Kenan–Flagler Business School
ALPHA CHALLENGE
The University of North Carolina

December 2nd, 2021

Students: Jake Wheelock, Rachita Jain, Scott Hall

LONG: Fair Isaac Corporation (NYSE: FICO)

Current Price (11/21/21): $358 | **1Y Price Target**: $444 (24% Return)

10Y Projected IRR: 15%

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Business Overview

Vital Organ of the U.S. Consumer Credit Ecosystem

Fair Isaac Corporation (NSYE: FICO) owns the proprietary algorithms behind the FICO score, the primary credit score used in U.S. consumer lending decisions. FICO also provides mission-critical software applications to banks and a customizable analytics platform for non-bank businesses.

1) <u>Scores (50% of revenue, 86% EBIT margin)</u>

❑ Business-to-Business (B2B)

- Receives a per-score royalty from the U.S. credit bureaus (Experian, Equifax, TransUnion) each time a credit report is sold to lenders
- Royalty rate depends on specific use case (origination pull = highest, account maintenance pull = lowest) but is $0.02-$0.03 on average

❑ Business-to-Consumer (B2C)

- Sells scores/services via myFICO.com, Experian, Equifax, and Discover

2) <u>Software (50% of revenue, 16% EBIT margin)</u>

❑ Applications

- Mostly on-premise, pre-configured
- Products = Falcon Fraud Manager, TRIAD, CCS

❑ Platform

- Primarily cloud-based, open-architecture
- Products = analytic decisioning platform that repurposes code used in scores algorithms and bank-specific applications (Falcon, TRIAD, CCS)

Trading and Operating Statistics	
IPO Date	July 22, 1987
Share Price ($)	**$ 357.51**
Shares Outstanding	27,358
Market Capitalization	**9,780,885**
Less: Cash & Equivalents	228,550
Add: Debt	1,259,018
Enterprise Value	**10,811,353**
Short Interest	1.9%
Average 3 Month Daily Volume	268,361
Average Holding Period in Months	4.7
52-Week Range	$352.73 - $553.97

Historical Financials	2017	2018	2019	2020	2021
Revenue	**932**	**1,033**	**1,160**	**1,295**	**1,317**
% Growth	*5.8%*	*10.8%*	*12.4%*	*11.6%*	*1.7%*
COGS	287	311	337	361	333
SG&A	340	380	414	421	396
R&D	111	128	150	167	171
EBIT	**194**	**213**	**260**	**346**	**417**
Margin	*20.9%*	*20.6%*	*22.4%*	*26.7%*	*31.6%*
D&A	36	30	32	30	26
EBITDA	**231**	**243**	**291**	**376**	**442**
Margin	*24.7%*	*23.6%*	*25.1%*	*29.1%*	*33.6%*
Capital Expenditures	20	31	24	22	8
% of Revenue	*2.1%*	*3.0%*	*2.1%*	*1.7%*	*0.6%*

Sources: Company Filings, FactSet, Yahoo Finance

Investment Thesis

3 Key Points

1

Scores:

Latent Pricing Power

2

Software:

Reinvestment Cycle is Complete

3

Management:

Disciplined Capital Allocation

Thesis #1

Scores: Latent Pricing Power

FICO has a long runway to raise the prices of its FICO scores. The company has only increased prices above the rate of inflation once – in FY 2018 – over the past 20+ years. We project 2.5% annual price increases and a 20% special price increase every five years.

- **Government-Sanctioned Monopoly in U.S. Consumer Credit-Scoring**

In 1995, Fannie Mae and Freddie Mac (GSEs) mandated that lenders use FICO scores to underwrite mortgages if they wanted to sell those mortgages to the GSEs. Today, 98.8% of all U.S. mortgage securitizations and 90% of overall consumer lending decisions incorporate FICO scores as measures of credit risk. The Federal Housing Finance Association (FHFA) – regulator of the GSEs since 2008 – has acknowledged that competition in credit ratings is potentially dangerous for the financial ecosystem because it promotes "score shopping."

- **Lenders Face High Switching Costs**

Lenders are discouraged from extracting FICO scores from the tangled webs of their underwriting and regulatory processes for fear of business disruptions or drawing the ire of the regulators. Relevant laws include: The Comprehensive Capital Analysis and Review (CCAR), Dodd-Frank Act Stress Tests (DFAST), and Equal Credit Opportunity Act (ECOA). The required incrementality hurdle to switching is high.

- **FICO Royalty is a Small Percentage of Credit Reports Costs**

On average, the FICO royalty is only ~10% of the cost of a credit report. And the credit report cost is a small fraction of lenders' total underwriting costs. Furthermore, in mortgage originations, the credit report fee is a small fraction of borrowers' total application fees.

	Historical										
U.S. B2B Credit Report-Related Revenue	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Equifax	765	934	1,085	1,105	1,171	1,237	1,263	1,247	1,277	1,483	1,592
Experian	716	791	873	961	1,125	1,237	1,341	1,484	1,468	1,642	1,761
TransUnion	451	496	506	546	602	678	777	765	849	940	1,053
Total Revenue	**1,932**	**2,221**	**2,463**	**2,611**	**2,898**	**3,151**	**3,381**	**3,496**	**3,594**	**4,064**	**4,406**
% Growth		14.9%	10.9%	6.0%	11.0%	8.7%	7.3%	3.4%	2.8%	13.1%	8.4%
FICO B2B Scores Revenue	118	123	127	131	145	169	182	235	302	382	447
FICO % of Credt Report Bundle	**6.1%**	**5.5%**	**5.1%**	**5.0%**	**5.0%**	**5.4%**	**5.4%**	**6.7%**	**8.4%**	**9.4%**	**10.1%**

Sources: Company Filings, FactSet Consensus Estimates

Thesis #2

Software: Reinvestment Cycle is Complete

FICO's software business has finally completed its on-premise to cloud re-platforming. Given the substantial standalone value of the Scores segment, we think that investors get FICO's transformed software business for free at the current market price.

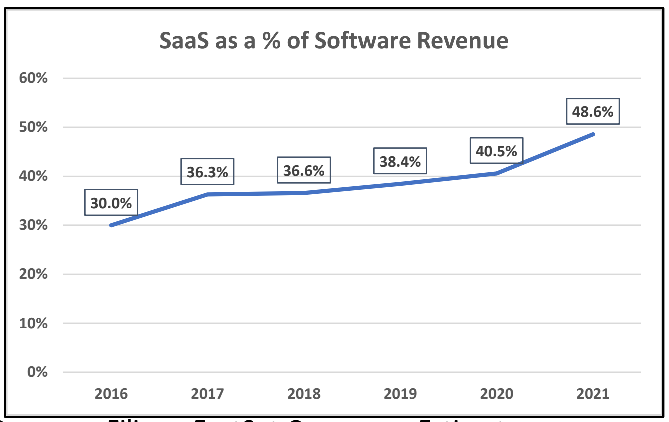
❑ **Bulk of On-Premise to Cloud Transition Spending is Complete + Platform Expands Addressable Market**

Over the past 5+ years, FICO's software business has gone through a heavy reinvestment phase to transform its legacy on-premise application products into a cloud-based analytics platform. As of the end of FY 2020, all major applications are finally available on FICO's proprietary cloud, AWS, and Azure. We expect segment EBIT margins to quickly trend from ~15% towards ~25%, which is what they were prior to the reinvestment phase. FICO employs only 150 quota carrying salespeople compared to thousands of product engineers and technical staff, so distribution is *not* the cost bottleneck here.

