The Big Tech Lending Model

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Big Tech Lending

- The new global trend of big techs offering financial services to improve financial inclusion
  - The use of unique data and integration of operations with digital platforms, such as social network and mobile payment, makes big tech lending even more powerful than other types of fintech lending, such as P2P lending and online mortgage lending
  - Cornelli et al. (2020): big tech credit volume may have been as large as USD 572 billion in 2019, at least twice that of other types of fintech credit

Table 1: Summary of Selected Big Tech Lending

Country	Big Tech Firm	Big Tech Category	Digital Payment	SME Loans	Consumer Loans/ Credit Card	Targeting Platform User	Collaborate with Banks	(Example) SME Lending Program	Max SME Loan Maturity	Max SME Loan Limit
China	Alibaba	Online Retailer	♦	♦	♦	♦	♦	Wangshangdai	24 months	$285 k
China	Tencent	Social Media	♦	♦	♦	♦	♦	Weihudai	24 months	$29 k
China	JD	Online Retailer	♦	♦	♦	♦	♦	Jingxiaodai	12 months	$285 k
China	Baidu	Search Engine	♦	♦	♦		♦	Duxiaoman	12 months	$29 k
China	Suning	Retailer	♦	♦	♦	♦	♦	Weishangdai	12 months	$285 k
US	Amazon	Online Retailer	♦	♦	♦	♦	♦	Amazon Lending	12 months	$750 k
US	PayPal	Payment System	♦	♦	♦	♦	♦	PayPal Working Capital	12 months	$125 k
US	eBay	Online Retailer	♦	♦	♦	♦		Working Capital Loan	12 months	$150 k
US	Square Capital	Software/Hardware	♦	♦		♦	♦	Small Business Loan	18 months	$250 k
US	Apple	Software/Hardware	♦		♦	♦	♦			
US	Google	Search Engine	♦		♦		♦			
Latin America	Mercado Libre	Online Retailer	♦	♦	♦	♦		Fix Installment Loan	24 months	$196 k
Korea	Samsung	Software/Hardware	♦		♦	♦	♦			
Korea	Kakao	Social Media	♦		♦					
Korea	KT	Telecommunication	♦		♦					
Japan	Rakuten	Online Retailer	♦	♦	♦	♦		Super Business Loan Express	36 months	$105 k
Japan	Line	Social Media	♦		♦	♦	♦			
Southeast Asia	Grab	Delivery/Ride Hailing	♦	♦	♦	♦		Grab Business Loan	9 months	$100 k
Southeast Asia	PT Gojek	Delivery/Ride Hailing	♦		♦	♦				
India	Ola Cabs	Ride Sharing	♦		♦					
East Africa/Egypt/India	Vodafone M-Pesa	Telecommunication	♦	♦	♦	♦	♦	M-Shwari/KCB M-PESA	6 months	$8 k
France/Africa	Orange SA	Telecommunication	♦		♦					

Questions

- Big techs are substantially different from other fintech lenders
  - Extensive customer bases, powerful brands, superior data about borrowers, capacities to monitor and even control customer activities inside the ecosystems

- Limited researches on big tech lending
  - Big tech lending facilitates financial inclusion, supports SMEs, and stimulates entrepreneurship
    - Luohan Academy Report (2019), Frost et al. (2019), Ghosh et al. (2021), Ouyang (2021)
    - Hau et al. (2019, 2021), Chen et al. (2021)
  - Data from big techs are useful in risk assessments
    - Huang et al. (2020)
    - No comparison with traditional bank lending that relies on both hard and soft information
  - Big tech credit uncorrelated with local business conditions and house prices
    - Gambacorta et al. (2020)

- Key questions remain:
  - Is big tech lending riskier than bank lending? Is big tech lending robust to severe economic shocks that create structural breaks to the risk models used by big tech lenders?
  - How do big tech lenders manage the risk?
  - What do these borrowers use big tech loans for?

