



# CFA Institute

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## CFA Institute Research Challenge

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Table 1: Market Profile

Current Price	\$288.46
52-week Price Range	\$183.25-404.40
Avg. Daily Volume	282,483
Market Capitalization	3.627 Billion
Earnings per Share	\$6.5
Shares Outstanding	12,827,755
Net Profit Margin (2018)	20*%
Return on Equity (Sept-2018)	27.31%

(Source: Yahoo Finance)

Table 2: Financial Data

	2014	2015	2016	2017
Debt/Equity				0.81
Annual Revenue (Millions of US \$)	167	254	384	618
Total Assets	140	296	323	693
TTM EPS	1.07	2.15	3.77	0.73
Current Assets	0.12B	0.25B	0.14B	0.44B
Current Liabilities	0.04B	0.05B	0.07B	0.15B
Current Ratio	3.1	4.55	2.11	2.97
TTM Net Income	\$0.01B	\$0.05B	\$0.03B	0.02B
Shareholders' Equity	\$0.10B	\$0.24B	\$0.23B	\$0.30B
Return on Equity	12.01%	34.22%	12.79%	5.29%
Return on Investment	0.00%	20.68%	23.74%	7.17%
Return on Assets	6.93%	24.77%	9.87%	2.52%

(Source: Macrotrends.net)

Table 3: Valuation Results

Valuation Date	Jan 18th 2019
Methodology	Value/share
Current Price	288.46
DCF	310.18
Cost of Equity	10%
12 month return	7.52%

Valuation Date 01/18/19  
Current Price \$288.46  
Ticker TREE

**Recommendation BUY**  
Target Price \$310.18

Stock Exchange NASDAQ  
Sector Finance  
Industry Loan Brokers

### SUMMARY

Lending Tree operates an online market space for consumers seeking loans and credit-based offerings in the United States, through suitable information, tools, and access to various conditional loan offers for both mortgage and non-mortgage products.

### INVESTMENT RECOMMENDATION

We issue a BUY recommendation with a target price of \$310.18 per share. This price represents a 7.52% upside from its closing price as of \$288.46 per share as of January 18<sup>th</sup> 2018. Assuming an average annual growth rate of 15.41% for cash flows, our valuation is based on a discounted free cash flow (DFCF) analysis, Monte Carlo Simulation and further Sensitivity Analysis (Quantitative Techniques). (Refer to Table 3: Valuation Results) Our recommendation is driven by the following factors.

- Impressive historical growth rate of revenues of 47.12% YoY from 2014 to 2018 because of impressive growth in mortgage and non-mortgage business
- Optimistic projected future growth rate in non- mortgage business because of company's aggressive market strategy of acquiring new firms to increase their customer base by increasing the number of products and online presence
- Better outlook for mortgage business because of expected surge in Refinancing of loans due to expected decline in interest rate by 2020.
- Expected increase in number of online users supported by Tree's impressive sells and advertising strategies
- LendingTree's increased investment on Analytics and Data Science to acquire more customers by recommending the right products to the right customers at the right time backed up by providing the best customer experience

### CURRENT HIGHLIGHTS

- **Change of Executive managements bring new blood to the company:** LendingTree has a transition in its management level. New CFO J.D.Moriarty joined company in Jun 2017 as well as new Chief Marketing Officer Brad Wilson and Chief Product Officer can shares their valuable experience from their previous company.
- **New acquisition boost company's revenue:** The acquisition of QuoteWizard, Student Loan Hero, and Ovation Credit Services makes LendingTree's revenue goes up. These acquisitions help LendingTree expands its business lines and services.
- **Revenue on Non-mortgage business has huge increments:** The company has been on track to reach its goal in expanding non-mortgage business. The goal is accomplished quite well. The growth rate for non-mortgage business is 117%.
- **Stock repurchase program:** According to 10-K form from SEC, on Feb'2018 the board of directors authorized and announced a stock repurchase program which allowed for the repurchase of up to \$10 million, \$10 million, \$50 million and \$100 million respectively, of their common stock. It shows the company have confidence on their stock performance in the future.

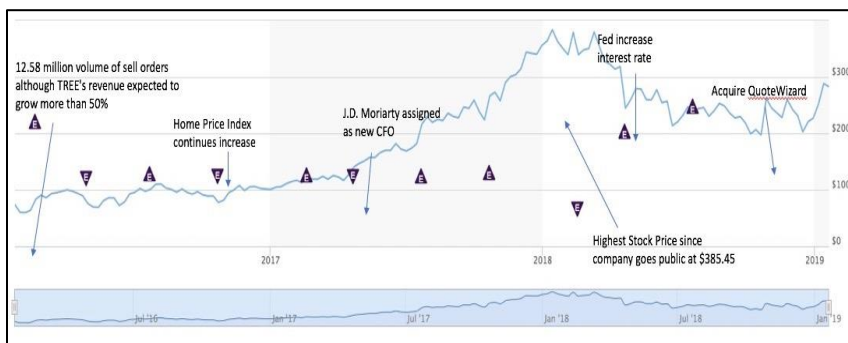


Figure 1: Stock Price Movement along vis-à-vis key events  
(Source: Yahoo Finance, Lending Tree website, SEC-10-k form)

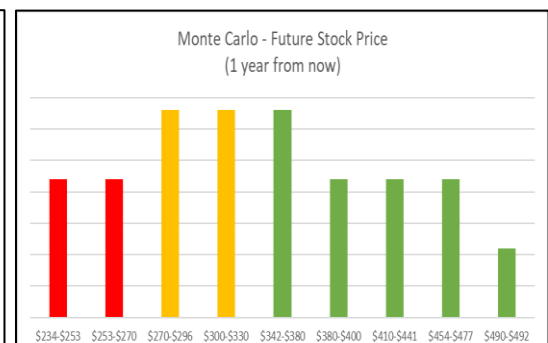
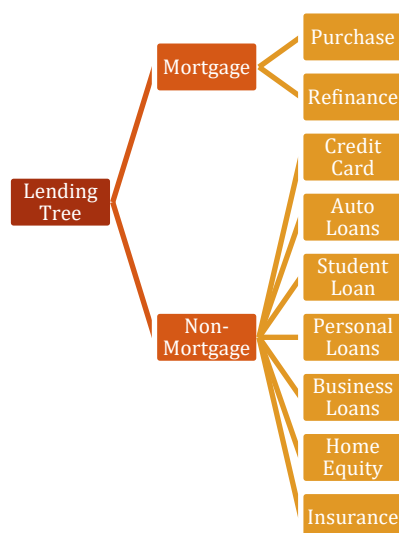
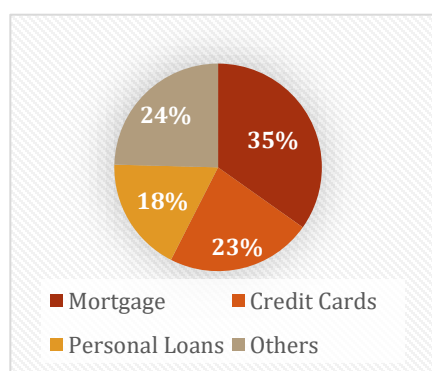


Figure 2: Monte Carlo Simulation Output

## BUSINESS DESCRIPTION



**Figure 3: Revenue Streams**  
(Source: Lending Tree website)



**Figure 4: Segment Sales Revenues**  
(Source: SEC-10-k form)

LendingTree (NASDAQ: TREE) is an American online mortgage broker with its headquarters based in Charlotte, North Carolina. It operates an online lending exchange that connects consumers with multiple lenders, banks, and credit partners who compete for business. LendingTree was originally founded in 1996 as CreditSource USA by Douglas R. Lebda. The founder caught the dot-com bubble at the peak and launched the website nationally on 1998. LendingTree was acquired by iac/InterActiveCorp at May 2003 and joined a number of great businesses also recognized as leaders in their own industries including Ticketmaster, Ask.com, HomeShopping NetwORk (HSN), and Match.com. After 5 years, LendingTree spun-off from IAC and join newly established Tree.com, Inc. At 2014, Tree.com rebranded itself back under its LendingTree flagship name with its multi-product loan matching services under the LendingTree brand. LendingTree, Inc. is the nation's leading online loan marketplace, empowering as they comparison-shop across a full suite of loan and credit-based offerings. It has 9 subsidiaries including LendingTree, LLC.

