(Per capita income)	1.78 (4.42)	-17.67** (7.20)	-0.42 (3.28)	-10.43** (4.74)	5.91 (3.69)	8.53 (8.64)
Deposit HHI	-22.96* (12.85)	-7.88 (13.43)	1.06 (9.31)	-2.53 (21.22)	34.70*** (8.75)	-12.25 (17.64)
Ln(Average bank size)	-0.39 (1.62)	1.95 (1.79)	-1.35 (1.56)	0.18 (2.55)	0.75 (1.23)	-1.47 (2.50)
Adjusted R^2	0.047	0.090	0.008	0.148	0.037	0.044
μ_y	14.05	18.58	7.24	12.48	8.78	23.40
Controls	✓	✓	✓	✓	✓	✓

Banking Market Structure and Choice of Debt Types

Bank Lender

	CC (1)	EF (2)	LOC (3)	MTG (4)	RF (5)	TL (6)	Other (7)
Ln(Population)	0.05 (2.05)	0.27 (2.51)	2.64** (1.20)	-1.09 (1.06)	-0.29 (0.28)	-2.69 (1.60)	1.11 (1.25)
Ln(Per capita income)	12.90** (5.93)	8.13 (7.28)	-6.64 (5.76)	-11.58*** (4.16)	-0.61 (0.64)	-2.53 (4.49)	0.33 (2.96)
Deposit HHI	5.95 (19.31)	-0.22 (27.67)	4.85 (17.55)	-40.99*** (13.73)	-0.97 (1.05)	7.69 (17.53)	23.69*** (8.27)
Ln(Average bank size)	0.96 (3.25)	-0.79 (3.28)	-0.84 (2.50)	-5.38*** (1.26)	0.16 (0.16)	3.34 (2.17)	2.55* (1.30)
Adjusted R^2	0.097	0.204	0.003	0.115	-0.012	0.046	0.010
μ_y	32.60	29.66	10.27	7.55	0.10	12.37	7.44
Controls	✓	✓	✓	✓	✓	✓	✓

Banking Market Structure and Choice of Debt Types

Nonbank Lender

	CC (1)	EF (2)	LOC (3)	MTG (4)	RF (5)	TL (6)	Other (7)
Ln(Population)		-1.72 (2.97)	0.40 (0.58)	0.81 (1.59)	-0.06 (2.31)	-1.03 (2.49)	1.59 (2.36)
Ln(Per capita income)		-43.25*** (9.19)	3.11 (1.89)	-4.58 (4.78)	18.11* (9.96)	23.52** (10.39)	3.08 (4.92)
Deposit HHI		-68.53** (29.58)	0.31 (5.01)	64.05** (24.69)	-8.40 (24.38)	4.48 (19.76)	8.10 (15.81)
Ln(Average bank size)		-2.98 (3.81)	0.32 (0.78)	7.93*** (2.64)	-3.88 (2.36)	-3.85** (1.69)	2.47 (2.04)
Adjusted R^2		0.139	-0.006	0.134	0.020	0.037	0.033
μ_y		37.36	3.06	6.67	23.06	21.25	8.61
Controls		✓	✓	✓	✓	✓	✓

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Racial Disparities in Debt Types

	CC (1)	EF (2)	LOC (3)	MTG (4)	RF (5)	TL (6)
Asian	0.411 (6.352)	0.618 (6.404)	4.151 (5.985)	5.887 (6.422)	0.104 (4.472)	-14.264** (6.495)
Black	-7.350* (3.935)	-5.556 (5.339)	3.355 (4.910)	13.746** (5.872)	-5.639*** (1.609)	2.480 (7.424)
Hispanic	1.883 (3.747)	-3.611 (3.710)	-1.963 (2.230)	5.310* (3.065)	3.751 (3.192)	-5.601 (4.015)
Adjusted R^2	0.043	0.087	0.012	0.145	0.015	0.042
μ_y	14.623	18.591	7.858	11.644	8.503	23.601
Controls	✓	✓	✓	✓	✓	✓

Racial Disparities in Lender Types

	All (1)	Equipment Financing (2)	Mortgage (3)	Term Loan (4)
Asian	-12.892** (5.198)	-33.776** (13.191)	-25.936 (19.717)	-38.753** (15.332)
Black	9.076** (4.390)	22.728** (10.333)	-44.099** (20.964)	7.797 (10.966)
Hispanic	2.634 (2.850)	3.470 (5.666)	-23.196 (14.067)	12.417 (9.180)
<i>N</i>	1,581	524	104	257
Adjusted R^2	0.325	0.102	0.202	0.094
μ_y	57.685	51.718	60.577	43.191
Controls	✓	✓	✓	✓

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Conclusion

- ▶ A complete picture of small business debt structure
→ Important references for both researchers and policymakers
- ▶ The choices of debt types vary with firm size
→ Firm heterogeneity should be considered when making credit access policies targeting on small firms
- ▶ Nonbank lenders play a significant role in providing credit to small firms
→ Challenges the tradition in promoting credit access from banks to small businesses
- ▶ The structure of local banking markets is associated with large differences in the types of lenders and debt utilized by small firms
- ▶ Existence of racial disparities for minority-owned firms in utilizing different types of debt
- ▶ Call for caution in using UCC filings as a proxy for small business lending

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