Background - Lending by MyBank

- Ant Group owns Alipay, the largest mobile payment system that serves over 1 billion users
  - 80 million merchants and 12-month payment volume over 118 trillion by June 2020
- Ant Group also owns MyBank (a big tech lender), which had lent to over 35 million SMEs, which lack credible financial statements or records for traditional lenders
  - Most of MyBank's borrowers are merchants who use Alipay or online vendors on Alibaba's e-commerce platforms
  - Unique and extensive data about each borrower's business: payment flow, cashflow, customer ratings, information about firms along its business chain, digital footprint
- Alibaba's ecosystem helps MyBank to monitor loan use and repayment
- Convenience in borrowing and repayment
  - 310 model: 3 minutes to apply, 1 second to approve, and zero human intervention
  - Lending seamlessly integrated to Alipay and Alibaba's ecommerce platforms

Background – Syndicated Loans

- MyBank is more constrained in funding and faces higher funding cost than traditional banks, which can collect deposits
- MyBank began to collaborate with traditional banks to provide syndicated loans since June 2018.
  - It collaborated with more than 700 financial institutions by Dec 2020
- Our data come from one of its co-lenders, Bank X
  - MyBank is responsible for acquiring borrowers, assessing risk, processing loan applications, and determining interest rates and credit limits
  - Bank X can reject a loan application, but cannot determine the interest rate or credit limit
  - MyBank is also responsible for managing the loans after origination

Background – Bank X

- A large commercial bank with national coverage across China
  - Specialty in lending to small businesses
  - Has an extensive loan syndication program with Ant Group

- Bank X has two lending programs of its own:
  - Regular loans
    - Applications filed in a bank branch and assessed by loan officers in person
    - The process may take one week
    - Heavy reliance on collateral
  - Online loans
    - Fintech loans by Bank X to simplify the lending process
    - A borrower can apply online, and the bank assess the application based on a variety of traditional and unconventional information through machine learning models
    - The process may still take half a day
    - Higher requirements on credit history

Overview

- We compare big tech business loans to SMEs made by MyBank with regular and online business loans made by Bank X
- The big tech loans are not more risky, despite their higher interest rates and the borrowers' lower credit quality
- The big tech lending model:
  - The big tech loans are used to meet short-term liquidity needs, as borrowers repay quickly, far before the maturity, and borrow frequently
  - Standard mechanisms: screening and monitoring
  - Unconventional mechanisms: convenience and high interest rates
    - Attract borrowers with short-term liquidity needs

The Data

- Proprietary loan data from Bank X
  - Loans originated in Aug 2019 – Dec 2020
- The main sample： 10% random sample of borrowers with business loans in three groups:
  - 843,678 big tech loans (syndicated loans by MyBank and Bank X)
  - 34,933 regular loans (excluding policy loans) by Bank X
  - 113,233 online loans by Bank X
- The overlapped sample:
  - The full set of big tech borrowers who have taken at least one online or regular loan from Bank X

Borrower Characteristics (Main Sample)

Panel A: Borrower Demographics

	Age	Male	Undergrad	High School	Rural	County	City
Big Tech Borrowers	32.8	66%	38%	30%	31%	29%	40%
Online Borrowers	44.3	79%	18%	34%	15%	62%	23%
Regular Borrowers	43.0	83%	12%	26%	20%	58%	22%

Panel B: First Loans

	First Loan	First Business Loan	First Uncollateralized Business Loan
Big Tech Borrowers	27%	81%	91%
Online Borrowers	4%	5%	6%
Regular Borrowers	30%	43%	58%

- Big tech borrowers tend to be younger, more likely female, better educated, more likely rural
- Big tech loans are more likely to be the first business loans, especially the first non-collateralized business loans, of their borrowers
  - Despite the selection bias that credit reports are only available for a subset of the borrowers

Borrower Characteristics (Main Sample)

Panel C: Other Loans by Each Borrower

	Collateralized Business Loans	Uncollateralized Business Loans	Collateralized Consumption Loans	Uncollateralized Consumption Loans	Mortgage Loans	Others	All
Big Tech Borrowers	117,172	36,099	40,467	97,946	13,661	28,807	334,152
Online Borrowers	741,676	180,595	160,123	49,872	96,760	96,760	1,325,786
Regular Borrowers	429,065	159,087	73,096	30,252	65,385	65,385	822,270

- Among borrowers who provided credit reports, big tech borrowers have much smaller amount of loans from other institutions
- Overall, big tech loans make credit more accessible to borrowers unserved or underserved by traditional banks

Loan Terms (Main Sample)