## PRODUCTS AND SERVICES

The company has two major businesses which are Mortgage and Non-Mortgage service. In mortgage service, they focus on purchase of mortgage and refinancing. For non-mortgage service, the company provides products such as credit card, auto loans, student loans, personal loans, business loans, home equity, and insurances. (Refer to Figure 3: Revenue Streams)

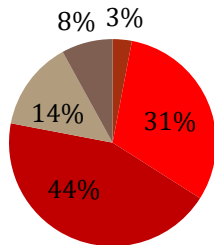
- **MARKET STRATEGY:** Lenders pay LendingTree for the chance to compete for customers' business. They pass customers' profile to up to five lender who then provide customers a customized loan offer based on customers' request. LendingTree charges processing fee and other fees as normally required by the lender at the time when customers decide to take out loans. Also, the company increase their advertising expense. According to 10-Q form, the company spend almost 60%-70% of their revenue into advertising. The company pays social medias such as YouTube and Facebook. Video Watchers will notice the company's commercial before the start of video. When potential loaners browse on Internet or searching with Google, the company's ads are always shown on first page.
- **COMPENSATION:** Douglas R. Lebda had a 3,157% increase in total compensation in 2017. According to a filing with the SEC, his compensation for 2017 totaled at \$59.59 million, a \$57 million increase from the previous year. LendingTree said this increase on compensation due to "initial retention awards" that were "intended to serve as incentive compensation for four years."
- **SOCIAL RESPONSIBILITY:** LendingTree has actively participated community events. They launched a socially-powered philanthropic campaign to promote the act of giving back and lending a hand to others in need during the holiday season. The "Lend a Hand" campaign built upon its annual charity program by expanding the initiative through social media and partnering with Make-A-Wish. LendingTree has collaborated with social medias such as Facebook, Twitter, Instagram, Google+, Vine, and Flickr.

## LATEST ACQUISITIONS

Company has acquired following companies thereby generating more revenues:-

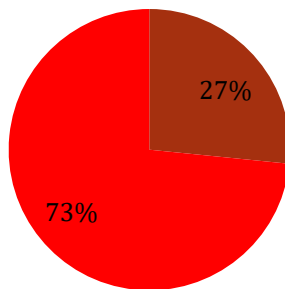
- **Student Loan Hero:** Acquired by LendingTree in July 2018, whereby it combines easy-to-use tools with financial education to help the millions of Americans living with student loan debt manage and pay off their loans. Since 2012, it helped more than 2 million borrowers manage and estimate over \$3.5 billion in student loan debt.
- **QuoteWizard.com:** Acquired by LendingTree in October 2018, an insurance comparison online marketplace. It helps consumers navigate the insurance landscape and enable easy comparison shopping.
- **CompareCards:** Provides easy-to-use, objective tools and educational resources that help people do everything from making credit card comparisons to managing their credit health. In average, over 2.9 million visitors use this product to compare credit cards each month.
- **DepositAccounts.com:** Largest and most comprehensive online publication in the U.S. dedicated to banking and deposits product information for consumers. It can track approximately 275,000 consumer deposit rates, each updated nightly.
- **MagnifyMoney.com:** Acquired by LendingTree in June 2017. Its unbiased advice and comprehensive product database helps millions of people compare credit cards, loans, checking accounts, and saving accounts.
- **SnapCap:** Acquired by LendingTree in September 2017. It is leading a revolution in small business finance by reducing the complexities found in the traditional lending process.

- Consumers aged 18-25
- Consumers aged 26-40
- Consumers aged 41-55
- Consumers aged 56-65
- Consumers aged 66 and older



**Figure 5: Major Market Segmentation**  
(Source: IBISWorld)

- New residential mortgages
- Refinancing



**Figure 6: Online Mortgage Industry revenue**  
(Source: IBISWorld)



**Figure 7: online Mortgage Business Geographical location** (Source: IBISWorld)

## INDUSTRY OVERVIEW AND COMPETITIVE POSITIONING

The online mortgage broker industry is about firms that provide online mortgage Marketplaces and it does not include institutions that originate home mortgages through online medium for example such big firm such as Bank of America, Wells Fargo originating online loans. The major activities and services offered by industry are providing an online mortgage marketplace for comparison shopping, brokering mortgage refinances online and brokering home equity loans. Industry operators such as Lending Tree, Quicken loans, Bank Rate, Zillow etc. match consumers seeking mortgages with lenders on a fee basis or set up mortgage marketplaces where mortgage lenders can access a list of potential borrowers.

## REVENUE AND GROWTH FORECAST OF AN INDUSTRY AS A WHOLE

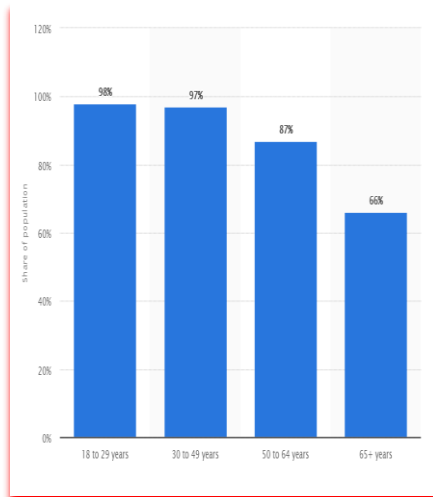
This industry has been growing at an unprecedented rate of 20.7% CAGR from 2013-2018 with reduced revenue growth of 5.5% in 2016 alone, resulting in a total market size of USD \$807.5 million (Source: IBIS). This Revenue growth from 2013-2018 was supported by increase in the percentage of people seeking mortgage services online and also due to growth in the housing market after the financial crisis of 2008. According to Mortgage Bankers Association, refinance originations will continue to trend lower next year, decreasing by 12.4 percent to \$395 billion due to increases in the 30-year conventional mortgage rate. But the new mortgage originations are set to move on a higher trend as the unemployment rate is at its lowest level in almost 50 years, resulting in faster wage growth and more confident homebuyers.

## INDUSTRY OUTLOOK

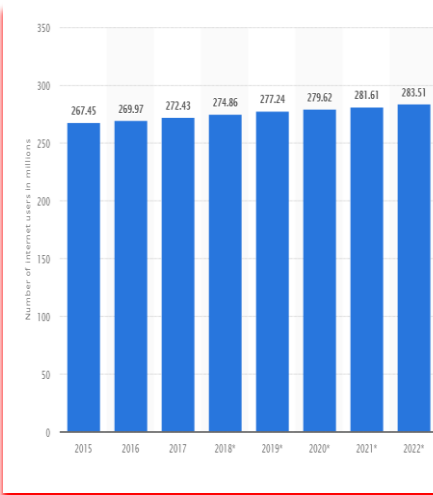
The industry has been threatened by a bank and nonbank institutions issuing mortgage loans directly to consumers online without the use of a broker. For example, large banks have partnered with a variety of technology companies to combine their credibility as the reputed banks and taking the technology infrastructure of Technology players to set up their online mortgage. While the share of mortgages that are brokered has contracted in recent years, the percent of mortgages brokered online has risen significantly. Over the five years to 2023, the industry is expected to expand further, but at a decelerated pace, with revenue anticipated to rise at an annualized rate of 3.4% to \$956.0 million. (Source: IBIS)