FICO's legacy on-premise software applications (Falcon Fraud Manager, TRIAD, and CCS) are pre-configured and typically only used by large banks. In contrast, businesses in a wide variety of industries (see Southwest Airlines customer win) can leverage FICO's cloud-based analytics platform because it allows for customization and flexible data sources, greatly expanding the addressable market.

❑ **New CFO and Additional Financial Disclosures**

Michael McLaughlin, who has a software banking background, was hired as CFO in late-2019. In Q4 2021, FICO began disclosing three new metrics – annual recurring revenue (ARR), annual contract value (ACV), and dollar-based net revenue retention (DBNRR). DBNRR for the *platform* part of the software business was 143% in the quarter, up from 118% just a year prior. We think that the disclosure, in and of itself, of these additional metrics is a good sign. Why unpeel the onion and give investors greater insight unless things are improving?



"Whenever the market or my board demands it, we would right away generate much higher margins. It's really a matter of slowing down some of the development work. We have very small sales force. Our sales and distribution force is small [150] relative to our size as a software company. Almost all the energy goes into product development and into cloud operations."
– William Lansing, FICO CEO, 2018 Barclays Technology Conference

Sources: Company Filings, FactSet Consensus Estimates

Thesis #3

Management: Disciplined Capital Allocation

<u>FICO management – CEO William Lansing, in particular – understand capital allocation and are good stewards of shareholder capital. We are confident that management will deploy capital such that shareholders' returns will closely track per share increases in FICO's value.</u>

- ❑ **<u>Disciplined Capital Allocation Track Record…</u>**

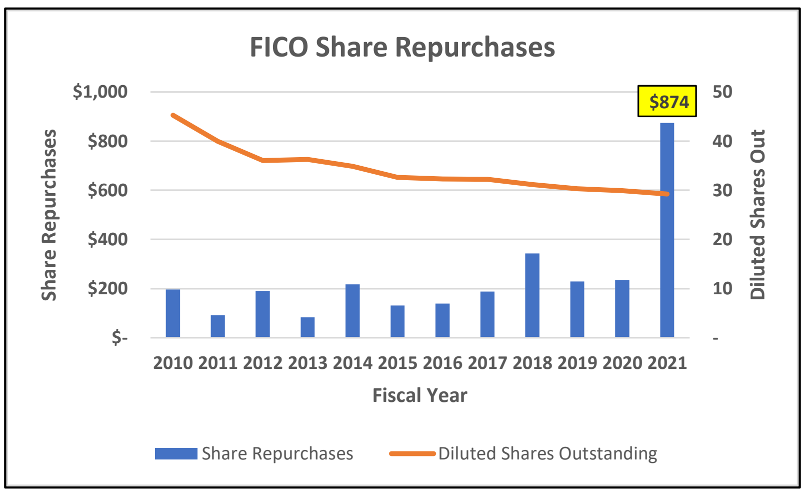
Management uses effectively all of FICO's free cash flow to repurchase shares, raises incremental debt to augment those repurchases (~2x Scores EBIT on average), and is slowly taking the company private. Over the last decade, FICO has reduced its share count by ~35%.

- ❑ **<u>…Despite Mediocre Operating Metrics for Performance Compensation (Revenue and EBITDA)</u>**

FICO has no per-share operating metrics in its performance compensation plan. However, we think management's capital allocation track record – which features more *divestitures* than acquisitions over the past five years – is even *more* impressive given this context.

- ❑ **<u>Unusual Magnitude of Share Repurchases in FY 2021</u>**

In FY 2021, FICO repurchased $882 million at an average price of $470. In FY 2020 and FY 2019, FICO repurchased just $235 million and $229 million, respectively. FICO does not include special price increases when it gives annual guidance, so we think that the recent repurchase surge suggests management sees additional latent pricing power that can be exercised within the next few years.



"We're levered up somewhat. We usually run somewhere north of 2 and south of 3 times EBITDA on leverage. We want to make sure that we're using the equity efficiently."
– William Lansing, FICO CEO, 2018 Barclays Global Technology Conference

"We want to run an efficient balance sheet and we're in love with our own business prospects. Every time we look at a potential acquisition, we ask ourselves, do we like that as much as our own business? And the answer is rarely yes. Our bias is strongly in favor of investing in our own business."
– William Lansing, FICO CEO, 2019 Barclays Global Technology Conference

Sources: Company Filings, FactSet Consensus Estimates

Valuation

Multiple Ways to Win

Investing in FICO should generate high returns over both short- and long-term investment horizons.

- **Short-Term (1 Year) = Multiples**

FICO currently trades at **24.1x NTM consensus earnings, 28.2% *lower* than its median multiple since the start of 2014**. Taking the NTM consensus earnings yield of 4.1% and assuming a 70% linear drift back to the median P/E multiple gets us to a **23.9% total return over the next year ($444 price target)**. We think that return beats any relevant index over the same time period.

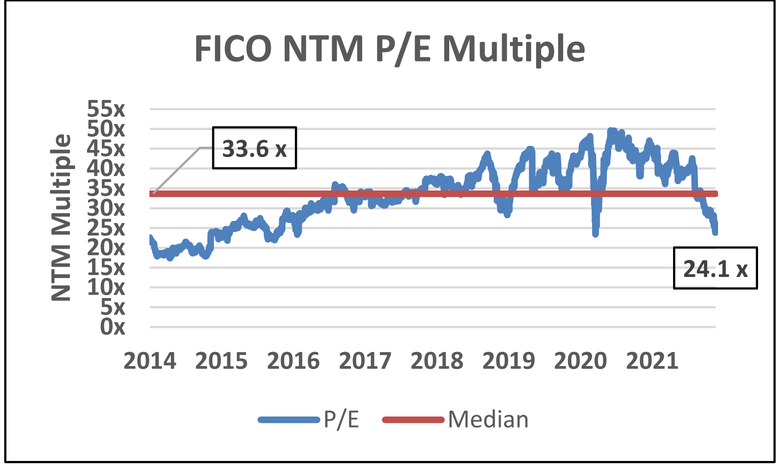
- **Long-Term (10 Years) = DCF Model + Comps**

We valued FICO's **Scores segment ($12.76 billion)** using a DCF model. Assumptions include: 3.5% scores volume growth, 2.5% annual price increases, 20% special price increases every five years, 20.0x terminal FCF multiple, and a 10% discount rate.

