Upstart ($UPST)

Price Target: $88.61, Upside: 35%

Superior Underwriting, Continuous Growth

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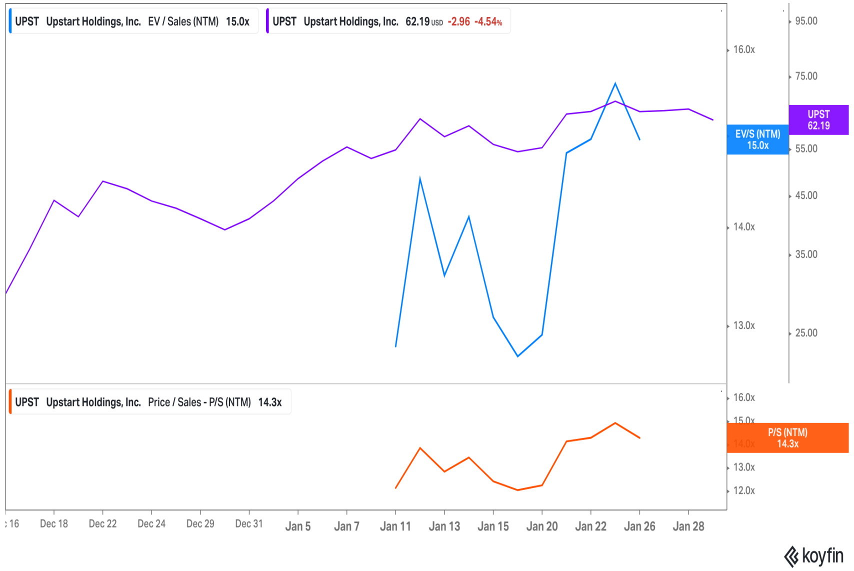
Industry and Business Overview

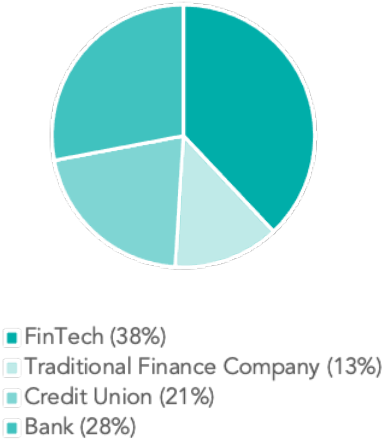
Upstart's Business Model and Recent Industry Dynamics

- **Products:** UPST is a loan platform lender; it originates and underwrites personal unsecured loans and uses banks and financial institutions as capital providers.
  - UPST's **proprietary statistical machine learning algorithms accurately assess credit risk.** Unlike traditional lenders' predominant use of FICO scores, USPT uses variables including education, field of study, income, potential future earning income, and debt obligations
  - Loan Process:
    1. Consumer **requests** loan via upstart.com or other source (white-label Bank product)
    2. UPST **underwrites** the consumer and assesses his/her credit quality
    3. UPST **provides** the consumer the loan via capital from partner banks
    4. UPST **services** the loan on the behalf of the partner bank (collects and sends payments to partner banks subtracting a servicing fee)
  - **Key costs** include customer acquisition/marketing (50% of UPST loans are through Credit Karma), R&D expenditure, and payroll.

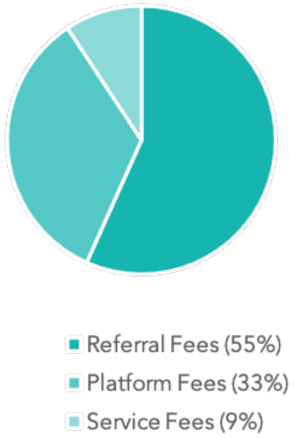


- **Financials:** $146M Revenue 2020 Q1-3 (+30% YOY) | EV/Sales 21.47 | Market Cap 4.5B
- **Industry Dynamics:** Unsecured Personal Loan Balances at record high of $161B (+17% YOY)
  - FinTech loans comprise 38% of balances (+9% YOY) up from 5% in 2013 [TransUnion]
  - 21.1M unsecured personal loans (+18% YOY) | $8,402 Avg. Debt/Borrower (+4% YOY)
  - Preference for online loans has increased 30% over past 2 years [PWC Experience Radar]
- **Key Competitors:**