- **Increasing Market Share of Players in Industry:** Mortgage marketplaces such as Lending Tree and Zillow are expected to achieve an increasing share of industry revenue as they continue to make strategic acquisitions. Also, Market share concentration in the Online Mortgage Brokers industry has increased sharply over the five years to 2018 due to the growth of dominant players Lending Tree and Zillow.
- **Decreasing Profit Margin:** Due to aggressive advertising budget to attract new customers, the company has decrease on profit margin. As a result of Aggressive advertising for customer acquisitions Lending Tree has deployed a marketing budget of around 50- 60% of revenue to attract new customers to its platform. Significant investments in marketing by major players have caused the industry average profit margin to decrease from 25.6% in 2013 to an estimated 20.8% in 2018 (Source:IBISWorld).
- **Market Segmentation:** Consumers aged 41 to 55 comprises the majority segment (44%) of online market place, who are followed by the age group of 26 to 40 (31%).
- **Product Development and New Firms Entering the Market:** Lending Tree and other competitors are also expected to continue investing in product development and advertising expenditure to increase brand recognition and customer acquisition and retention. Despite the dominance of a few of industry operators such as lending Tree and their increasing scale, more online mortgage brokers are expected to enter the industry over the five years to 2023. During the outlook period, the number of industry enterprises is forecast to increase at an annualized rate of 3.2% (Source:IBISWorld).
- **Industry Life Cycle:** Marketing and Innovation is the key to sustain in this as many new enterprises have entered the industry to service greater customer demand.

**ONLINE MARKET SPACE :** Lending Tree identifies itself as a Financial Technology company and thus heavily depends on its online presence and easy access to its website. Capital investment required to enter into online marketplace is much lesser than physical market and thus it faces stiff competition from other similar online search website like Bank Rate, Quicken Loans, Lending Club etc. TREE will be able to dominate online borrowing and lending market only if Borrowers and lenders finds their online search experiences easier and smoother than its competitors like. Its ability to target right customers at right moment and showing them right product using data analytics and machine learning will play an essential role in its future success.



**Figure 8: Projection of Internet Users in US over the years**  
(Source: Statista .com)



**Figure 9: Share of Population that uses Internet**  
(Source: Statista .com)

Valuation Measures	Lending Tree	Lending Club	Zillow
Market Cap (intraday) <sup>5</sup>	3.54B	1.31B	6.81B
Enterprise Value <sup>3</sup>	3.22B	1.25B	6.05B
Forward P/E <sup>1</sup>	35.95	17.06	83.9
PEG Ratio (5 yr expected) <sup>1</sup>	1.14	-3.45	1
Price/Sales (ttm)	4.9	1.78	5.44
Price/Book (mrq)	9.51	1.51	2.05
Enterprise Value/Revenue <sup>3</sup>	4.45	1.7	4.84

**Table 4: Valuation Measures**  
(Source: CSIMarket.com)

Company's strong faith on analytics and machine learning can be learnt from the fact that they have made a long-term multiyear deal with Gordian Knot Analytics Group for segmentation analysis and database scoring by utilizing their unique segmentation methodologies and proprietary machine learning toolset. Gordian Knot offers proprietary marketing analytics machine learning tools that help LendingTree more effectively target and engage with the right consumers to drive the business forward and maximize value for current and future customer. Lending Tree was also in use on July 11th, 2017 when Lending Tree achieved new milestone for DataRobot, the leader in machine learning automation by getting 200 millionth customers run predictive analytics models in DataRobot Cloud. LendingTree, the online loan marketplace that connects consumers with multiple lenders, banks, and credit partners, achieved this milestone for the company. With DataRobot, LendingTree remains the market leader through an AI-driven approach to product development. LendingTree uses DataRobot Cloud to improve the consumer experience by providing personalized options, while also predicting the likelihood of a consumer taking a loan.

According to our research Lending Tree stocks and revenue is strongly correlated with number of online users. According to statista.com number of internet users in United States has risen to 274.86m in 2018 from 267.45m in 2015 and is expected to increase further to 283.51m by 2022 considering reasons like rise in population, number of peoples going to school more than ever and demand to have computer skills. According to age group 98% of people between 18- and 29-years age and 97% of people between 30-49 age use internet (statista.com). With this there's more chances that people will go online to search best interest they can get and leading to increase in TREE's business. The average age of a homeowner across the 100 largest metropolitan areas in the United States is 54 according to survey done by Lending Tree itself and average age of homebuyer is 32 according to housewire.com. Federal Reserve is expected to increase mortgage rates three more times in 2019 so, it is unlikely that borrowers would refinance their existing mortgage. According to our research we expect that major chunk of Mortgage revenues would come from first time home buyer and those buyers would be comparatively younger and more likely to contribute to Lending Tree's business because of their inclination to go online. Also, people inquiring about student loans, credit card, auto loan would be comparatively younger and are more likely to contribute to Lending Tree's non-mortgage revenue. We also tried to see how google search engine works and found that in regards when online users try to hit some key words and how Lending Tree appears on output page. When consumer would type 'Compare Mortgage Loan', Lending Tree pops up 3rd on 1st google page. When consumer would type 'Compare Student Loan', Student Hero pops up 1st which has been acquired by Lending Tree back in 2018. Lending Tree popped up 5th on first page when 'Auto Loan' was searched

**COMPETITIVE POSITIONING :** Banks and credit unions are spending more than 25 billion in advertising in which industry and the lending tree has the potential to increase their share. And out of total money spent on advertizing 75% is being spent online in paid search and display which is very useful but the returns that banks are getting due to that spending is very subjective and cannot be attributed well. Out of that 75% or approximately 15 billion spend on online advertising. Only 20% of that i.e. around 3 billion is being spent on comparison shopping. In which many competitors compete such as credit karma, Zillow, bank rates. Out of which lending tree captures around 3rd of a market.

- **Aggressive Marketing and Advertising:** As Lending Tree is spending aggressively on marketing and attracting new customer base through ads online, on TV broadcasts, Native Advertising, offline and through a range of other sources. It will help them to better position themselves in the Industry.
- **Good reputation and Creating Value:** Lending Tree had maintained a positive reputation with both lenders and borrowers to ensure future business. They have been creating value for both Lenders and borrowers. They Create value for borrowers by providing them the tools and calculators and also give them educational material on mortgages. They create value for lenders by giving them a great platform for customer acquisition which is cost efficient and targeted.
- **Brand Dominant and Economies of Scale:** Lending tree is in business for more than 20 years which makes them trustworthy as they had a very long past history of being into the business. Lending tree must be able to take advantage of economies of scale to offer the lowest prices for its services. Also, Secular Trends is in favor as more and more customers are turning online. They have helped more than 500 lenders to originate more than 30 billion in loans across different categories.
- **Product Development, Litigation and Other Costs:** LendingTree spent a



Profitability	Lending Tree	Lending Club	Zillow
Profit Margin	0.1273	-28.19%	-7.94%
Operating Margin (ttm)	0.0994	-6.38%	-0.46%
Management Effectiveness			
Return on Assets (ttm)	0.0631	-4.96%	-0.10%
Return on Equity (ttm)	0.3019	-22.15%	-3.31%

**Table 5: profitability Measures**  
(Source: CSIMarket.com)

Income Statement	Lending Tree	Lending Club	Zillow
Revenue (ttm)	723.15M	733.88M	1.25B
Revenue Per Share (ttm)	58.68	1.75	6.45
Quarterly Revenue Growth (yoy)	0.149	26.80%	21.70%
Gross Profit (ttm)	600.51M	487.65M	991.59M
Net Income Avi to Common (ttm)	102.55M	206.85M	99.35M
Diluted EPS (ttm)	6.5	-0.5	-0.51

**Table 6: Income Statement Measures**  
(Source: CSIMarket.com)

Balance Sheet	Lending Tree	Lending Club	Zillow
Total Cash (mrq)	265.19M	348.02M	1.64B
Total Cash Per Share (mrq)	20.67	0.82	8.08
Total Debt (mrq)	247.7M	305.34M	715.01M
Total Debt/Equity (mrq)	65.79	35.17	21.54
Current Ratio (mrq)	3.33	16.31	11.72
Book Value Per Share (mrq)	29.03	2.03	16.34

**Table 7: Balance Sheet Measures**  
(Source: CSIMarket.com)



**Figure 10: Projection of Revenue (% Share)**  
(Source: SEC 10-k form)

substantial 3.1% of its total revenue on product development alone in 2017 which is expected to increase. Also, Due to large Acquisitions, litigation cost also tends to increase in the future.