Panel A: Overall Statistics

	Number of Loans	Interest Rate	Credit Limit (RMB)	Loan Size (RMB)	Maturity (Months)	Repay Once
Collateralized						
Big Tech	12,099	9.0%	840,509	135,741	11.2	63%
Online	37,917	5.1%	1,186,890	296,619	13.4	93%
Regular	152,991	5.5%	1,277,106	352,571	14.9	90%
Uncollateralized						
Big Tech	843,678	14.6%	71,963	8,367	10.0	15%
Online	113,233	8.6%	180,858	99,487	9.9	90%
Regular	34,933	8.5%	183,644	120,284	13.0	71%

- Bank X's regular loans are mostly collateralized, while big tech and Bank X's online loans are mostly uncollateralized
- Big tech loans tend to have lower credit limit and much higher interest rate

Repayment Risk

- **Hypothesis:** big tech loans are riskier than conventional bank loans.
  - P2P lending tends to be bottom fishing, e.g., Tang (2019) and De Roure et al. (2021)
  - P2P lending might exacerbate borrower risk, e.g., Di Maggio and Yao (2021) and Wang and Overby (2021)
- We measure the repayment risk by a loan being overdue for at least 30 days

Repayment Risk

Panel A: Summary Statistics of Payment Overdue

	Number of Loans			Ever Overdue >= 30days		
	w/o payback record	w payback record	Total	w/o payback record	w payback record	Total
Big Tech	215,135	239,272	454,407	4.2%	1.2%	2.6%
Online	4,048	64,769	68,817	1.1%	1.1%	1.1%
Regular	6,706	12,629	19,335	1.5%	1.7%	1.6%

- The risk of payment overdue is concentrated among borrowers without prior payback history
- For borrowers with payback history, there is no difference in overdue risk across the three types of loans

Repayment Risk

- After controlling for paying off an existing loan, there is no difference in the overdue risk
  - Unlikely the borrowers have used big tech loans to borrow beyond their means