Share of Total Personal Loan Balances



LTM Revenue Breakdown

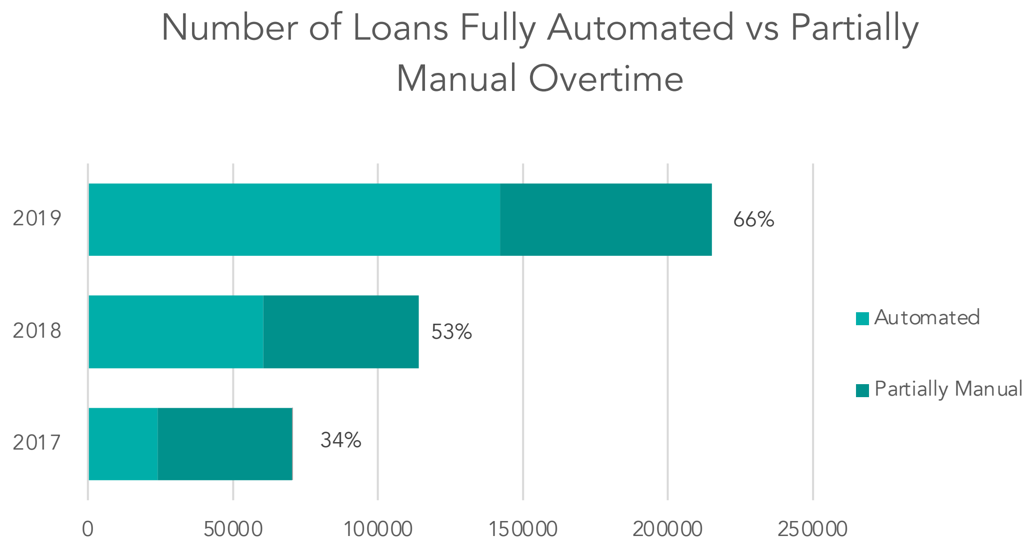


#1 Best-In-Class Underwriting

Utilizing proprietary ML/AI algorithms and more robust data ingestion, Upstart can more accurately underwrite consumers

Superior Underwriting Ability:

- Underwriting, especially for the smallest banks and credit unions, has not kept up with the pace of innovation in cloud computing and ML. The average small/mid-sized banks still rely on static FICO scores.
  - In the US alone, **80% of Americans never defaulted on a loan payment, yet only 48% of Americans have access to prime credit.**
- UPST's AI/ML algorithms capitalize on over **1,600 variables** and have been trained on **9M+ repayment events**
- Banks that partner with UPST can take on more loans for the same level of risk. UPST underwriting allows for **27% more borrowers than traditional models at 16% lower avg APRs**.
  - UPST's model approves almost double the number of consumers with FICO scores ranging from 620-660
- UPST has seen its model continually improve over time. As seen on the right, UPST has seen its **fully automated loans increase 32% from 34% to 66% of transacted loans in just two years**.
  - This represents an underwriting flywheel that allows efficiency to compound over time (more on this in thesis #2).
- UPST holds a 'no-action' letter from the CFPB. The CFPB selectively gives out no-action letters for companies pursuing technologies that can have outstanding benefits for consumers. Given the historic conservatism of the CFPB, it is hard to understate the vote of confidence the CFPB was willing to give the young start-up.

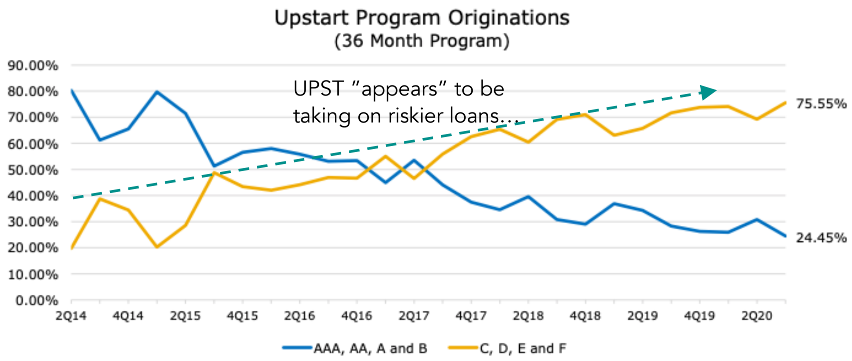


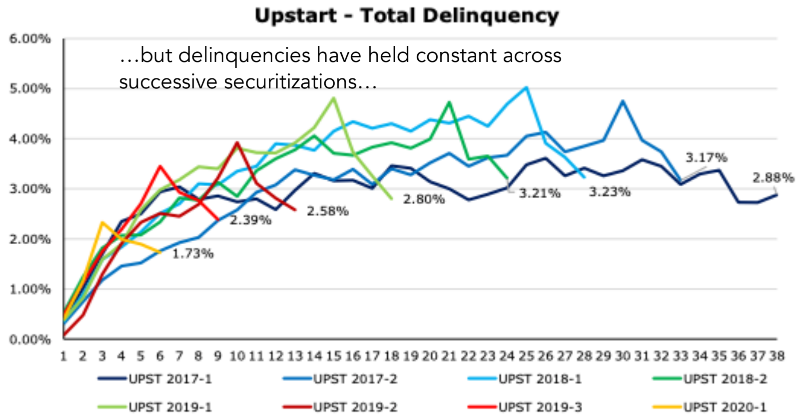
#1 Best-In-Class Underwriting (cont.)

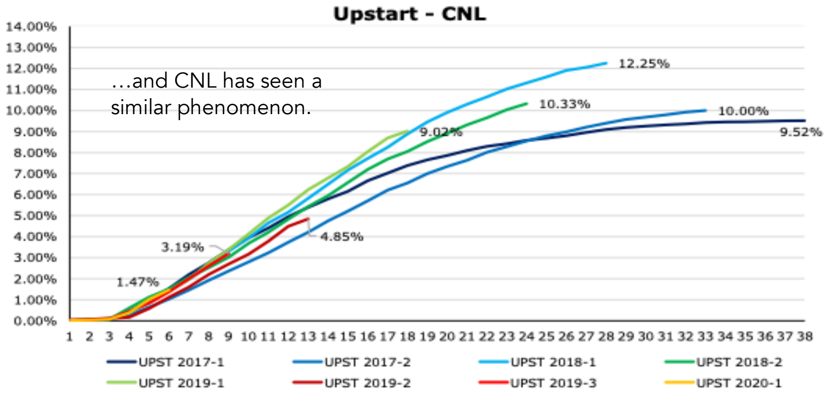
Analyzing securitizations of Upstart loans provides a lens into the strength of Upstart's underwriting abilities