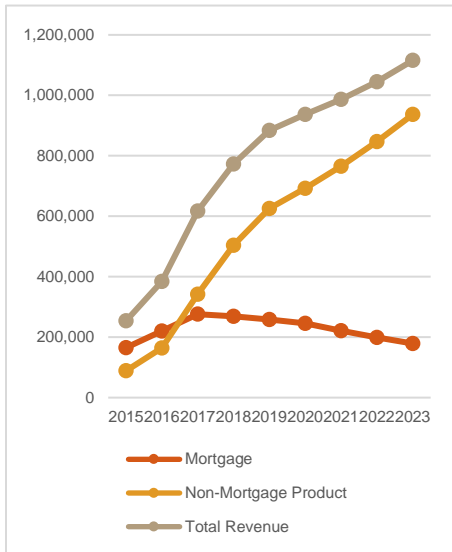
## FINANCIAL ANALYSIS – HISTORICAL AND FUTURE FORECAST

### REVENUE GROWTH

Tree has constantly shown high revenue growth rate in both mortgage and non-mortgage line of business. In 2018, TREE generated revenue of \$617m having growth rate of 60.70% over the year 2016. Since FY 2012, company has spectacularly generated CAGR of 52.76%. TREE categorize its revenue to two primary business line: Mortgage Products (45% share of its total revenue in FY2017) and Non-Mortgage Products (55% share of its total revenue in FY2017). TREE has been more than doubling its revenue from Non-Mortgage products since 2012 which is a strongest reason for its impressive growth rate. In 2017, TREE increased its Non-Mortgage revenue to \$341m from \$164m in 2016. TREE has CAGR of almost 117% on its Non-Mortgage line which brings stronger faith on TREE's future because of instability in mortgage line of business. As per our analysis, TREE knew that it cannot stay reliant on Mortgage line of business and that's why they have been constantly emphasizing on Non-Mortgage line. This is evident from three quarter revenue division of year 2018 too. TREE's revenue from Non-Mortgage product from 2018's three quarter only is \$366.5m and we project it to be \$504m by the yearend. TREE was able to generate only \$195.7m in 3 quarters on 2018 from Mortgage line and we project it to be \$269m which is 2.45% less than the 2017. 2018 would be first time that TREE's revenue from Mortgage would shrink. According to our projection TREE's mortgage revenue would further decrease to \$242.27m in 2019. From the year 2020, we expect mortgage business to rise again because of surge in refinance mortgage demands sparked by decrease in interest rate 2020 onwards. We expect mortgage business to rise by 5% YoY and \$294.428m in year 2023. On the bright side we project TREE's Non-mortgage business to increase further to \$682m in 2019 and \$1.28b in 2023. Our projection comes from the assumption that consumers for Non-Mortgage product going online would increase substantially over the years. On the other hand, revenue from non-mortgage product would increase further because of increase in non-mortgage products like student loans, auto loans, personal loans. Overall, we project TREE's total revenue to increase to \$773m by 2018-year end and \$924m by 2019-year end. We expect TREE's revenue to hit \$1b for the first time in 2020 and increase further to \$1.58b by 2023-year end.

### DRIVERS FOR COST

TREE allocates most of its expenditure on Sales and Marketing. On 2017, approximate 70% of its revenue was spent on sells and marketing which includes online marketing, newspaper, print and media advertisements, promotional events and compensation to employee involved in sells and marketing. We project total sells and marketing expense on 2018 to be \$484,390 which would be approximately 62% of its revenue. As TREE would always dynamically adjust this expense according to the revenue to generate consumer inquiries, we have set sells and marketing costs to 60% of revenue. TREE on an average has spent 11.29% of its revenues on General and Administrative costs which includes primarily of compensation and other employee-related costs (including stock-based compensation). We expect TREE to spend 13% of its revenue on an average through years 2022 due to increase in headcount and increased compensation to executives. As TREE identifies itself to be a Technology driven company, we expect TREE to spend 3.5% of its revenue on Product and Development due to increased reinvestment on technology usage and compensation to employees involved in it to improve consumer experience further. Amortization cost of Intangible assets increased from \$1.2m in 2016 to almost \$13m in 2017 due to acquisitions of SnapCap, MagnifyMoney, DepositAccounts in 2017 and CompareCards and SimpleTuition, Inc in 2016. Amortization costs in 2018 is expected to be \$19.89 m which is 53% rise over 2017. Company projects amortization cost to further rise to \$23m in 2019 and then decrease to \$5.3m in 2022. Depreciation cost in 2017 was almost \$7.085 m which is almost 43% more than 2016. We expect Depreciation cost in 2018 to be \$7.099m which is only 0.2% rise over 2017 but we do expect it to increase by 15% YoY on an average due to need of higher investment in software to support the growth of business and flux of online customers. Company incurred contingent consideration cost of \$23.9m in year 2017 due to acquisitions in that year. We expect change in contingent consideration for 2018 as \$3.3m and project 10% increase on an average YoY because of future acquisitions (if any). Restructuring and severance cost in 3 quarters of 2018 was \$2.331m due to acquisition of Student Loan Hero. As this expenditure is associated with acquisitions or when company plan restructuring of existing business, we can't project whether It will increase or decrease YoY. So, we have taken \$0.5m for year 2019 and increase by 10% YoY so that it accounts for aggregate severance cost in a whole through 2023. TREE incurred litigation cost \$10.6m on 2015 due to Zillow legal proceedings and then received \$0.6m in 2016. In 2018 company received \$0.28m



**Figure 11: Revenue Trend & Projection**

Years	EPS	Stock	P/E
2014	1.68	41.18	24.5119
2015	8	73.69	9.21125
2016	4.48	111.9	24.97768
2017	2.44	367.85	150.7582
2018	6.5	282.74	43.49846
2019	9.641902	310.18	32.17

**Table 8: Historical Results**  
(Source: SEC 10-k form)

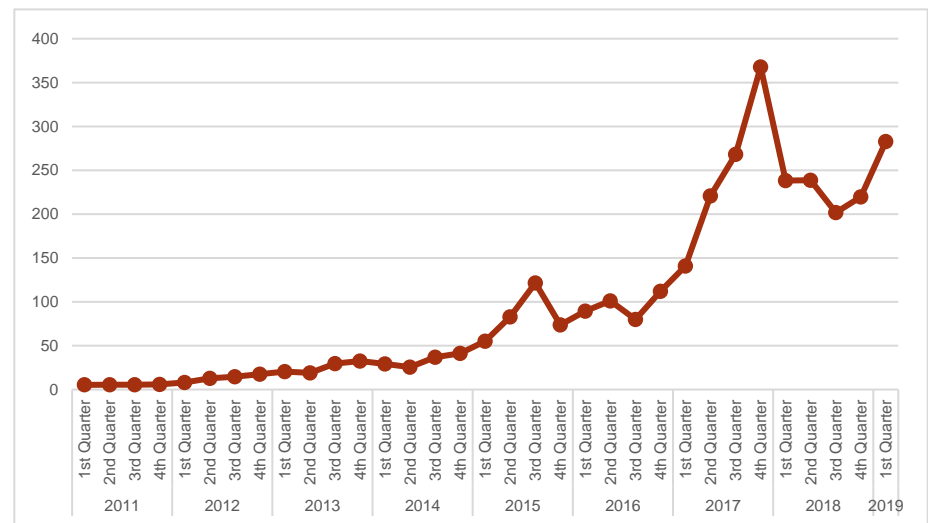
Financial Essentials	
P/E	43.53
EPS	6.5
Return on Assets	3.82
Return on Equity	7.39
Return on Total Capital	15.51
Return on Invested Capital	5.08
Total Debt to Total Equity	80.94
Long-Term Debt to Equity	80.94
Revenue/Employee	1,154,647.00
Income Per Employee	36,295.00
Enterprise Value to EBITDA	44.93
Enterprise Value to Sales	4.93
Total Debt to Enterprise Value	0.05