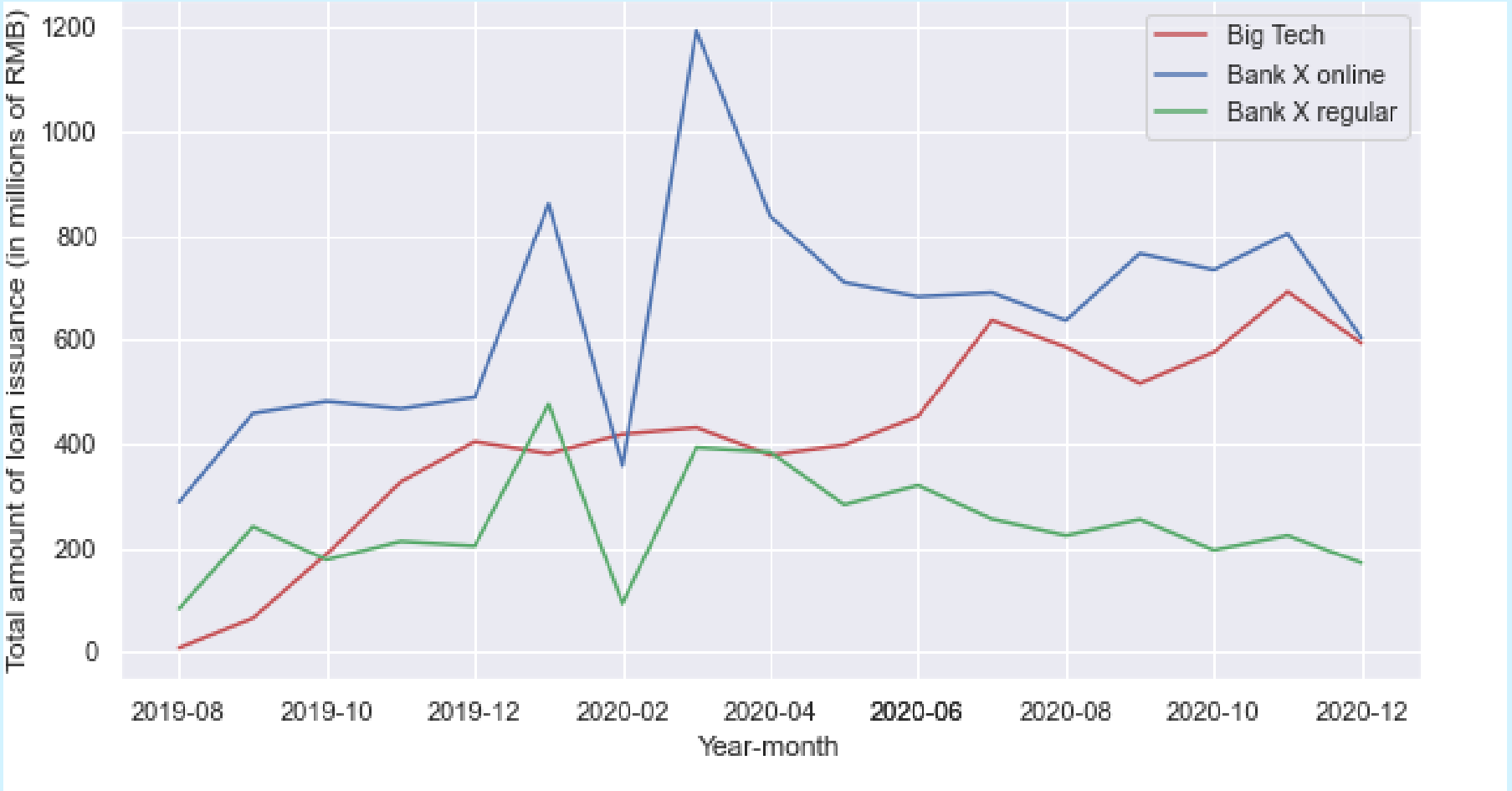
Panel B: Regression Analysis

	Ever Overdue >=30 days *100			
Big Tech	1.33***	0.56**	-0.60**	-0.84***
	(0.22)	(0.24)	(0.26)	(0.25)
Online	-0.27*	-0.01	0.65***	0.46*
	(0.16)	(0.23)	(0.25)	(0.25)
Loan Term: 6 months		-1.75***	-1.72***	-1.78***
		(0.48)	(0.47)	(0.47)
Loan Term: 12 months		0.22	0.26	0.17
		(0.53)	(0.53)	(0.54)
Repay Once		-2.00***	-1.63***	-1.62***
		(0.22)	(0.16)	(0.15)
Ever Clear			-2.77***	-2.77***
			(0.33)	(0.33)
Exist Loan			1.20***	1.19***
			(0.18)	(0.18)
Ever Overdue			8.34	9.39
			(6.93)	(6.92)
Has Large Deposit			-0.95***	-0.93***
			(0.07)	(0.08)
Log(age)			-0.30**	-0.39***
			(0.13)	(0.14)
Male			0.01	0.01
			(0.08)	(0.08)
County			-0.55***	-0.43***
			(0.06)	(0.07)
Rural			-0.54***	-0.43***
			(0.09)	(0.09)
Origination Month FEs	Yes	Yes	Yes	No
Industry* Origination Month FEs	No	No	No	Yes
City* Origination Month FEs	No	No	No	Yes
Cluster Variable	Origination Month	Origination Month	Origination Month	Origination Month
Adjusted R-squared	0.00	0.01	0.02	0.03
Observations	542,559	542,559	542,559	542,559

COVID-19

- The COVID-19 Pandemic provides an exogenous shock to examine whether big tech lending is robust to large distress
    - Ben-David et al. (2021) and Bao and Huang (2021): p-to-p lending in US and China during the COVID-19 crisis was not as robust as bank lending

Credit Supply Around COVID-19



Loan Performance After COVID-19

- There is no evidence of overdue risk rising for big tech loans originated after the COVID-19 shock
  - Different from fintech lending in China and the US

	Ever Overdue >= 30 days*100			
Big Tech	2.01***	-0.85***	-0.88***	-2.21***
	(0.01)	(0.17)	(0.18)	(0.30)
Big Tech × Post COVID-19 Shock	-0.53***	-0.79**	-1.20***	-1.10***
	(0.18)	(0.35)	(0.26)	(0.17)
Online	-0.52***	0.92***	1.00***	0.91***
	(0.00)	(0.20)	(0.21)	(0.20)
Online × Post COVID-19 Shock	0.03	-0.13	-0.61*	-0.51*
	(0.24)	(0.42)	(0.35)	(0.30)
Loan Term: 6 months		-1.53***	-1.54***	-1.38***
		(0.44)	(0.48)	(0.52)
Loan Term: 12 months		0.45	0.41	0.62
		(0.59)	(0.61)	(0.66)
Repay Once		-2.20***	-2.16***	-1.80***
		(0.13)	(0.13)	(0.10)
Interest Rate				6.79***
				(1.27)
Log(Loan Size)				-0.40***
				(0.08)
Borrower Variables	No	Yes	Yes	Yes
Origination Month	Yes	Yes	No	No
Industry × Origination Month	No	No	Yes	Yes
City × Origination Month	No	No	Yes	Yes
Cluster Variable	Origination Month	Origination Month	Origination Month	Origination Month
Adjusted *R*-squared	0.00	0.02	0.03	0.03
Observations	191,616	191,616	191,616	191,616