Securitized Loans Analysis:

- UPST's superior underwriting capabilities allow it to approve "riskier" loans with little effect on delinquencies and cumulative net loses ("CNL").
- UPST has become more confident in its model's underwriting ability. As of **July 2020, 76% of loans originated from UPST were rated C, D, E, or F by Moody's, up from 20% in 2014**. Despite originating lower grade loans, **UPST has seen no impact on its delinquency rates or CNL**. This is indicative of UPST's ability to underwrite risk more accurately than traditional underwriting models.
  - Furthermore, despite riskier loans, Upstart has seen its CNL remain constant or decrease over time as their model improves.
    - As compared to Moody's loss predictions, **actual realized losses were 31% to 71% lower.** On average, Upstart saw a **deviation of -48%** when compared to Moody's loss predictions.





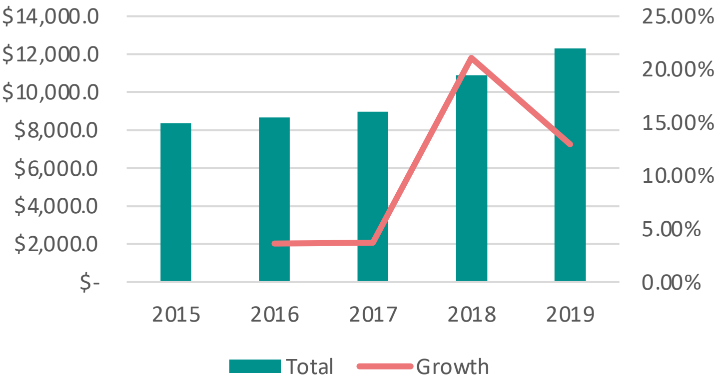


- With best-in-class technology, UPST proves its superior underwriting ability. Over time we hypothesize that more and more banks will be willing to fund Upstart written loans with a continued track record of success.
  - Currently ~93% of revenues come from UPST referrals. We think this will decrease to 74% by 2023.
- Even in times of economic downturn, UPST's relatively nascent model was able to be more accurate than current lending practices. During the COVID-19 pandemic, **UPST's model was able to be 5x more predictive than FICO scores**.
  - More illustrative, bank partners were quick to "turn-on" UPST during COVID. Q2 2020 saw an 86% q/q decline in loan originations as bank partners and capital markets aggressively sought to reduce risk. In Q3 2020, however, loans originated recovered rapidly to 96% of pre-COVID levels. This represented a strong vote of confidence from UPST's funding sources.

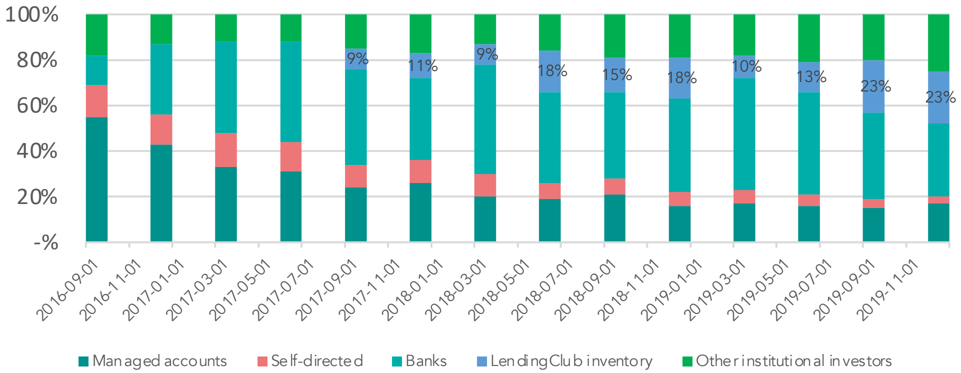
#1 Case Study: UPST is **not** Lending Club

A quick case study on one of UPST's competitors can highlight the key differences between the two companies

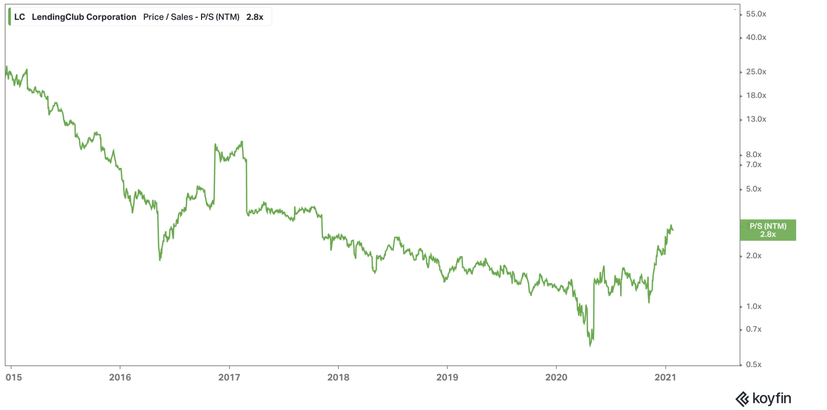
Loan Originations 2015-19



Funding Mix 2015-19



LC P/S LTM



Though Lending club saw consistent/flat charge-off rates, loan originations begin to decelerate in 2016. This is a result of Lending Club experiencing an increase in competition with an undifferentiated product…

To keep loan originations growing, Lending Club is forced to fund more loans themselves, increasing b/s risk. This is indictive of not having superior underwriting as institutional and retail investors as well as banks are not willing to fund more loans.