We valued FICO's **Software segment ($2.10 billion)** using an annual recurring revenue (ARR) multiple. Alteryx (NASDAQ: AYX) – FICO's closest standalone public comp – is valued at 7.8x ARR. The ten *lowest* multiple SaaS businesses in "SaaS Capital's" database trade from 4.1x to 6.7x ARR. We erred on the conservative side and gave FICO's Software segment – which is 48% SaaS – just a **4.0x ARR multiple**.

In total, we think a reasonable estimate of FICO's value is $14.86 billion, or ~$508 a share. On an IRR basis, FICO is priced to return 15.4% over the next ten years. See appendix slides for a detailed valuation model and comp tables.

FICO Valuation Summary	
Scores Value	12,760,016
Software Value	2,096,000
Total Value	**14,856,016**
Diluted Shares Outstanding	29,260.00
Value Per Share	**$ 507.72**
Current Price	**$ 358.00**
Price to Value	**70.5%**
IRR	**15.4%**



Sources: Company Filings, FactSet Consensus Estimates

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Risks

What Could Kill the “Golden Goose?”

1

Non-Renewal of FHFA Mortgage Origination Exclusivity

FHFA could allow VantageScore – owned by the three bureaus – to score GSE mortgages

<u>Mitigants</u>:
- VantageScore entered the market in 2006 but has had little impact on FICO pricing/volumes
- GSEs are currently using old FICO score versions built in the 1990s
- FHFA has acknowledged that giving the bureaus collective control over the *data and the algorithms* for scoring mortgage originations is potentially scarier than the status quo

2

Non-Bureau Credit Scoring Systems

Upstart Holdings (NASDAQ: UPST) could provide lenders with more predictive credit scores

<u>Mitigants</u>:
- Cross River Bank originates 67% of loans and accounts for 62% of UPST’s revenue
- 52% of traffic is sourced from Credit Karma (acquired by Intuit in December 2020)
- Skeptical that larger banks – which generate most of FICO’s scores volume – will outsource underwriting given entrenched interests and bureaucratic structures

3

Cyclicality in Scores Segment

Scores volumes are sensitive to U.S. credit activity (segment revenue fell ~15% in FY 2009)

<u>Mitigants</u>:
- No B2C revenue in FY 2009, which is less cyclical. Today, ~32% of scores revenue is B2C
- Higher interest rates will result in lower mortgage refinancing activity but will also increase FICO’s ability to raise prices on lenders, who will be generating more net interest income

“I've been at banks that have used the VantageScore, but I haven't been to one that uses VantageScore and doesn't do anything with FICO. It's not necessarily that we haven't used VantageScore, it just hasn't been exclusive use of it in my history with the scores.”
– Vice President at Citi, Credit Bureau Data Management (1/28/20 Tegus Interview)

Appendix Slides

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Appendix: Valuation Model (1)

Scores Segment

FICO Valuation (#'s in Thousands, FY 9/30)	FY 2019	FY 2020	FY 2021	Projected 2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
Scores														
B2B														
Revenue	302,103	381,929	446,538	473,721	502,559	533,152	565,608	717,120	760,774	807,087	856,218	908,340	1,151,662	
% Growth		26.4%	16.9%	6.1%	6.1%	6.1%	6.1%	26.8%	6.1%	6.1%	6.1%	6.1%	26.8%	
# Scores Pulled	13,000,000	13,500,000	14,000,000	14,490,000	14,997,150	15,522,050	16,065,322	16,627,608	17,209,575	17,811,910	18,435,327	19,080,563	19,748,383	
% Growth		3.8%	3.7%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	
Average Revenue per Score Pulled	0.0232	0.0283	0.0319	0.0327	0.0335	0.0343	0.0352	0.0431	0.0442	0.0453	0.0464	0.0476	0.0583	
% Growth		21.7%	12.7%	2.5%	2.5%	2.5%	2.5%	**22.5%**	2.5%	2.5%	2.5%	2.5%	**22.5%**	
Incremental EBITDA Margin				98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	
B2C														
Revenue	119,074	146,618	207,609	217,989	228,889	240,333	252,350	264,968	278,216	292,127	306,733	322,070	338,173	
% Growth		23.1%	41.6%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
	39.4%	38.4%	46.5%											
Incremental EBITDA Margin				60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	
Total Scores Revenue	**421,177**	**528,547**	**654,147**	**691,710**	**731,448**	**773,485**	**817,958**	**982,087**	**1,038,990**	**1,099,213**	**1,162,951**	**1,230,410**	**1,489,835**	
% Growth		25.5%	23.8%	5.7%	5.7%	5.7%	5.7%	20.1%	5.8%	5.8%	5.8%	5.8%	21.1%	
Operating Expenses														
Base Layer	59,323	73,620	92,796	95,580	98,447	101,401	104,443	107,576	110,803	114,127	117,551	121,078	124,710	
% Growth				3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
Incremental Layer				4,696	9,632	14,822	20,278	28,355	34,527	41,018	47,843	55,020	66,328	
% Growth				3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
Total Operating Expenses	59,323	73,620	92,796	100,276	108,080	116,223	124,721	135,931	145,331	155,145	165,394	176,098	191,038	
Segment EBITDA	**361,854**	**454,927**	**561,351**	**591,435**	**623,368**	**657,263**	**693,237**	**846,156**	**893,660**	**944,068**	**997,557**	**1,054,312**	**1,298,797**	
% Growth		25.7%	23.4%	5.4%	5.4%	5.4%	5.5%	22.1%	5.6%	5.6%	5.7%	5.7%	23.2%	
Margin	85.9%	86.1%	85.8%	85.5%	85.2%	85.0%	84.8%	86.2%	86.0%	85.9%	85.8%	85.7%	87.2%	
														Growth
Unallocated Corporate Expenses (50%)	113,864	119,193	124,635	128,374	132,225	136,191	140,277	144,486	148,820	153,285	157,883	162,620	167,498	**3.0%**
Depreciation	498	617	667	700	700	700	700	700	700	700	700	700	700	
Unallocated Corporate D&A (25%)	1,758	1,353	851	500	500	500	500	500	500	500	500	500	500	
Operating Income (EBIT)	**245,735**	**333,765**	**435,199**	**461,861**	**489,943**	**519,871**	**551,760**	**700,471**	**743,640**	**789,583**	**838,473**	**890,492**	**1,130,099**	
Net Debt	698,142	724,735	1,085,450	923,722	979,887	1,039,742	1,103,520	1,400,942	1,487,279	1,579,166	1,676,947	1,780,984	2,260,197	
Incremental Net Debt		26,593	360,715	(161,728)	56,164	59,856	63,778	297,422	86,338	91,887	97,780	104,038	479,213	
Net Interest Expense	39,752	42,177	40,092	46,186	48,994	51,987	55,176	70,047	74,364	78,958	83,847	89,049	113,010	
Effective Interest Rate	5.7%	5.8%	3.7%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
Times EBIT	2.8 x	2.2 x	2.5 x	2.0 x	2.0 x	2.0 x	2.0 x	2.0 x	2.0 x	2.0 x	2.0 x	2.0 x	2.0 x	
Pre-Tax Income	**205,983**	**291,588**	**395,107**	**415,675**	**440,949**	**467,884**	**496,584**	**630,424**	**669,276**	**710,625**	**754,626**	**801,443**	**1,017,089**	**Tax Rate**
Taxes				108,076	114,647	121,650	129,112	163,910	174,012	184,762	196,203	208,375	264,443	**26.0%**
Net Income				**307,600**	**326,302**	**346,234**	**367,472**	**466,514**	**495,264**	**525,862**	**558,423**	**593,068**	**752,646**	
Add: D&A				1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	
Add: Cash Flow from Incremental Net Debt				(161,728)	56,164	59,856	63,778	297,422	86,338	91,887	97,780	104,038	479,213	
Free Cash Flow				**147,072**	**383,666**	**407,290**	**432,450**	**765,135**	**582,801**	**618,950**	**657,404**	**698,305**	**1,233,058**	
Terminal Multiple													**20.0 x**	
Terminal Cash Flow													**24,661,169**	
Total Cash Flow				**147,072**	**383,666**	**407,290**	**432,450**	**765,135**	**582,801**	**618,950**	**657,404**	**698,305**	**25,894,227**	
Discount Rate			**10%**											
Scores Segment Value			**12,760,016**											