Mechanisms

- How does the big tech lender manage to make loans, without incurring excessive risks, to a pool of borrowers that traditional banks are unwilling to cover?
- A set of mechanisms
  - Information advantage to screen potential borrowers in its ecosystem
  - Monitoring through its ecosystem
  - Convenience
  - High interest rates

Adverse Selection

- In each of the lending programs, the lender commonly approves the borrower of a credit line with a given interest rate.
  - The borrower may have better information than the lender about its own financial conditions. If so, the borrower's choices of the timing and the quantity of using the credit line may reflect their private information.

- **Hypothesis**: big tech loans face more severe adverse selection than conventional bank loans.

  - Chava et al. (2021) show that fintech lenders in US marketplace lending face more severe adverse selection than traditional banks

- The correlation test of Chiappori and Salanié (2000)
  - Are those who have chosen to use up their credit limits more likely to default later?

Adverse Selection

	BigTech loan		Bank X FinTech loan		Bank X Regular loan	
	Ever overdue >=30 days	Use up credit limit	Ever overdue >=30 days	Use up credit limit	Ever overdue >=30 days	Use up credit limit
Control Variables (skipped)						
Origination Month FEs	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes
Province FEs	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.10	0.33	-7.93	0.10	0.04	0.07
Observations	447955	447955	61229	61229	17968	17968
Correlation between the residuals of the two equations	-0.004		0.002		0.04	
Chi-squared test of zero correlation	10.382		0.206		27.375	
P Value of test statistics	0.001		0.650		0.000	

- Big Tech loans show advantageous selection, rather than adverse selection
  - Possibly reflecting both screening and monitoring

Early Repayment

- If a borrower takes a loan to finance its long-term business expansion, it is unlikely to repay the loan before the short maturity of 6 or 12 months.

- **Hypothesis:** there is no difference in the repayment speed of the big tech loans and the conventional loans.

Early Repayment

Panel A: Distribution of the Ratio of Repayment Time to Loan Maturity

	N	Mean	Std.	Min	5%	10%	25%	50%	75%	90%	95%	Max
Big Tech	515,711	0.46	0.44	0.00	0.00	0.01	0.04	0.28	1.00	1.00	1.00	11.13
Online	74,921	0.74	0.37	0.00	0.03	0.10	0.48	0.96	1.00	1.00	1.00	18.48
Regular	21,253	0.77	0.32	0.00	0.06	0.18	0.60	0.93	1.00	1.00	1.00	2.54

- Half of the big tech loans are paid off at 28% of the scheduled maturity
  - i.e., 6 weeks for a 6-month loan
- A quarter of the big tech loans are paid off at 4% of the maturity
  - i.e., 1 week for a 6-month loan

Early Repayment

- Big tech borrowers are more likely to repay before maturity
  - More likely to meet short-term liquidity needs, rather than long-term financing
- Fast repayment reduces loan risk

Panel B: Regression Analysis of Early Repayment

	Repayment Time to Maturity	
Big Tech	-0.40***	-0.46***
	(0.01)	(0.01)
Online	-0.01	0.06***
	(0.01)	(0.01)
Interest Rate	-0.01	-0.03
	(0.06)	(0.04)
Log(Credit Limit)	-0.00	-0.00
	(0.00)	(0.00)
Loan Term: 6 month	0.04***	0.03***
	(0.01)	(0.01)
Loan Term: 12 month	0.00	-0.02*
	(0.01)	(0.01)
Loan Term: greater than 12 month	-0.12***	-0.06
	(0.04)	(0.04)
Repay Once	-0.13***	-0.09***
	(0.01)	(0.00)
Log(Age)		0.06***
		(0.01)
Male		-0.01***
		(0.00)
County		-0.01***
		(0.00)
Rural		-0.03***
		(0.00)
Ever_Clear_BigTech		-0.35***
		(0.01)
Exist_Clear_BigTech		0.11***
		(0.01)
Ever_OVD_BigTech		0.25***
		(0.04)
Has Large Deposit		-0.05***
		(0.00)
Industry*Origination Month	No	Yes
City* Origination Month	No	Yes
Cluster Variable	Origination Month	Origination Month
Adjusted R-squared	0.07	0.23
Observations	611,885	611,885