Increasing B/S risk leads to compression on P/S multiple, indictive of LC's poor performance overtime. By trying to fund loans itself and keep growth alive, LC was forced to take more risk on their B/S, inadvertently crushing their multiple.

UPST's difference: Underwriting

- As shown on previous slide, UPST has been able to take on 'riskier' loans with no impact on delinquency rates.
- LC, as seen on far right graphic, has continued to take less risky loans since 2015, and increased number of higher-grade loans, an indication of poor ability to underwrite all grades of loans.

Statistical Analysis on Scraped Lending Club Loans:

- Parsed **over 1,000,000 36 month-term P2P loans from 2014 – 2017** accepted by LC*
- Calculated default rate and average FICO score per company and assigned grade/loan risk class.
  - Computed default rates by dividing defaulted and charged off loan numbers by total number of loans per grade. Similarly computed average FICO score per grade.
- **Loans rated D, E, F, G, had a combined default rate of 24.42%. <u>All loan classes had a combined default rate of 12.51%, compared to the 1.7-3.2% for all UPST loans.</u>**
- LC's poor underwriting ability led to the breaking down of its P2P funding marketplace. If retail investors were not getting expected returns, they stopped putting money in LC underwritten loans. To keep growing loan originations, LC must fund its own loans, and thus caused the compression of its P/S multiple.

* Link to Github Repo: https://github.com/tthvar/upstart_long

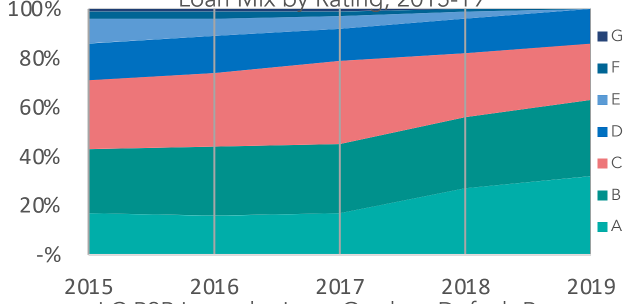
Overview of Loan Risk Classes

Loan Grade(s)	# of Loans	Default Rate	Average FICO Score
A	248,627	4.34%	727.4
B	368,969	9.63%	694.1
C	302,241	16.04%	686.2
D, E, F, G	169,820	24.42%	682.8
All Loan Classes	1,089,657	**12.51%**	697.8

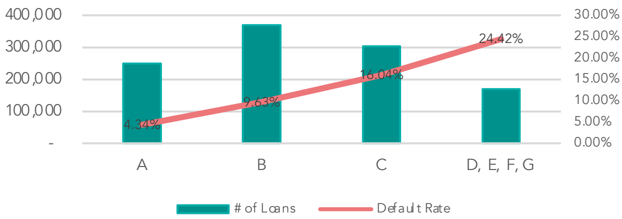
Breakdown of High-Risk Loans

Loan Grade	# of Loans	Default Rate	Average FICO Score
D	124,529	22.41%	683
E	36,285	28.53%	682
F	7,281	34.57%	681
G	1,725	40.11%	679
D,E,F,F	169,820	**24.42%**	683

Loan Mix by Rating, 2015-19

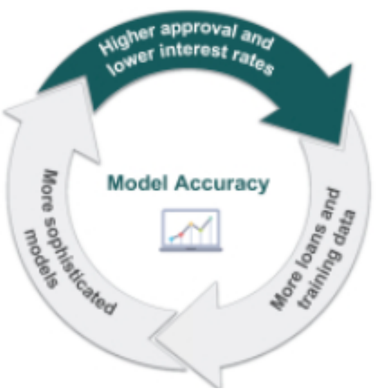


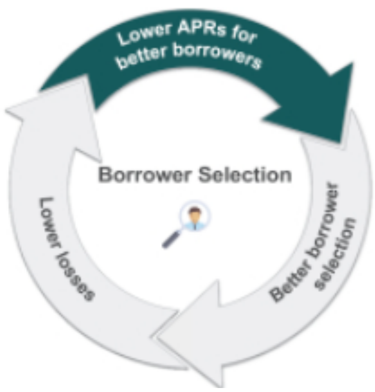
LC P2P Loans by Loan Grade + Default Rate