Appendix: Valuation Model (2)

Software Segment

Software		
	FY	**FY**
Annual Recurring Revenue (ARR)	**2020**	**2021**
Platform	47,700	75,200
Non-Platform	443,600	448,800
Total ARR	**491,300**	**524,000**
ARR Multiple		**4.0 x**
Software Segment Value		**2,096,000**

Appendix: Valuation Model (3)

Total FICO

FICO Valuation Summary	
Scores Value	12,760,016
Software Value	2,096,000
Total Value	**14,856,016**
Diluted Shares Outstanding	**29,260.00**
Value Per Share	**$ 507.72**
Current Price	**$ 357.57**
Price to Value	**70.4%**
IRR	**15.4%**

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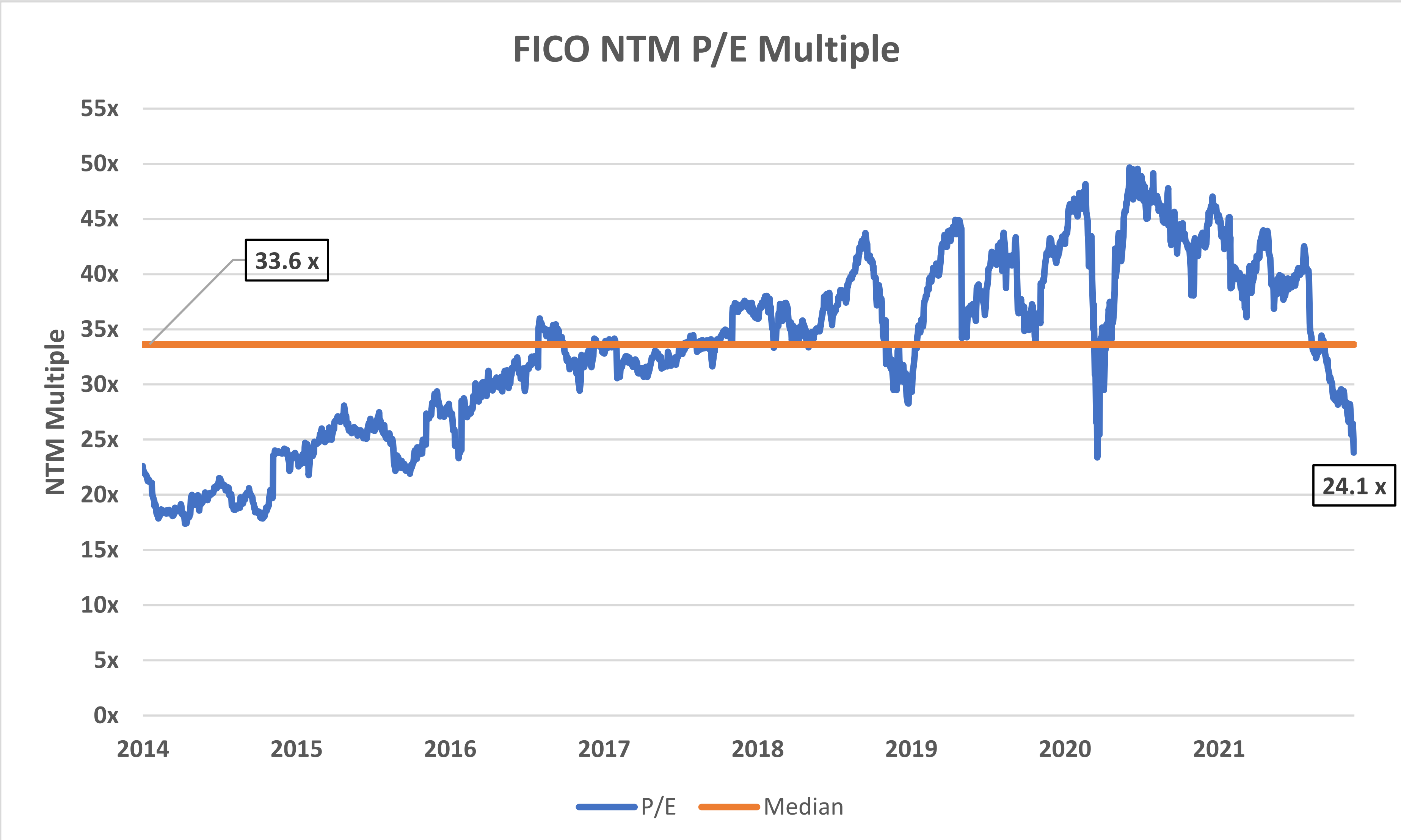
Appendix: Valuation Multiples

FICO Trades at ~28% Discount to its Median NTM P/E Multiple



Source: FactSet Consensus Estimates

Appendix: Key Dates

Fair Isaac Corporation (FICO)