**Table 9: Financial Essentials**  
(Source: Marketwatch.com)

from litigations and we expect TREE to receive \$0.368m by year end. Our assumption includes double counting of 3<sup>rd</sup> quarter settlement to account for 4<sup>th</sup> quarter legal settlements. We have set costs related to litigations and settlement to \$0.3m for 2019 and then increase by 10% YoY so, that it accounts for all amounts paid and received through year 2022.

### RATIO ANALYSIS

Price to Earnings ratio of Lending Tree in the year 2018 is 43.53. P/E ratio of online banking sector is quite difficult to be found because not many companies specifically operates only as financial technology company. However, since lending tree indirectly faces competition with large banks as well as small banks in areas of mortgage loans as well as other products like student loans and personal loans. We can compare its P/E with banking sector which is around 25.16. Company's high P/E ratio indicates that investors are willing to pay higher for per dollar earning on share because of company's potential to grow more and provide better earnings in future time. If we will compare Earning per share of Lending Tree over the years from 2014 to now, we can see how company has managed to provide better returns to investors over the 6 years period. EPS on 2016 was just 1.68 which impressively increased to 8 in 2015. EPS decreased to 4.48 in 2016 because of company's reinvestment on increasing headcount of employees, technologies and purchase of companies like simpletuition and comparecard. In 2017, EPS further dropped to 2.44 because of company's reinvestment to purchase magnifymoney, depositaccount, snapcap. In 2018 EPS increased to 9.64 because of company's increased revenue from Non-mortgage business. Total Revenue per employee for year 2018 was \$1,154,647.00 according to marketwatch.com while average compensation for Lending Tree employee according to Payscale.com is \$73000. Its quite evident that Lending Tree utilizes its employees very efficiently. Income per employee for Tree is \$36,295.00 according to Marketwatch.com which is way better than its close competitor Lending club. Lending Club is making loss of \$83743 per employee according to marketwatch.com. Enterprise value (EV) to Earnings before interests, taxes, depreciation and amortization (EBITDA) ratio according to marketwatch.com is 44.93 which is quite healthy number when compared to its competitor, LendingClub which is -134.36. Total debt/Enterprise value of Lending Tree is 0.05 which shows that its debt is not that significant when compared to it's close competitor Lending Club which has ratio of 0.77.



**Figure 12: Seasonal Price Change over Years**  
(Source: Yahoo Finance)

### WACC Assumptions

WACC	Amount	Weight
Equity	376466	0.51
Debt	367173	0.49
Beta	1.7	
Rm-Rf	4.28%	
Cost of Equity	10.00%	
Cost of Debt	7.00%	
Tax Rate	27.50%	
After Tax Cost of Debt	5.08%	

### Target Price calculation using Discounted Cash Flow (DCF)

Company	Lending Tree
Ticker	TREE
Current Price	\$288.46
Terminal Growth Rate	3.00%
Market Risk Premium	7.00%
Risk-Free Rate	2.72%
WACC	7.57%
Fair Price	\$310.18
Appreciation	7.53%

### VALUATION METHODOLOGY

We have used following two methodologies to value future stock price:-

- Discounted Cash Flow (FREE CASH FLOW)
- Monte Carlo Simulation of Future Price

### DISCOUNTED CASH FLOW (FREE CASH FLOW)

The multifaceted lines of business of Lending Tree requires an equally sophisticated valuation approach, we have valued Lending Tree using Discounted Free Cash Flow to Firm ("DCF") model. We have made reasonable assumptions for each income statement line item to come with Forecasted Net Income. We then have forecasted change in working capital requirements based on rolling averages assumption and we have also projected capital expenses using increase in property plant and Equipment changes in balance sheet. Also, we are projecting all the numbers for 5 years from 2019 to 2023 and then we are taking terminal growth rate to come up with terminal free cash flow. The DCF model is based on the Company's historical performance, our evaluations of the industry outlook and the firm's competitive positioning, and management guidance. The accuracy of the projected stock price is dependent on the following modeling inputs:

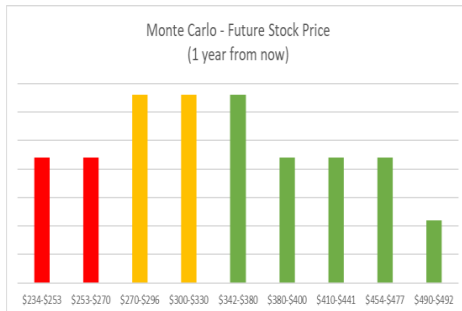
- Weighted Average Cost of Capital (WACC):** To fairly value Lending tree, we are discounting our projected Free Cash flow using WACC. We are using the balance sheet to come up with the weightage of equity and debt. Then we are using Market return and risk-free rate to come up with Market risk premium. Beta is being used from yahoo finance as a measure of systematic risk. Cost of debt is being used from firm's 10-Q report and Tax rate uses is 27.5% of the overall firm. Using all the information we are coming up with WACC=7.57%.
- Revenue Growth:** Revenue growth was bifurcated for the business i.e. into Mortgage products and Non Mortgage products. Mortgage products have showing a decline and we projected a revenue shrink of 10% in 2019 and then a stable rise of 5% for 4 years till 2023. Non-Mortgage products have been classified into credit card space, personal loans space, and other non-mortgage products. We projected a revenue growth of 20% in 2019 and then a stable rise of 10% for 4 years till 2023 for credit card business. We projected a revenue growth of 35% in 2019 and then a stable rise of 20% for 4 years till 2023 for personal loan business. We projected a revenue growth of 50% in 2019 and then a stable rise of 20% for 4 years till 2023 for other mortgage products. This growth has been phenomenal as they acquired a lot of new businesses.
- Terminal Value:** The terminal value was calculated using a reasonable forecast of entire business and we are using 3% terminal growth rate of free cash flow.
- Formula:** Following formula has been used for evaluating Free Cash Flow for Year 1 , hereby  $CF_1$  = Free Cash Flow at Year 1 and  $r$  = WACC:

$$DCF = \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} + \dots + \frac{CF_n}{(1+r)^n}$$

### Fair Value Calculation

\$ all numbers in thousands	2016	2017	2018*	2019	2020	2021	2022	2023	Terminal
<b>Projected Year</b>				1	2	3	4	5	
FCF	9876.00	7629.00	168569.93	43221.07	100036.14	114518.28	135817.98	161756.61	161756.61
Discount Factor				1.08	1.16	1.24	1.34	1.44	0.05
Discounted				40180.75	86457.37	92011.58	101448.93	112324.57	3648430.39
Cash	265194	(As on Sept 30, 2018)							
Enterprise Value	4080853.60								
Net Debt	101979	(Total Debt – Cash)							
<b>Fair Value</b>	<b>3978874.60</b>								





**Figure 12: Result of Monte Carlo Simulation - Future Stock Prices**



**Figure 13: Blue Sky and Grey Sky Scenarios**

## MONTE CARLO SIMULATION

We have projected the stock price for one year from now (T=252 days) using historical stock price whereby with variation of CAGR (compounded annual growth rate) alongside constant annual volatility of 53%. Since this is one 1 year from now, hence we have set the expectation level \$330 and above as BUY, which is evident from below that with 50% probability of finding the price greater than \$330. From the simulation results, we concluded that most sensitive variables in our model being the annual return and with uncertain cash flows, it's better to consider average of all the scenarios. But since 50% of the time, simulations suggests price will be >\$330, we have given a BUY Recommendation. (Appendix showcases results of all the simulation scenarios under monte carlo.)