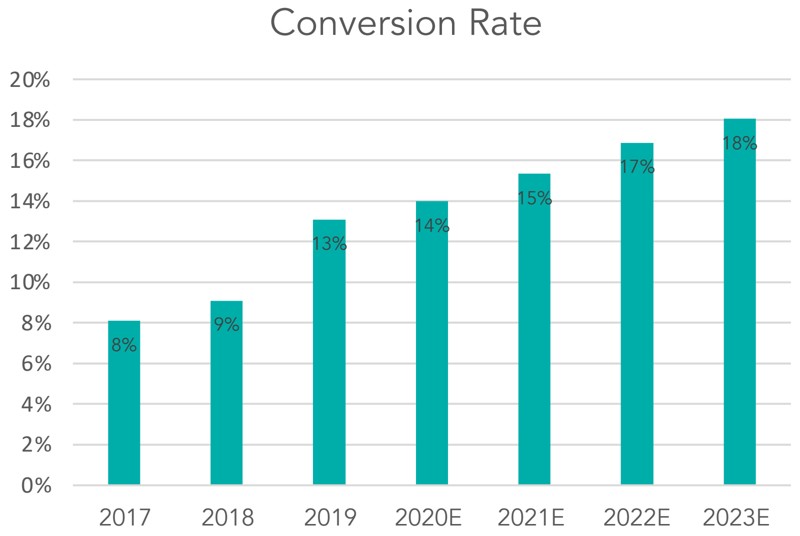
#2 AI Flywheel

Upstart has a flywheel which drives continuous improvement as it scales





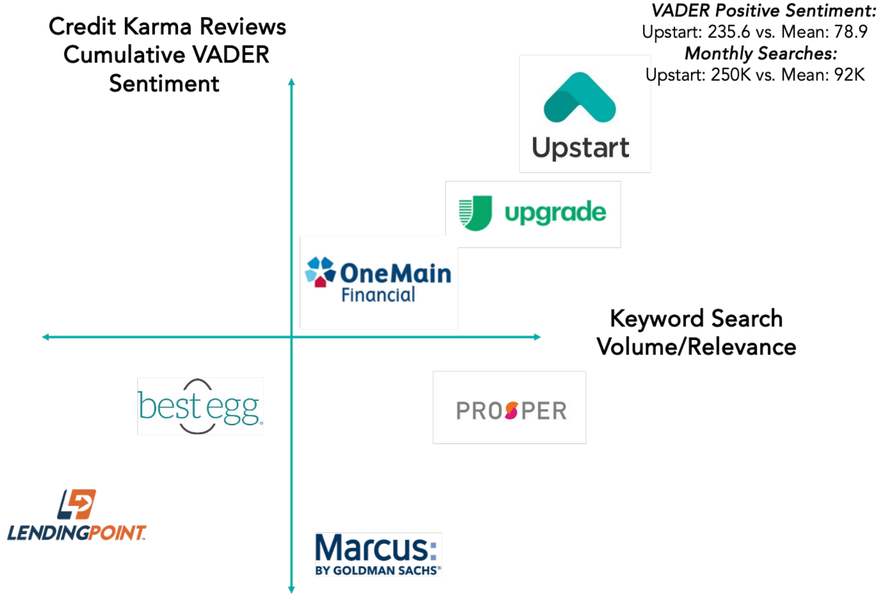
- UPST's flywheels serve to increase model accuracy and borrower selection as it scales.
- More loans and trading data allow for a more sophisticated model → leading to higher approval → lower interest rates.
- Lower APRs for borrowers → better borrower selection → lower losses for UPST.
- Their flywheel dynamics are directly trigged by increase the number of loans transacted. UPST has seen its loan funnel conversion increase from **8.1% in 2017 to 13% in 2019**.



VADER Sentiment Analysis

- Credit Karma currently accounts for ~50% of traffic to UPST. Using Credit Karma reviews as a proxy for customer sentiment, our team analyzed over **2,000 reviews on UPST and its main competitors***
- Valence Aware Dictionary for Sentiment Reasoning (VADER) is a model used for text **sentiment analysis** that is sensitive to both polarity (positive/negative) and intensity (strength) of emotion.
- UPST consistently ranked high in its VADER sentiment analysis score and keyword search volume. **UPST scored 3.0x average positive sentiment.**
  - UPST generates 2.7x avg monthly search volumes and demonstrates strong organic CTR rates.
- With a focus on growing conversion rates and increases loans transacted, UPST can keep its flywheel spinning and ensure its model continues to improve over time.

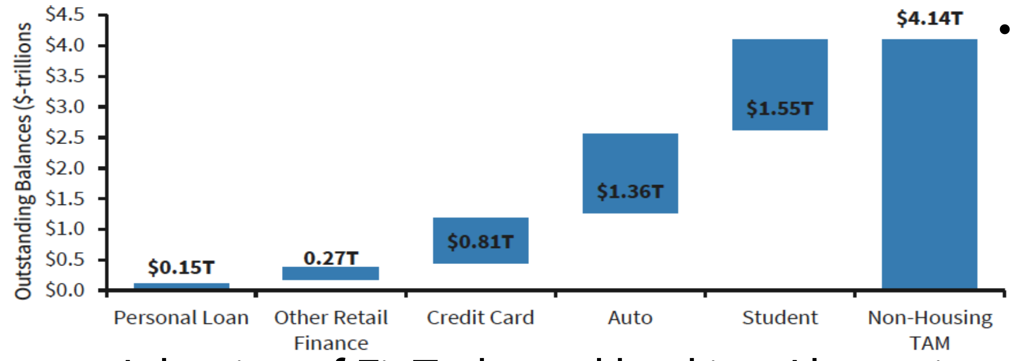
* Link to Github Repo: https://github.com/tthvar/upstart_long