1956: founded by Bill Fair and Earl Isaac
1987: files for IPO
1989: debuts first general-purpose FICO Score using data from U.S. credit bureaus
1995: Fannie Mae and Freddie Mac (GSEs) require FICO scores for conforming mortgage loans
2006: Experian, Equifax, and TransUnion create VantageScore, a joint venture between the three bureaus
2014: launches Decision Management Suite (DMS), a cloud-based analytics platform
2014: launches Open Access program
2015: partners with Experian to sell FICO scores in the B2C channel
2016: partners with Discover to provide free FICO scores to prospective borrowers
2018: starts implementing special price increases across mortgage, auto, and credit card scores

Federal Housing Finance Agency (FHFA)

2018: (December) issues a proposed set of rules for adopting alternative credit scoring models, including a provision that prohibits GSEs from using VantageScore because of conflicts of interest with the bureaus.
2019: (August) backtracks and announces that GSEs will be able to consider using new credit models after all, such as VantageScore and FICO's newer credit scores, if those models pass the FHFA's validation process.
2020: (February) GSEs publish the "Joint Enterprise Credit Score Solicitation."
2020: (November) announces GSEs will still require Classic FICO scores. In addition, alternative credit score models (effectively just VantageScore) submitted in response to the "Joint Enterprise Credit Score Solicitation" will continue to be evaluated as required by Section 310 of the Economic Growth, Regulatory Relief, and Consumer Protection Act.

Sources: Company Filings, myFICO.com, FHFA

Appendix: U.S. Consumer Credit Report Industry

GSEs (Conforming Mortgages)

Fannie Mae Freddie Mac

Lenders

WELLS FARGO CHASE citi DISCOVER

BANK OF AMERICA usbank Capital One

Pay ~$0.30 average per credit report

Send completed credit report with FICO score

High

Credit Bureaus

experian EQUIFAX TransUnion

Competition

FICO licenses applicable score

~$0.03 average royalty per score

Fair Isaac

FICO

Low

Appendix: FICO Score Calculation

Source: myFico.com

Appendix: Scores Segment

Scores Revenue Growing ~20% a Year

Open Access + B2C Partnerships	Special Price Increases for Mortgage/Auto/Card

Scores Segment	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Revenue	127,991	136,057	142,834	162,270	177,152	180,444	211,902	179,575	172,339	168,567	175,623	180,813	186,469	207,007	241,059	259,537	335,870	421,177	528,547	654,147
% Growth		*6.3%*	*5.0%*	*13.6%*	*9.2%*	*1.9%*	*17.4%*	*-15.3%*	*-4.0%*	-2.2%	4.2%	3.0%	3.1%	**11.0%**	**16.4%**	**7.7%**	**29.4%**	**25.4%**	**25.5%**	**23.8%**
Operating Expenses	58,505	62,281	66,384	66,750	64,739	65,127	68,264	57,373	61,688	55,169	52,687	51,781	44,187	55,793	55,975	54,369	63,452	59,821	74,237	93,463
Segment EBIT	69,486	73,776	76,450	95,520	112,413	115,317	143,638	122,202	110,651	113,398	122,936	129,032	142,282	151,214	185,084	205,168	272,418	361,356	454,310	560,684
Margin	54.3%	54.2%	53.5%	58.9%	63.5%	63.9%	67.8%	68.1%	64.2%	67.3%	70.0%	71.4%	76.3%	73.0%	76.8%	79.1%	81.1%	85.8%	86.0%	85.7%

Source: Company Filings

Appendix: FICO % of Credit Report Bundle

FICO Royalty Only ~10% of the Credit Report Bundle

	Historical											Valuation Model Projections									
U.S. B2B Credit Report-Related Revenue	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**
Equifax	765	934	1,085	1,105	1,171	1,237	1,263	1,247	1,277	1,483	1,592										
Experian	716	791	873	961	1,125	1,237	1,341	1,484	1,468	1,642	1,761										
TransUnion	451	496	506	546	602	678	777	765	849	940	1,053										
Total Revenue	**1,932**	**2,221**	**2,463**	**2,611**	**2,898**	**3,151**	**3,381**	**3,496**	**3,594**	**4,064**	**4,406**	**4,670**	**4,950**	**5,247**	**5,562**	**5,896**	**6,249**	**6,624**	**7,022**	**7,443**	**7,890**
% Growth		14.9%	10.9%	6.0%	11.0%	8.7%	7.3%	3.4%	2.8%	13.1%	8.4%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
FICO B2B Scores Revenue	118	123	127	131	145	169	182	235	302	382	447	474	503	533	566	717	761	807	856	908	1,152
FICO % of Credt Report Bundle	**6.1%**	**5.5%**	**5.1%**	**5.0%**	**5.0%**	**5.4%**	**5.4%**	**6.7%**	**8.4%**	**9.4%**	**10.1%**	**10.1%**	**10.2%**	**10.2%**	**10.2%**	**12.2%**	**12.2%**	**12.2%**	**12.2%**	**12.2%**	**14.6%**
Scores Revenue	169	176	181	186	207	241	260	336	421	529	654										
% B2B	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	71.7%	72.3%	68.3%										

Notes:
Blue = Company Filings
Green = Sell-Side Estimate

Sources: Company Filings, FactSet Consensus Estimates

Appendix: Software Segment

Accounting Change Obscures FY 2021 Results

Software Segment	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Revenue	264,427	493,301	563,372	631,401	648,213	603,744	588,026	499,114	433,304	451,116	500,800	562,631	602,516	631,774	640,297	665,815	689,827	738,906	766,015	662,389
% Growth		*86.6%*	*14.2%*	*12.1%*	*2.7%*	*-6.9%*	*-2.6%*	*-15.1%*	*-13.2%*	4.1%	11.0%	12.3%	7.1%	4.9%	1.3%	4.0%	3.6%	7.1%	3.7%	**-13.5%**
Operating Expenses	239,377	390,319	457,484	535,983	546,156	522,360	518,311	426,616	331,617	330,865	350,375	402,031	428,819	478,516	475,686	517,133	555,898	612,860	635,949	557,242
Segment EBIT	25,050	102,982	105,888	95,418	102,057	81,384	69,715	72,498	101,687	120,251	150,425	160,600	173,697	153,258	164,611	148,682	133,929	126,046	130,066	105,147
Margin	9.5%	20.9%	18.8%	15.1%	15.7%	13.5%	11.9%	14.5%	23.5%	26.7%	30.0%	28.5%	28.8%	24.3%	25.7%	22.3%	19.4%	17.1%	17.0%	15.9%

Accounting Change

Source: Company Filings

Appendix: New Software Disclosures

Definitions

ARR

A significant portion of revenue from our on-premises software subscriptions is recognized at a point in time under ASC 606, which creates variability period to period and differences in timing of revenue and billing. We use ARR (Annual Recurring Revenue) to measures the underlying performance of our subscription-based contracts. ARR is defined as the annualized revenue run-rate of on-premises and SaaS software agreements within a quarterly reporting period, and as such is different from the timing and amount of revenue recognized. All components of our software licensing and subscription arrangements that are not expected to recur (primarily perpetual licenses) are excluded. We calculate ARR as the quarterly recurring revenue run-rate multiplied by four.