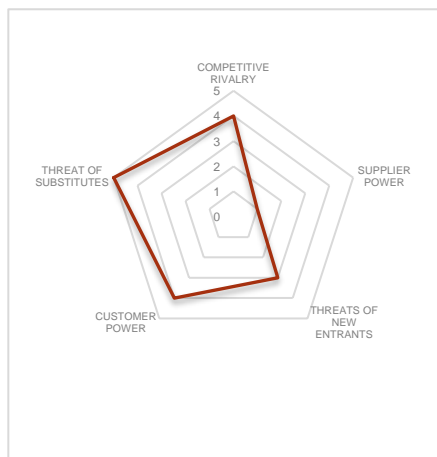
## Risks to Target Price

Our growth assumptions may not hold if unexpected strong industry decline will continue in 2020/21 or if Lending Tree will consider another acquisition as it will increase borrowing cost. Simple adjustments of valuation assumptions could significantly affect our target price and our BUY recommendation. To evaluate the impact of each major assumption we performed a simulation, as well as, a sensitivity analysis to closely study the impact of the discount rate and terminal growth rates (Fig. 14) as well as blue-grey sky scenarios (Fig. 13) on the target price.

- **Blue-Grey Sky Scenario:** Lending Tree is certain of its cash flows at least for 2019Yr and non-mortgage products will hedge the uncertainties created in the cash flows from mortgage product. But if in case mortgage products doesn't pick up and interest rate continues to rise impacting demand for credit card and person loans, stock can face the Grey Sky losing upto 21% and in optimistic scenario if mortgage products continues to grow from FY2020 by 10% YoY and so does credit card at aggressive rate of 20% YoY, stock can gain upto 25%.
- **Sensitivity Analysis:** Based on our insights we believe in Lending Tree's growing market share and end markets, so we consider it is essential that we perform a sensitivity analysis on these primary variables (Terminal Growth Rate & WACC) of the model. Given their aggressive approach of inorganic growth can increase the borrowing cost and terminal growth rate may immediately come down if interest rate continues to rise. Majority of the simulations shows BUY hence our recommendation.

WACC	6.00%	6.20%	6.40%	6.60%	6.80%	7.00%	7.20%	7.40%	7.60%	7.80%	8.00%
2.00%	21%	16%	11%	6%	2%	-2%	-5%	-8%	-11%	-14%	-17%
2.10%	24%	18%	13%	8%	4%	0%	-3%	-7%	-10%	-13%	-16%
2.20%	27%	21%	16%	11%	6%	2%	-2%	-5%	-8%	-11%	-14%
2.30%	30%	24%	18%	13%	9%	4%	0%	-3%	-7%	-10%	-13%
2.40%	34%	27%	21%	16%	11%	6%	2%	-1%	-5%	-8%	-11%
2.50%	38%	31%	24%	19%	13%	9%	4%	0%	-3%	-7%	-10%
2.60%	41%	34%	27%	21%	16%	11%	7%	2%	-1%	-5%	-8%
2.70%	46%	38%	31%	24%	19%	14%	9%	5%	1%	-3%	-7%
2.80%	50%	42%	34%	28%	22%	16%	11%	7%	3%	-1%	-5%
2.90%	55%	46%	38%	31%	25%	19%	14%	9%	5%	1%	-3%
3.00%	60%	50%	42%	34%	28%	22%	16%	11%	7%	3%	-1%
Terminal Growth Rate	Buy						Hold			Sell	

**Figure 14: Blue Sky and Grey Sky Scenarios**



**Figure 15: Porter's Five Forces Analysis for Lending Tree (1 = Very Low, 2 = Low, 3 = Moderate, 4 = High, 5 = Very High)**

## PORTER'S FIVE FORCES

- **COMPETITIVE RIVALRY- HIGH:** The intensity of rivalry among competitors in this industry is high. Competitors provides lower service fee and better products to loan shoppers. Moreover, competitors come up with varies of loan products including but not limited to personal loan, auto loan, and student loan.
- **SUPPLIER POWER – LOW:** Lenders are the company's suppliers. Lenders who are registered with the company are hoping to earn as many loaners as possible. In this case, lenders are not willing to exert business by raising prices, lowering quality, or reducing availability of their products.
- **THREAT OF NEW ENTRANTS – MODERATE:** Online mortgage industry is a profitable industry. Other new competitors are looking to achieve profits. Middle and small size banks can easily enter into this industry by expanding their business lines. There are nearly 4,900 banks in the United States, and almost 90% of them offer mortgage services. Although the potential number of new entrants is large, the profit level is still a big consideration to them.
- **CUSTOMER POWER – HIGH:** Borrowers are the company's customers. Borrowers who using the company's online mortgage service can exert on business to get them to provide higher quality products and lower prices.
- **THREAT OF SUBSTITUTES – VERY HIGH:** From a customer perspective, it is easy to

find a substitute of LendingTree. There are thousands of online mortgage websites. In addition, most major banks offer online mortgages. Bank of America, Chase, JPMorgan provides online channel for their mortgage services.

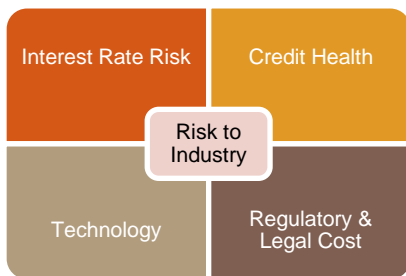


Figure 16 : Risk to the Industry



Figure 17: Risk to the Lending Tree

## RISKS

### RISK TO THE INDUSTRY

Online mortgage brokers industry is exposed to following set of risks:-

- **Interest Rate Risk:** Primary driver of the business is interest rate and industry is exposed to this risk. Demand for various business lines will get impacted, this is applicable for refinancing business, new mortgage loans, personal loans and credit card demand due to the hike in interest rate.
- **Credit Health:** Easy availability of Credit in US makes the loans products lucrative and so is business around the same. Also, borrowers with low FICO score are eligible for personal loans or other products though with high cost. Any regulation w.r.t. Credit Health will impact the revenue stream for the industry.
- **Technology:** With the advent of technology, this industry has shown rise in revenues. If there is a small increase in cost of online, internet broadband or mobile usage to the end users, industry will be impacted.
- **Regulatory & Legal Cost:** This industry as a whole has seen many mergers and acquisitions, thereby exposure to regulatory risk. Any Increase in time or money on legal proceedings and change in regulatory disclosures could impact profit margins.

### RISK TO THE COMPANY

Lending Tree, is exposed to following set of risks

- **Acquisition Cost:** Company has been acquiring new companies aggressively and is exposed to legal cost or others cost that might leads to steep rise in overall acquisition eroding profit margins estimates.
- **Competition:** With new acquisitions, company is adding further list of competitors and that's exposes to adopt to new challenges posed by similar business companies. Any failure to sense close competitors and their offerings will have adverse impact of customers leakage.
- **Technology:** Company has been investing in the new technologies and requires continuous innovation, thereby exposing to innovation risk.
- **Loss of Key Resources:** Key assets of Lending Tree are its resources who are driving innovation and attrition in the area of Technology and Marketing will have impact on growth rate in long term.