#3 Upstart is playing into a large, rapidly expanding TAM

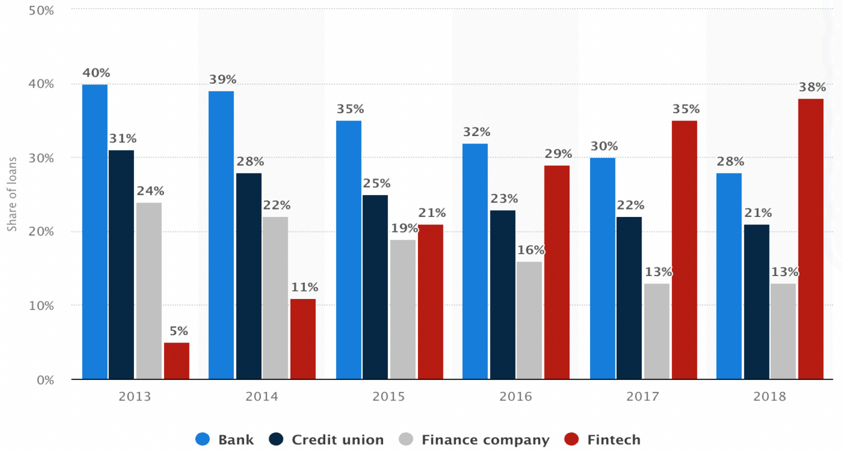
Upstart's total addressable market continues to increase and maintain low penetration

UPST TAM Potential (Excluding Housing; Outstanding Balances as of 3Q20)



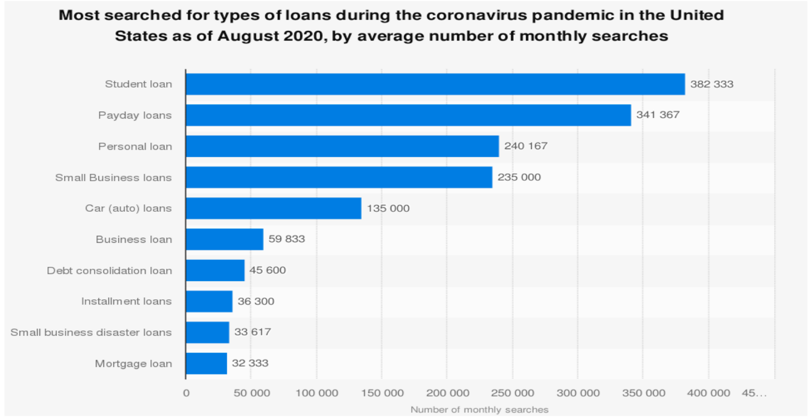
Underpenetrated, expanding loans market:

- UPST currently focuses on unsecured loans, which represents a TAM of **$161 B**
- With superior underwriting, UPST has been able to begin to move into other loan markets such as auto loans ($625 B), equity lines, credit card refinancing, student loans, and POS financing.
  - All combined, the TAM for UPST is > $900 B.



Adoption of FinTechs and banking Alternatives

- UPST benefits from the secular trend of consumers moving away from tradition lenders after the GFC.
  - Personal Loans for FinTechs grew **at 85% CAGR from 2013-18** (Statista)
- The Great Financial Crisis of 2008 created a perfect environment for the rise of FinTechs like UPST. Greater capital requirements for traditional lenders and increased regulation formed a perfect storm for FinTechs:
  - Banks had stricter underwriting standards, which limited access to affordable credit for consumers.
  - FinTechs have also been able to use stronger customer acquisition models
- COVID-19 may prove to help accelerate UPST's adoption. Consumers have become more comfortable with online services (e-commerce, FinTechs, neo banks). Post vaccine deployment, these consumers may seek to take more loans.
  - Searches for loans during COVID-19 yielded the results on the right, notably student and personal loans ranked in the top three results.