Convenience

- Given the fast repayment, the net interest expense is modest despite their high interest rates

Panel A: Interest Expense Per Loan

	Count	Mean	Std.	Min	5%	10%	25%	50%	75%	90%	95%	Max
Big Tech	515711	372	1001	0	0	1	7	61	320	969	1669	68772
Online	74921	4460	6075	0	6	96	454	2178	6618	13200	18740	60566
Regular	21253	6563	10319	0	16	321	1203	3699	7737	15000	23869	339549

- Technology makes it convenient for borrowers to quickly borrow and repay

Panel B: Number of Loans Per Borrower

	No. Borrowers	Mean	Std.	Min	5%	10%	25%	50%	75%	90%	95%	Max
Big Tech	140019	6	9.5	1	1	1	1	3	7	13	20	518
Online	49795	2.3	3.2	1	1	1	1	1	2	4	7	100
Regular	22115	1.6	1.8	1	1	1	1	1	1	3	4	61

Overlapped Borrowers

- A small set of big tech borrowers also have access to Bank X's regular or online loans
- **Hypothesis**: the big tech lender need to provide more competitive interest rate and credit limit to compete for overlapped borrowers, who use the big tech loans for similar purposes as their conventional loans

Panel A: Summary Statistics

	No. of Borrowers	No. of Loans	Interest Rate	Credit Limit	Loan Size	Repay Once	Maturity	Payback to Maturity	No. of Loans Per Borrower	Ever Overdue >=30 days
Big Tech	6,684	42,548	14.5%	97,762	15,097	22.9%	10.0	41.4%	6.4	0.4%
Online	4,929	12,768	8.7%	169,447	82,916	75.3%	9.8	77.5%	2.6	0.9%
Regular	1,829	3,165	9.0%	179,186	125,293	66.1%	12.8	83.0%	1.7	1.5%

- The sample of overlapped borrowers show the same patterns: small loans, high interest rates, fast repayment

Overlapped Borrowers

- Perhaps these borrowers have run out of credit limits from Bank X
  - Split the sample based on whether the borrower of a big tech loan has sufficient credit limit at lower interest rate from Bank X at the time of taking the big tech loan

Panel B: Summary statistics by whether the borrower has credit limit from Bank X at the time of borrowing BigTech loans

	Number of loans	Number of borrowers	Interest rates	Loan size	Remaining Bank X credit limit	Loan Term	Pay back to Maturity
Bank X Credit Available	24,302	4,669	14.7%	14,493	171,632	9.9	39.8%
Bank X Credit Unavailable	18,246	4,356	14.3%	15,900	9,840	10.1	44.3%

Analysis of the Overlapped Sample

- The same patterns in the overlapped sample, even after including borrower fixed effects
  - Higher interest rates
  - Smaller loans
  - Faster repayment
- Implications:
  - The high interest rates are not simply price discrimination, possibly part of an overall strategy to induce advantageous selection
  - The big tech lender is not competing for the borrowers' other financing needs, confirming the restrained advantage view