## INVESTING IN LENDING TREE VS FIXED INCOME

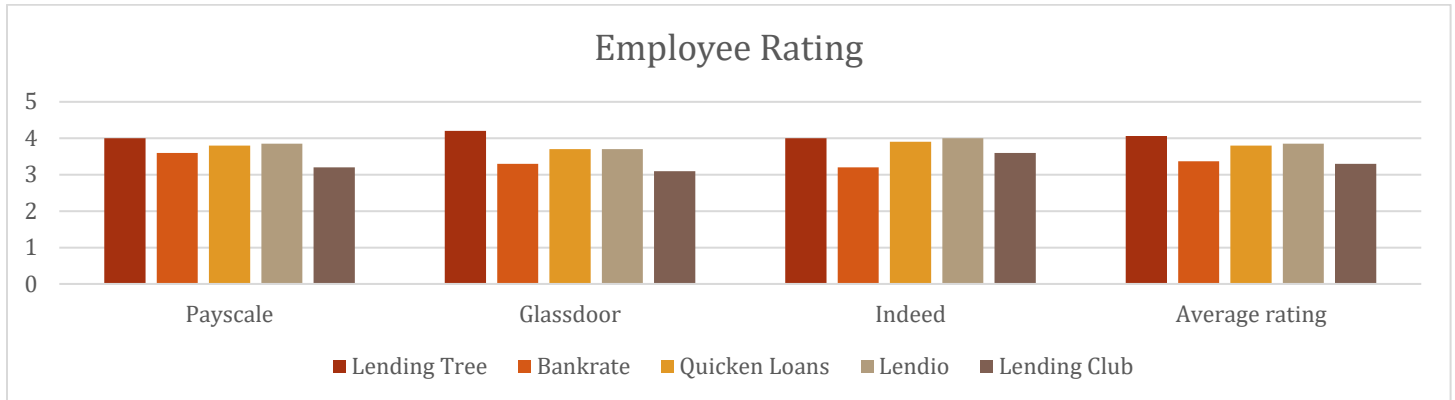
With one year time frame of investment, we have compared how we can better off investing in Lending Tree vis a vis One Year Treasury Bill. From the table, we can see more rate of return can be earned through investing in Lending Tree stock, further supporting our BUY recommendation. Though, there will be almost zero market risk in case of Treasury Bill.

INVESTING IN LENDING TREE VS FIXED INCOME				
	At T=0	At T=252 Days (Future Price through Monte Carlo)	Optimistic (\$350)	<u>Rate of Return</u> Conservative ( \$323)
1 Lending Tree Stock	\$288	\$323-\$350	21.53%	12.15%
1 Year Treasury Bill (@2.61%)	\$97.46	\$100.00	2.61%	2.61%

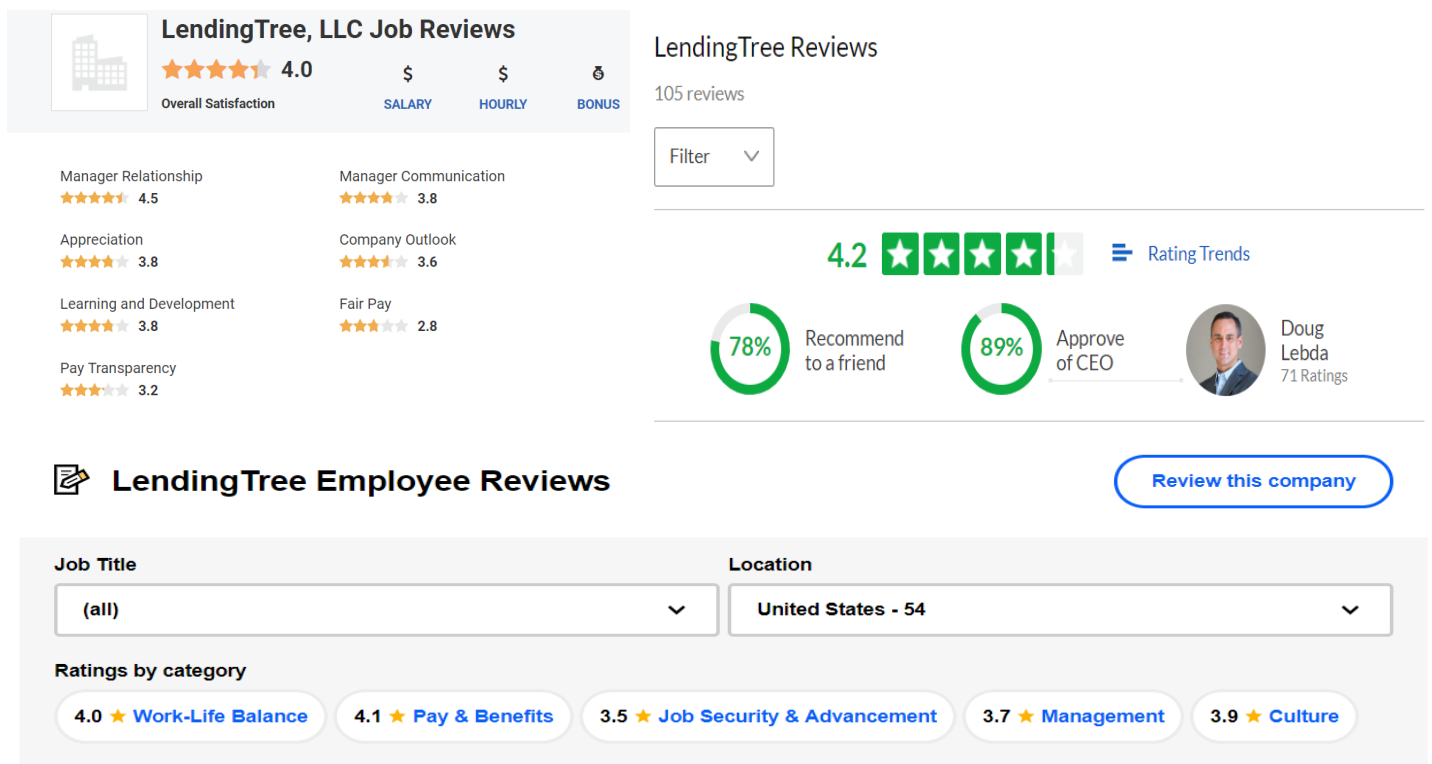
### Corporate Governance

- **Compensation philosophy:** The firm has a record of attracting and retaining highly qualified individuals with a demonstrated record of achievement from technology industry. Their compensation policy is to align the interest of shareholder with the compensation of senior executives.
- **Shareholder base:** The company has 12.8 million shares outstanding. On Feb 2018, the board of directors authorized and announced a stock repurchase program which allowed for the repurchase of up to \$10 million, \$10 million, \$50 million, \$100 million respectively, of their common stock. Among outstanding shares, 46.60% are mutual funds, 40.61% are other institutional, and 39.07% are individual stakeholders. Currently, the biggest shareholder of LendingTree is Baillie Gifford & Co which holds 10.84% of shares. Over the last 2 months, Nikko Asses Management Co., Ltd and William Blair Investment Management has increased its share by approximately 48% and 53.31%, significantly decrease the free-float. We believe that the high current level of free-float of 86% has negatively affected the liquidity of company's stock, making the stock price more resistant towards market transactions.

## APPENDIX 1: Employee Rating vis-à-vis Competition



## APPENDIX 2: Employee Satisfaction evident from Job Reviews



## APPENDIX 3

### CORPORATE GOVERNANCE

- **Douglas R. Lebda** is the CEO and founder of LendingTree. Douglas came up with this idea from his first mortgage. Douglas led the company through a successful IPO in 2000. Before founding LendingTree, Douglas works as an auditor and consultant for PriceWaterCoopers.
- **Neil Salvage** is the current President of LendingTree, and manages LendingTree's daily operations including sales, business development, and partner operations. Prior to joining Lending Tree in 2013, he served as Head of Digital Sales for CBS television and Radio.
- **J.D. Moriarty** is the Chief Financial Officer since June 2017 and responsible for strategic acquisitions. He spent over 22 years at Merrill Lynch and Bank of America as Head of America Equity Capital Market.
- **Paul Tyma** joined the LendingTree team at May 2016 as the Chief Technology Officer. He had experience at LinkedIn and Morgan Stanly. In addition, he spend 3 years at Google.
- **Nikul Patel** is the Chief Strategy Officer. He joined LendingTree in 2012 as SVP of Product. He worked at Intel Corporation for 12 years in various senior management roles involving technology products and services for the company.