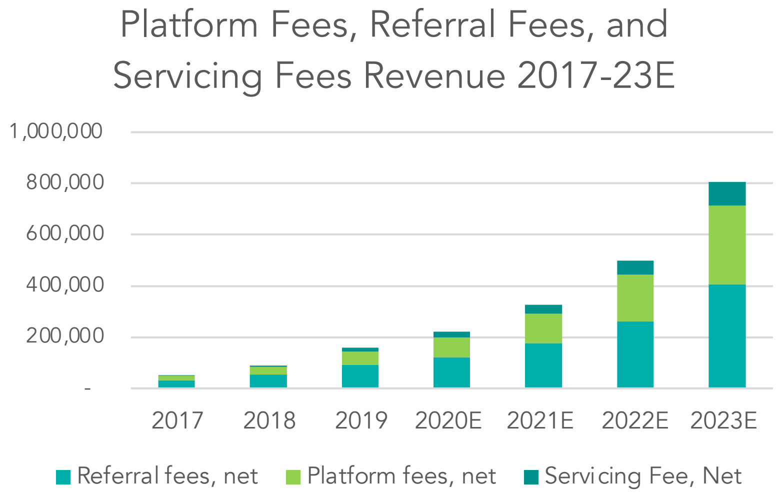
Valuation

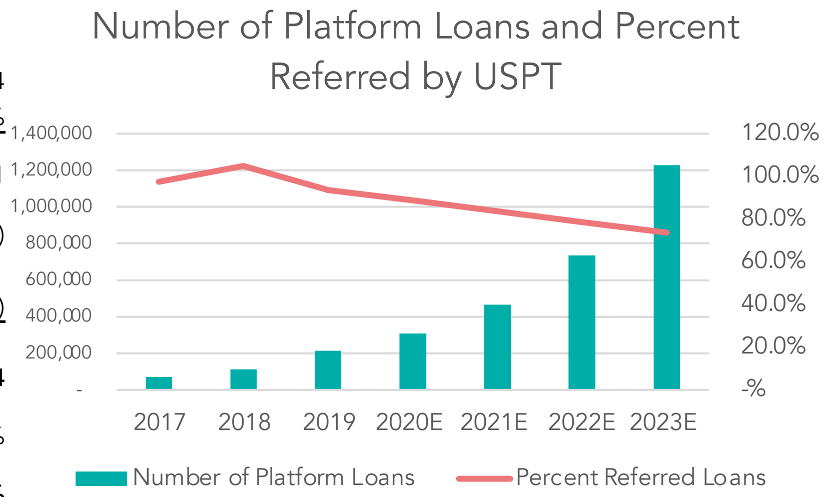
After calculating EV/NTM contribution profit for a handful of comparable companies, an expected value for UPST was reached

Note: Valuing UPST on EV/ Contribution Profit because: 1) Current market environment values high-growth, high-quality companies on EV/Sales, and 2) contribution profit helps neutralize for comparable with different amounts of exposure.

Key Financial Information

(In thousands, except share and per share amounts)	2017	2018	2019	2020E	2021E	2022E	2023E
Revenue:							
Referral fees, net	30,921	53,869	90,672	122,519	175,634	260,188	407,235
Platform fees, net	17,146	29,512	53,383	76,778	116,641	183,778	307,165
Servicing fees, net	3,094	5,101	15,792	22,713	34,505	54,366	90,867
Revenue from fees, net	51,161	88,482	159,847	222,011	326,781	498,332	805,267
Interest income and fair value adjustments, net	6,128	10,831	4,342	19,933	29,410	44,850	72,474
as % rev	12%	12%	3%	9%	9%	9%	9%
Total revenue	**57,289**	**99,313**	**164,189**	**241,944**	**356,191**	**543,181**	**877,741**
Borrower Acquistion Cost	(32,777)	(61,658)	(89,569)	(130,379)	(186,674)	(276,543)	(432,833)
Borrower Verification and Servicing Costs	(9,119)	(13,726)	(21,338)	(35,711)	(54,254)	(85,482)	(142,874)
Contribution Profit	15,393	23,929	53,282	75,853	115,263	181,157	302,034
Growth YoY		55%	123%	42%	52%	57%	67%
Contribution Margin	**27%**	**24%**	**32%**	**31%**	**32%**	**33%**	**34%**





2023E Contribution Profit	$	303,235
Discount Rate		10%
Two Y Fwd Contribution Profit		275,668
Cy20-23 Contribution profit CAGR		58.66%
NTM EV/Contribution Profit Peg		0.40
NTM EV/Contribution Profit		23.46
Enterprise Value (m)		6,468
Less Net Debt		47.348
Market Cap (M)		6,421
Shares Outstanding		72.46
Price Target		88.61
Current Share Price		65.64
Upside		35%

Pre-Mortem

This investment failed, Why?

Underwriting Proves Deficient

UPST relies heavily on its superior underwriting abilities to attract funding capital. If UPST is unable to keep their model at its current level of accuracy, UPST's ability to attract funding capital and continue to grow will be hampered.

Mitigant: Our analysis of UPST's securitizations, qualitative understanding of its AI flywheel, and appreciation of the CFPB's letter of "no-action", gives us confidence in UPST's underwriting model.

Funding Risk

UPST funds few loans from its own b/s (<3%); it relies on partner banks/institutional investors to fund loans. Given that UPST is valued on long-term high growth aspects, periods of uncertainty that lead to its funding partners cutting capital and impacting loan growth could lead to severe multiple contraction.

Mitigant: Thought not a "true" economic recession, we saw UPST quickly bounce back during the COVID-19 pandemic. As UPST continues to prove its superior underwriting, we believe more banks and institutional investors will be willing to take on UPST loans (ex: Oriental Bank). This will help to mitigate funding risk if UPST has a strong track record of success in underwriting with an increasingly diverse set of funding partners.

Inability to Underwrite in Economic Downturns

UPST has not been able to operate in a true financial crisis (without unprecedented amounts of stimulus). We yet cannot determine how well UPST will be able to operate and perform in times of "true" economic decline.

Mitigant: UPST was able to bounce back quickly during COVID-19 and kept client losses (if any) to a minimum. Furthermore, analysis of UPST's riskiest loans indicates that it has an edge in underwriting as delinquency rates were unaffected by lower ratings. We believe these factors are a strong indication of underwriting abilities that perform well in most economic conditions.