ACV Bookings

ACV (Annual Contract Value) Bookings as the average annualized value of software contracts signed in the current reporting period that generate current and future on-premises and SaaS software revenue. We only include contracts with an initial term of at least 24 months and we exclude perpetual licenses and other revenues that are non-recurring in nature. For renewals of existing software subscription contracts we count only incremental annual revenue expected over the current contract as ACV Bookings. ACV Bookings replaces our previously-disclosed Total Contract Value Bookings.

DBNRR

DBNRR (Dollar-Based Net Retention Rate) is a measure of our success in retaining and growing revenue from our existing customers. To calculate DBNRR for any period, we compare the ARR at the end of the prior comparable quarter (base ARR) to the ARR from that same cohort of customers at the end of the current quarter (retained ARR); we then divide the retained ARR by the base ARR to arrive at the DBNRR. Our calculation includes the positive impact among this cohort of customers of selling additional products, price increases and increases in usage-based fees, and the negative impact of customer attrition, price decreases and decreases in usage-based fees during the period.

Source: FICO Q4 2021 Earnings Presentation

Appendix: New Software Disclosures

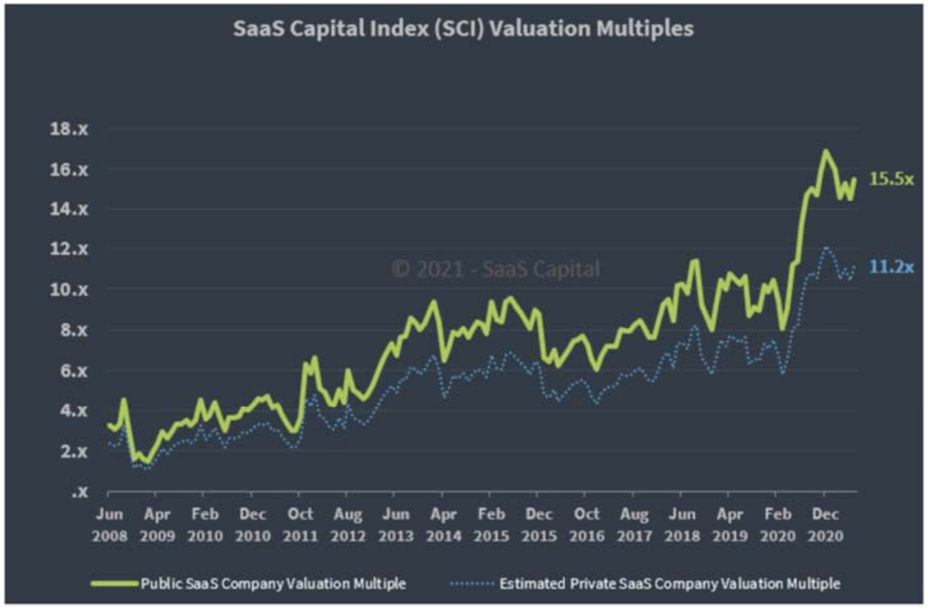
Historical Data

$ in Millions

Dollar-Based Net Revenue Retention (DBNRR)	**Q1 2020 December 31, 2019**	**Q2 2020 March 31, 2020**	**Q3 2020 June 30, 2020**	**Q4 2020 September 30, 2020**	**Q1 2021 December 31, 2020**	**Q2 2021 March 31, 2021**	**Q3 2021 June 30, 2021**	**Q4 2021 September 30, 2021**
Platform	**110%**	**112%**	**108%**	**116%**	**123%**	**130%**	**137%**	**143%**
Non-Platform	101%	103%	95%	96%	97%	96%	100%	100%
Total on-premises and SaaS software	103%	105%	98%	99%	100%	100%	105%	106%
Annual Recurring Revenue (ARR)								
Platform	**40.0**	**41.1**	**43.8**	**47.7**	**55.1**	**60.2**	**67.7**	**75.2**
Non-Platform	446.9	450.3	438.5	443.6	439.9	437.1	445.9	448.8
Total on-premises and SaaS software	486.9	491.4	482.3	491.3	495.0	497.3	513.6	524.0
ARR Breakdown								
Platform	**8%**	**8%**	**9%**	**10%**	**11%**	**12%**	**13%**	**14%**
Non-Platform	92%	92%	91%	90%	89%	88%	87%	86%
Total on-premises and SaaS software	100%	100%	100%	100%	100%	100%	100%	100%
ARR YoY Change								
Platform	**45%**	**48%**	**44%**	**45%**	**38%**	**47%**	**54%**	**58%**
Non-Platform	2%	5%	(3)%	(2)%	(2)%	(3)%	2%	1%
Total on-premises and SaaS software	5%	7%	-%	1%	2%	1%	7%	7%

Source: FICO 2021 10-K

Annual Recurring Revenue (ARR) Multiples



Analytics Public Comp (in millions)	ARR	Market Cap	ARR Multiple
Alteryx (NASDAQ: AYX)	579	4,500	7.8 x

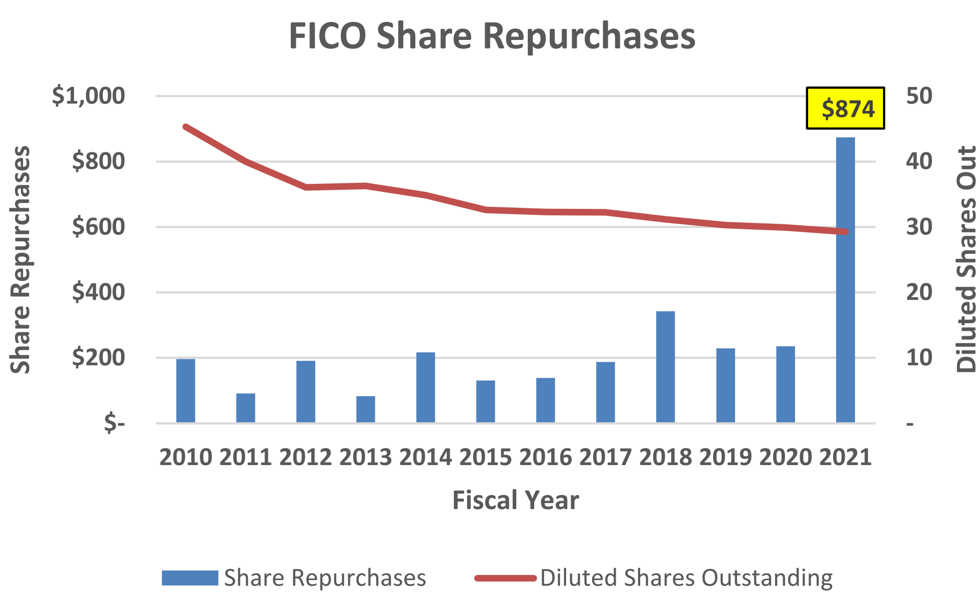
SaaS Capital Index Companies with the Lowest Multiples