- **Brad Wilson** joined LendingTree in July 2017 as Chief Marketing Officer. He takes care of brand strategy, marketing operations and consumer engagement across multi-brand and channels.
- **Carla Shumate** is the SVP, Chief Accounting Officer and Treasurer of the company. She served at this position since Jan 2013. Previously, Carla worked at PricewaterhouseCoopers LLP for 7 years.
- **Sam Mischner** is the Chief Sales Officer and Head of Mortgage. He brings LendingTree over a decade of lender side experience in addition to his expertise in client sales management. He joined the company in October 2013. Before that, he worked at Beneficial Mortgage Company and HSBC.
- **Sushil Sharma** serves as Chief Product Officer. He has more than 18 years of product management and utilizing algorithms and product innovation to connect more users with potential matches.
- **Jill Olmstead** is recently joined in September 2018 and serves as Chief Human Resources Officer. She had plenty valuable experience with Wells Fargo for 25 years.
- **Arun Sankaran** joined company at October 2018 as Chief Information Security Officer, brings 20 years of Information Security experience within the FinTech sector. He was a senior vice president of Bank of America.

Title	Name	Age	Salary	Bonus
Chairman and CEO	Mr. Douglas R. (Doug) Lebda	48	\$600,000.00	--
President	Neil Salvage	45	\$391,538.00	--
CFO	J.D. Moriarty	46	--	--
Chief Sales Officer and Head of Mortgage	Sam Mischner		--	--
Chief Product and Strategy Officer	Nikul Patel	45	\$318,615.00	--
SVP, Chief Accounting Officer and Treasurer	Carla Shumate		\$236,538.00	--
Chief Marketing Officer	Brad Wilson		--	--

#### Appendix 4: Monte Carlo Simulation (Future Price of Lending Tree – 1 yr from now)

	Annual Volatility	53.5%	53.5%	53.5%	53.5%	53.5%	Mean of the
	Annual CAGR	48%	30%	15%	0%	-15%	Simulation
Simulation	Percentile	<--Price one year (T=252 days) from now-->					\$ 345.37
1000	5%	\$ 440.13	\$ 367.60	\$ 316.01	\$ 272.87	\$ 234.67	
1000	95%	\$ 490.94	\$ 411.04	\$ 354.19	\$ 303.15	\$ 262.35	
1000	25%	\$ 454.65	\$ 380.80	\$ 326.96	\$ 281.70	\$ 242.40	
1000	75%	\$ 475.25	\$ 398.15	\$ 343.11	\$ 294.09	\$ 254.09	
2000	5%	\$ 440.27	\$ 368.35	\$ 315.73	\$ 273.40	\$ 234.59	
2000	95%	\$ 491.14	\$ 411.24	\$ 353.34	\$ 304.38	\$ 262.30	
2000	25%	\$ 455.34	\$ 380.03	\$ 327.11	\$ 281.91	\$ 242.66	
2000	75%	\$ 475.43	\$ 398.17	\$ 342.38	\$ 295.09	\$ 253.49	
3000	5%	\$ 439.21	\$ 368.49	\$ 317.04	\$ 273.02	\$ 234.97	
3000	95%	\$ 491.89	\$ 411.70	\$ 353.73	\$ 304.74	\$ 261.43	
3000	25%	\$ 454.43	\$ 380.66	\$ 327.07	\$ 281.76	\$ 242.67	
3000	75%	\$ 475.36	\$ 397.63	\$ 342.27	\$ 295.00	\$ 253.33	
4000	5%	\$ 440.48	\$ 367.96	\$ 316.80	\$ 272.75	\$ 234.42	
4000	95%	\$ 491.34	\$ 410.45	\$ 353.91	\$ 304.35	\$ 262.17	
4000	25%	\$ 454.95	\$ 380.59	\$ 327.75	\$ 282.02	\$ 242.40	
4000	75%	\$ 475.73	\$ 397.89	\$ 342.78	\$ 295.00	\$ 253.50	
5000	5%	\$ 440.46	\$ 368.32	\$ 317.55	\$ 273.10	\$ 234.49	
5000	95%	\$ 491.38	\$ 411.05	\$ 353.85	\$ 304.59	\$ 262.11	
5000	25%	\$ 455.20	\$ 380.04	\$ 327.52	\$ 282.12	\$ 242.53	
5000	75%	\$ 475.69	\$ 397.83	\$ 342.57	\$ 294.67	\$ 254.01	
6000	5%	\$ 440.83	\$ 368.50	\$ 317.24	\$ 272.66	\$ 234.94	
6000	95%	\$ 491.30	\$ 410.63	\$ 353.71	\$ 304.27	\$ 262.26	
6000	25%	\$ 454.80	\$ 380.07	\$ 327.36	\$ 282.01	\$ 242.62	
6000	75%	\$ 475.57	\$ 397.63	\$ 342.73	\$ 294.69	\$ 254.02	
7000	5%	\$ 440.12	\$ 368.30	\$ 317.29	\$ 273.13	\$ 234.73	
7000	95%	\$ 491.17	\$ 410.81	\$ 354.25	\$ 304.25	\$ 261.74	
7000	25%	\$ 454.31	\$ 380.60	\$ 327.64	\$ 281.80	\$ 242.57	
7000	75%	\$ 475.41	\$ 397.94	\$ 342.81	\$ 294.83	\$ 253.64	
8000	5%	\$ 440.77	\$ 368.13	\$ 317.30	\$ 272.78	\$ 234.82	
8000	95%	\$ 491.35	\$ 411.09	\$ 353.29	\$ 304.54	\$ 262.22	
8000	25%	\$ 455.05	\$ 380.49	\$ 327.38	\$ 281.77	\$ 242.57	
8000	75%	\$ 476.02	\$ 398.04	\$ 342.43	\$ 294.78	\$ 253.72	
9000	5%	\$ 440.98	\$ 368.06	\$ 317.41	\$ 272.98	\$ 234.82	
9000	95%	\$ 490.83	\$ 411.48	\$ 354.01	\$ 304.29	\$ 262.34	
9000	25%	\$ 454.75	\$ 380.19	\$ 327.73	\$ 281.88	\$ 242.52	
9000	75%	\$ 475.91	\$ 397.84	\$ 342.67	\$ 294.93	\$ 253.76	
10000	5%	\$ 439.89	\$ 368.10	\$ 317.02	\$ 272.93	\$ 234.63	
10000	95%	\$ 491.49	\$ 411.20	\$ 353.94	\$ 304.76	\$ 262.33	
10000	25%	\$ 454.20	\$ 380.31	\$ 327.70	\$ 281.73	\$ 242.57	
10000	75%	\$ 475.91	\$ 397.96	\$ 342.73	\$ 294.77	\$ 253.82	
100000	5%	\$ 440.13	\$ 368.27	\$ 317.03	\$ 272.85	\$ 234.83	
100000	95%	\$ 490.94	\$ 411.01	\$ 353.96	\$ 304.55	\$ 262.11	
100000	25%	\$ 454.65	\$ 380.29	\$ 327.51	\$ 281.89	\$ 242.56	
100000	75%	\$ 475.25	\$ 397.88	\$ 342.54	\$ 294.82	\$ 253.80	



Appendix 5: Correlation Matrix of Stock Price with different factor, highlighting that Stock Price has always moved with increase in internet users.