Exhibit A: Comps Model

Number of Platform Loans	70,457	114,125	215,122	307,073	466,503	735,013	1,228,496
Percent Referred Loans	97.5%	104.9%	93.7%	91%	88%	85%	82%
Number of Referred Loans (Upstart - Referred Only)	68,713	119,709	201,493	278,407	408,958	622,296	1,003,247
Average Loan Principal of Referred Loans	12,857	12,857	12,857	12,857	12,857	12,857	12,857
Implied Loans Principal Amount from Referrals	883,457	1,539,114	2,590,629	3,579,515	5,258,033	8,000,952	12,898,891
Referral fee %	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Referral fees, net	30,921	53,869	90,672	125,283	184,031	280,033	451,461
Number of Platform Inquiries	869,840	1,254,121	1,642,153	2,193,378	3,040,074	4,354,438	6,801,850
Growth YoY		44%	31%	34%	39%	43%	56%
Conversion Rate	8.1%	9.1%	13.1%	14.0%	15.3%	16.9%	18.1%
Growth YoY		12.3%	44.0%	6.9%	9.6%	10.0%	7.0%
Number of Platform Loans (Both Distribution Channels)	70,457	114,125	215,122	307,073	466,503	735,013	1,228,496
Growth YoY		62.0%	88.5%	42.7%	51.9%	57.6%	67.1%
Average Loan Principal of Platform Loans	12,168	12,930	12,408	12,502	12,502	12,502	12,502
Implied Loans Principal Amount from Platform	857,300	1,475,600	2,669,150	3,838,924	5,832,062	9,188,885	15,358,243
Platform fee %	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Platform fees, net	17,146	29,512	53,383	76,778	116,641	183,778	307,165
Implied Loans Principal Amount from Platform	857,300	1,475,600	2,669,150	3,838,924	5,832,062	9,188,885	15,358,243
Implied Servicing Fee	0.36%	0.35%	0.59%	0.59%	0.59%	0.59%	0.59%
Servicing Fee, Net	3,094	5,101	15,792	22,712.95	34,505.34	54,365.95	90,866.90
Implied Loans Principal Amount from Referrals	883,457	1,539,114	2,590,629	3,579,515	5,258,033	8,000,952	12,898,891
Acquistion Cost %	3.71%	4.01%	3.46%	3.72%	3.72%	3.72%	3.72%
Borrower Acquisition Cost	32,777	61,658	89,569	133,319.96	195,599	297,635	479,839
Implied Loans Principal Amount from Referrals	70,457	114,125	215,122	307,073	466,503	735,013	1,228,496
Verification & Servicing Cost %	12.94%	12.03%	9.92%	11.63%	11.63%	11.63%	11.63%
Borrower Verification and Servicing Cost	9,119	13,726	21,338	35,711.39	54,254	85,482	142,874

Implied Revenue Build

	2017	2018	2019	2020 E	2021E	2022E	2023E
Number of Inquries	869,840	1,254,121	1,642,153	2,193,378	3,040,074	4,354,438	6,801,850
Growth YoY		44%	31%	34%	39%	43%	56%
Loans Transacted	70,457	114,125	215,122	307,073	466,503	735,013	1,228,496
Growth YoY		62.0%	88.5%	42.7%	51.9%	57.6%	67.1%
Conversion Rate	8.1%	9.1%	13.1%	14.0%	15.3%	16.9%	18.1%
Growth YoY		12.3%	44.0%	6.9%	9.6%	10.0%	7.0%
Avg Fee	726.13	775.31	743.05	731.99	718.49	704.99	691.49

		Contribution Profit						EV/NTM Contribution Profit		
VA Ticker	BBG Ticker	CY-20	CY-21	CY-22	CY-23	CY20-22E CAGR	CY20-23E CAGR	Enterprise Value	Multiple	PEG (CY20-23E, when possible)
High-Growth, Non-BS/BS-Light Fintech Lending Platforms:										
PYPL	PYPL US Equity	11,722	13,652	15,863	18,030	16.3%	15.4%	276,510	20.3x	1.31
APT_AU	APT AU Equity	467	750	1,109	1,517	54.0%	48.0%	29,144	38.9x	0.81
AFRM	AFRM US Equity	180	251	402	603	49.2%	49.5%	30,167	120.1x	2.43
Katapult	FSRV US Equity	40	70	151	216	94.3%	75.4%	2,515	35.9x	0.48
High-Growth, Non-BS Specialty Merchant Acquirers:										
RPAY_US	RPAY US Equity	26	51	65	49	58.4%	24.2%	2,184	42.6x	1.76
LSPD_CA	LSPD CN Equity	45	67	105	NA	52.5%	NA	8,032	119.9x	2.28
NVEI_CA	NVEI CN Equity	232	292	346	399	22.2%	19.9%	7,516	25.7x	1.29
FOUR_US	FOUR US Equity	205	275	338	412	28.5%	26.2%	5,993	21.8x	0.83
Paysafe	BFT US Equity	420	561	640	729	23.4%	20.2%	15,762	28.1x	1.39
High-Growth, B2B Platforms:										
BILL_US	BILL US Equity	94	122	151	172	26.5%	22.1%	9,725	79.8x	3.61
COUP_US	COUP US Equity	205	250	345	467	29.8%	31.6%	23,886	95.7x	3.03
SHOP_US	SHOP US Equity	959	1,231	1,650	2,273	31.2%	33.3%	140,971	114.5x	3.43
Non-BS, Loan Marketers/Originators:										
TREE_US	TREE US Equity	337	411	493	603	20.9%	21.3%	4,487	10.9x	0.51
Slow Growing, BS Lenders:										
GSKY_US	GSKY US Equity	181	159	284	NA	25.2%	NA	1,068	6.7x	0.27
OMF_US	OMF US Equity	1,901	2,166	2,376	NA	11.8%	NA	22,856	10.6x	0.89