Company	Multiple	YoY Multiple Change	YTD Multiple Change	Monthly Revenue	YoY Revenue Change	YTD Revenue Change	Stock Price	YoY Stock Price	YTD Stock Price
Cornerstone OnDemand	4.1x	0.6%	20.8%	$69.8M	39.4%	4.9%	$51.58	33.8%	17.1%
Upland Software	4.2x	37.2%	-5.5%	$24.7M	8.7%	-0.3%	$41.17	18.4%	-10.3%
FireEye	4.9x	62.5%	-5.6%	$82.1M	9.6%	3.3%	$20.22	66.1%	-12.3%
Yext	4.9x	-11.7%	-9.3%	$30.7M	7.8%	3.3%	$14.29	-14.1%	-9.1%
Cloudera	5.1x	13.0%	4.5%	$74.8M	6.6%	2.9%	$15.86	24.7%	14.0%
New Relic	6.x	-4.9%	1.4%	$58.6M	10.0%	5.8%	$66.97	-2.8%	2.4%
Mimecast Limited	6.5x	15.1%	-7.6%	$44.6M	17.2%	9.1%	$53.05	27.3%	-6.7%
Zuora	6.5x	31.9%	27.2%	$26.8M	8.7%	4.0%	$17.25	35.3%	23.7%
Talend SA ADR	6.7x	68.0%	51.3%	$26.6M	17.3%	9.9%	$65.60	89.3%	71.1%
Ping Identity	6.7x	-34.2%	-26.7%	$23.0M	12.3%	15.0%	$22.90	-28.6%	-20.1%

Sources: SaaS Capital, FactSet

Appendix: Share Repurchases

In Millions	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Share Repurchases	$ 196	$ 91	$ 191	$ 83	$ 217	$ 131	$ 138	$ 188	$ 343	$ 229	$ 235	**$ 874**
Diluted Shares Outstanding	45.31	39.99	36.06	36.29	34.86	32.61	32.31	32.24	31.18	30.29	29.93	29.26
% Change	-7.1%	-11.7%	-9.8%	0.6%	-3.9%	-6.5%	-0.9%	-0.2%	-3.3%	-2.8%	-1.2%	-2.2%



Sources: Company Filings, FactSet

Appendix: Management Compensation

Mediocre Performance Metrics, But Capital Allocation Has Been Good!

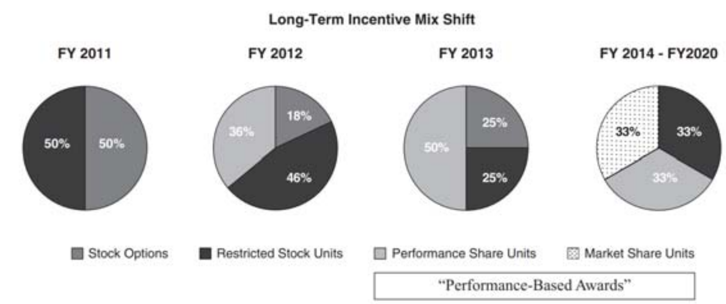
Financial Metric (Weighting)	Threshold Funding Level		Targeted Funding Level		Maximum Funding Level	Actual Performance
Adjusted Revenue (50%)	$1,180.0 million	$1,200.0 million	$1,245.0 million	$1,255.0 million	$1,265.0 million	$1,294.6 million
Adjusted EBITDA (50%)	$353.3 million	$379.2 million	$398.5 million	$400.2 million	$402.1 million	$463.1 million
Company Performance Factor	25%	50%	100%	112.5%	125%	125%

The proportion of each type of equity award granted in fiscal 2020 is broken down as follows:

Performance Share Units	*Market Share Units*	*Restricted Stock Units*
1/3	1/3	1/3

Financial Metric (Weighting)	Threshold Performance		Target Performance		Maximum Performance
Adjusted Revenue (50%)	$1,180.0 million	$1,200.0 million	$1,245.0 million	$1,255.0 million	$1,265.0 million
Adjusted EBITDA (50%)	$ 353.3 million	$ 379.2 million	$ 398.5 million	$ 400.2 million	$ 402.1 million
PSUs Earned (as percentage of target)	0%	50%	100%	150%	200%

Relative TSR Performance (Fiscal 2018, 2019 and 2020)	Relative Return Factor
+33.33% or greater	200%
+16.67%	150%
0%	100%
-12.5%	50%
-25% or less	0%



Name and Principal Position	Fiscal Year	Salary ($)	Bonus ($)	Stock Awards ($)[1][2]	Option Awards ($)[3]	Non-Equity Incentive Plan ($)[4]	Change in Pension Value and Non-Qualified Deferred Compensation Earnings ($)	All Other Compensation ($)[5]	Total ($)
William Lansing	2020	750,000	—	11,128,051	918,823	1,200,000	—	38,750	14,035,624
Chief Executive Officer	2019	750,000	—	6,352,443	2,993,617	1,200,000	—	49,197	11,345,257
	2018	750,000	—	10,255,714	—	1,200,000	—	41,767	12,247,481
Michael McLaughlin	2020	400,000	—	1,146,829	—	275,000	—	19,320	1,841,149
Executive Vice President and Chief Financial Officer	2019	53,846	—	5,077,041	—	45,000	—	197	5,176,084
Wayne Huyard	2020	500,000	—	3,782,767	—	350,000	—	21,738	4,654,505
Executive Vice President,	2019	500,000	—	3,057,111	—	375,000	—	21,245	3,953,356
Sales, Services and Marketing	2018	500,000	—	2,793,612	—	375,000	—	23,684	3,692,296
Claus Moldt	2020	500,000	—	3,782,767	—	350,000	—	30,415	4,663,182
Executive Vice President and Chief Technology Officer	2019	387,115	—	2,980,935	—	350,000	—	11,454	3,729,504
James Wehmann	2020	500,000	—	3,782,767	—	375,000	—	12,215	4,669,982
Executive Vice President,	2019	500,000	—	3,057,111	—	375,000	—	11,945	3,944,056
Scores	2018	500,000	—	2,793,612	—	375,000	—	11,070	3,679,682

Source: FICO 2021 Proxy Statement

ALPHA CHALLENGE Kenan-Flagler Business School The University of North Carolina

Appendix: Historical Management Guidance

Management Does NOT Include Special Price Increases in Guidance

FY 2020 (11/5/19 Guidance)	Guidance	Actual	Difference $	Difference %
Revenue	1,245	1,295	50	4.0%
Net Income (GAAP)	204	236	32	15.9%
Net Income (Non-GAAP)	251	292	41	16.4%
EPS (GAAP)	6.75	7.90	1.15	17.0%
EPS (Non-GAAP)	8.30	9.76	1.46	17.6%