Panel C: Regression Analysis

	Interest rates	Log(Credit Limit)	Log(Loan Size)	Payback to Maturity
Regular	-0.05***	0.95***	1.90***	0.23***
	(0.00)	(0.03)	(0.05)	(0.02)
Online	-0.05***	0.56***	1.46***	0.22***
	(0.00)	(0.02)	(0.02)	(0.01)
Big Tech*Bank X Credit Available	0.00***	-0.03***	-0.12***	-0.02***
	(0.00)	(0.01)	(0.01)	(0.00)
Loan Term: 6 months	0.00	0.13***	0.39***	-0.03**
	(0.00)	(0.02)	(0.02)	(0.01)
Loan Term: 12 months	-0.00***	0.22***	0.62***	-0.09***
	(0.00)	(0.01)	(0.02)	(0.01)
Loan Term: >=12 months	-0.02***	0.42***	0.99***	0.07**
	(0.00)	(0.04)	(0.04)	(0.03)
Repay Once	-0.01***	0.16***	0.08***	0.01
	(0.00)	(0.01)	(0.01)	(0.01)
Interest Rate			-0.23	-0.91***
			(0.37)	(0.14)
Log(Credit Limit)			0.66***	0.02***
			(0.02)	(0.00)
Borrower FEs	Yes	Yes	Yes	Yes
Origination Month FEs	Yes	Yes	Yes	Yes
Cluster Variable	Origination month	Origination month	Origination month	Origination month
Adjusted R-squared	0.81	0.77	0.63	0.65
Observations	58481	58481	58481	41824

Analysis of the Overlapped Sample

- Conditional on ex post default, no evidence of more likely to default on the big tech loans

Panel D: Compare payment overdue

	Ever overdue >=30 days × 100			
	Big Tech vs. Regular		Big Tech vs. Online	
Big Tech	-0.66*	0.53	-0.73**	-0.13
	(0.38)	(0.45)	(0.34)	(0.33)
Big Tech × Bank X Credit Available	-1.04***	-0.57**	-0.42***	-0.13
	(0.23)	(0.26)	(0.16)	(0.19)
Loan Term: 6 months	0.89***	0.66**	0.14	0.29*
	(0.35)	(0.30)	(0.29)	(0.17)
Loan Term: 12 months	1.79***	0.36	0.75**	0.71***
	(0.36)	(0.22)	(0.30)	(0.18)
Repay Once	-0.82***	0.08	-0.41**	0.39**
	(0.20)	(0.19)	(0.16)	(0.17)
Borrower FE	No	Yes	No	Yes
Origination Month FE	Yes	Yes	Yes	Yes
Cluster Variable	Origination month	Origination month	Origination month	Origination month
Adjusted *R*-squared	0.01	0.53	0.00	0.50
Observations	5724	5724	19365	19365

Analysis of the Overlapped Sample

Panel E: The correlation between loan characteristics and borrower overdue ex post

	Big Tech vs. Regular				Big Tech vs. Online			
	Log(Avg. credit limit)	Log(Avg. interest rates)	Log(Avg. loan size)	Log(No. loans)	Log(Avg. credit limit)	Log(Avg. interest rates)	Log(Avg. loan size)	Log(No. loans)
Big Tech	-1.06***	0.06***	-2.61***	0.80***	-0.68***	0.06***	-1.87***	0.62***
	(0.03)	(0.00)	(0.05)	(0.04)	(0.02)	(0.00)	(0.03)	(0.02)
Big Tech × Borrower Overdue	-0.26	-0.01	-0.56***	-0.23	-0.24***	0.01***	-0.65***	-0.10
	(0.22)	(0.01)	(0.23)	(0.16)	(0.11)	(0.00)	(0.19)	(0.16)
Borrower FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Origination Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster Variable	Month	Month	Month	Month	Month	Month	Month	Month
Adjusted *R*-squared	0.54	0.51	0.7	0.27	0.41	0.57	0.59	0.24
Observations	1724	1724	1724	1724	4894	4894	4894	4894

- Evidence of better screening by the big tech lender

Conclusion

- The big tech loans are not more risky, despite their higher interest rates and the borrowers' lower credit quality
  - Different from p-to-p lending, e.g., Tang (2019), De Roure et al. (2021), Di Maggio and Yao (2021), Wang and Overby (2021), Ben-David et al. (2021) and Bao and Huang (2021)

- The big tech lending model:
  - The big tech loans are used to meet short-term liquidity needs, as borrowers repay quickly, far before the maturity, and borrow frequently
  - Confirm standard mechanisms: screening and monitoring
  - Confirm the importance of convenience, e.g., Buchak et al. (2018)
  - Suggest a new mechanism of high interest rates screening borrowers with short-term liquidity needs

- This current model focuses on financing of activities inside the lender's ecosystem
  - Not competing with banks for more general financing needs
  - How big tech lenders and conventional banks in the future may compete with each other in the future may depend on data sharing regulations, e.g., He et al. (2021), Parlour et al. (2021).