FY 2019 (11/2/18 Guidance)	Guidance	Actual	Difference $	Difference %
Revenue	1,125	1,160	35	3.1%
Net Income (GAAP)	168	192	24	14.3%
Net Income (Non-GAAP)	209	228	19	8.9%
EPS (GAAP)	5.53	6.34	0.81	14.6%
EPS (Non-GAAP)	6.88	7.51	0.63	9.2%

FY 2018 (11/2/17 Guidance)	Guidance	Actual	Difference $	Difference %
Revenue	990	1,033	43	4.3%
Net Income (GAAP)	139	142	3	2.4%
Net Income (Non-GAAP)	171	194	23	13.6%
EPS (GAAP)	4.33	4.57	0.24	5.5%
EPS (Non-GAAP)	5.32	6.23	0.91	17.1%

FY 2017 (11/7/16 Guidance)	Guidance	Actual	Difference $	Difference %
Revenue	925	932	7	0.8%
Net Income (GAAP)	109	128	19	17.7%
Net Income (Non-GAAP)	158	158	(0)	-0.3%
EPS (GAAP)	3.39	3.98	0.59	17.4%
EPS (Non-GAAP)	4.92	4.89	(0.03)	-0.6%

Source: FactSet Consensus Estimates

Appendix: Ownership Table

Top 20 Holders	$ Value	% Shares Out
The Vanguard Group, Inc.	1,020	9.51%
BlackRock Fund Advisors	896	8.36%
BlackRock Advisors LLC	402	3.75%
Melvin Capital Management LP	372	3.47%
SSgA Funds Management, Inc.	347	3.24%
Wellington Management Co. LLP	331	3.09%
Valley Forge Capital Management LP	254	2.37%
Kayne Anderson Rudnick Investment Management LLC	246	2.30%
Neuberger Berman Investment Advisers LLC	239	2.23%
WCM Investment Management LLC	221	2.06%
BlackRock Investment Management (UK) Ltd.	221	2.06%
Geode Capital Management LLC	155	1.45%
AF Advisors, Inc.	142	1.33%
Northern Trust Investments, Inc.(Investment Management)	109	1.02%
LANSING WILLIAM J	108	1.01%
Geneva Capital Management LLC	100	0.93%
Credit Suisse Securities (USA) LLC (Broker)	100	0.93%
Eagle Asset Management, Inc.	94	0.87%
AKO Capital LLP	92	0.86%
Credit Suisse Asset Management (Schweiz) AG	88	0.82%
Total	**5,539**	**51.64%**

FICO Insiders	$ Value	% Shares Out
Lansing William J	108	1.01%
Scadina Mark Russell	42	0.39%
Battle A George	22	0.20%
Deal Richard Shawn	20	0.19%
Wehmann James M	14	0.13%
Kirsner James D	10	0.09%
Huyard Wayne E	9	0.08%
Kelly Braden R	3	0.03%
Moldt Claus	3	0.03%
Leonard Michael S	3	0.03%
Rees Joanna	3	0.03%
Mclaughlin Michael I	2	0.02%
Covert Stephanie	1	0.01%
Total	**241**	**2.24%**

Source: FactSet

Appendix: FICO Score Versions

Lenders are Slow to Adopt New FICO Score Versions (Especially Mortgage)

Experian	Equifax	TransUnion
Widely used versions		
FICO® Score 9 FICO® Score 8	FICO® Score 9 FICO® Score 8	FICO® Score 9 FICO® Score 8
Versions used in auto lending		
FICO® Auto Score 9 FICO® Auto Score 8 FICO® Auto Score 2	FICO® Auto Score 9 FICO® Auto Score 8 FICO® Auto Score 5	FICO® Auto Score 9 FICO® Auto Score 8 FICO® Auto Score 4
Versions used in credit card decisioning		
FICO® Bankcard Score 9 FICO® Bankcard Score 8 FICO® Score 3 FICO® Bankcard Score 2	FICO® Bankcard Score 9 FICO® Bankcard Score 8 FICO® Bankcard Score 5	FICO® Bankcard Score 9 FICO® Bankcard Score 8 FICO® Bankcard Score 4
Versions used in mortgage lending		
FICO® Score 2	FICO® Score 5	FICO® Score 4
Newly released version		
FICO® Score 10 FICO® Auto Score 10 FICO® Bankcard Score 10 FICO® Score 10T	FICO® Score 10 FICO® Auto Score 10 FICO® Bankcard Score 10 FICO® Score 10T	FICO® Score 10 FICO® Auto Score 10 FICO® Bankcard Score 10 FICO® Score 10T

Source: myFICO.com

Appendix: VantageScore Volumes

2019

CATEGORY OF USER	TOTAL USAGE OF VS CREDIT SCORES		
	# USED (MILLIONS)	% OF TOTAL	Δ SCORES (2019 VS.2018)
Credit card issuers	4,186	34%	-5%
Personal and installment loan companies	809	7%	+3%
Auto lenders	131	1%	+25%
Mortgage lenders	79	1%	-2%
Credit unions (not attributable to specific lines of business)[3]	35	~0%	+189%
Banks (not attributable to specific lines of business)[3]	2,206	18%	+121%
Subtotal: Financial Institutions	**7,445**	**60%**	**+17%**
Tenant screening, telecommunications, utility	67	1%	+295%
Consumer websites	3,073	25%	+35%
Government entities	877	7%	+392%
Other	854	7%	-44%
Subtotal: Non-Financial Institutions	**4,871**	**40%**	**+22%**
Total number of VS credit scores used	12,316	**100%**	**+19%**

2018

CATEGORY OF USER	TOTAL USAGE OF VS CREDIT SCORES		
	# USED (MILLIONS)	% OF TOTAL	Δ (2018 VS.2017)
Credit card issuers	4,410	42%	-11%
Personal and installment loan companies	787	8%	+5%
Auto lenders	105	1%	+77%
Mortgage lenders	81	1%	-4%
Credit unions (not attributable to specific lines of business)[4]	12	0%	-7%
Banks (not attributable to specific lines of business)[4]	996	10%	+82%
Subtotal: Financial Institutions	**6,391**	**61%**	**~0%**
Tenant screening, telecommunications, utility	17	0%	-53%
Consumer websites	2,277	22%	+66%
Government entities	178	2%	+61%
Other	1,529	15%	+113%
Subtotal: Non-Financial Institutions	**4,001**	**39%**	**+79%**
Total number of VS credit scores used	**10,392**	**100%**	**+20%**

Source: Oliver Wyman VantageScore Study (2019 and 2018)