

Financial Sector

SIM - Summer 2023

The Ohio State University

Andrew, Brady, Richard, Tejen, Vinay

Table Of Contents

- Overview
- Recap
- SIM Appraisal
- Buy/Sell thesis
- Recommendation
- Appendix

Overview

The FIS logo consists of the letters 'FIS' in a white, sans-serif font. Above the 'I' are three small white dots.The American Express logo features the words 'AMERICAN' and 'EXPRESS' stacked vertically in a white, bold, sans-serif font against a blue background.The Bank of America logo includes the text 'Bank of America.' in a blue, sans-serif font, with a red and blue striped flag icon below it.The Discover logo features the word 'DISCOVER' in a white, sans-serif font, with a stylized orange and yellow globe icon above the 'O'. Below the text is a large orange semi-circle.The J.P. Morgan logo features a blue, stylized octagonal icon above the text 'J.P.Morgan' in a black, serif font.The Citi logo features a red and white stylized arch above the word 'citi' in a blue, lowercase, sans-serif font.

Recap from prior sector recommendation

- **Goal:** further diversify to de-risk our sector, balance of risk and reward in uncertain environment
- Overweight Banks & Financial Services
- Maintain rating: Underweight (-1.33%)
- Trim 44 Bps of FIS
- Add 22 Bps of V
- Add 11 Bps of MA
- Add 11 Bps of AXP

Buying:



Hold:



J.P.Morgan



Bank of America



Selling:



PERFORMANCE

USD

TOTAL RETURN

GRAPH VIEW TABLE VIEW

As of Jul 20, 2023

9,748.10

13.50%

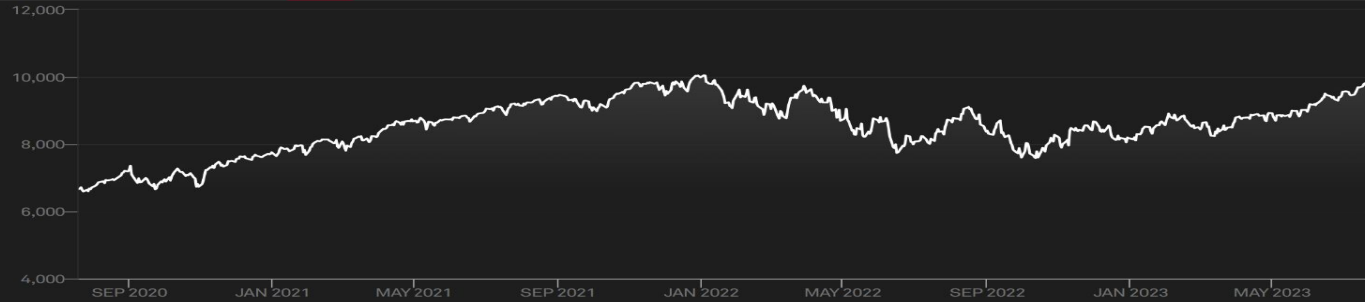
3 YR RETURN
Annualized

MTD QTD YTD 1 YEAR 3 YEAR 5 YEAR 10 YEAR

EXPORT ↻

COMPARE ⊕

SPICE ↗



GRAPH VIEW TABLE VIEW

As of Jul 20, 2023

1,083.26

16.38%

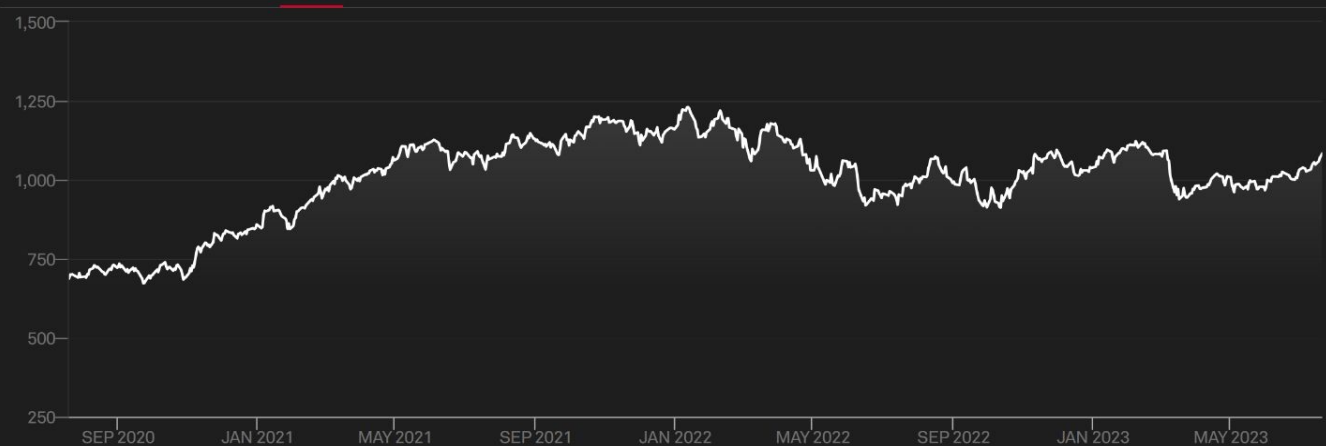
3 YR RETURN
Annualized

MTD QTD YTD 1 YEAR 3 YEAR 5 YEAR 10 YEAR

EXPORT ↻

COMPARE ⊕

SPICE ↗



SIM Appraisal - June 2023

Portfolio Appraisal Record
June 30, 2023

THE OHIO STATE UNIVERSITY
FISHER COLLEGE OF BUSINESS

Quantity	Security	Ticker	GIC Sector	Unit Cost	Total Cost	Market Price	Market Value	Unrealized Gain/(Loss)	Unit Income	Est. Ann. Income	%age Assets	Eq shares out
COMMON STOCKS												
3,730	ALPHABET INC	GOOGL	Communication	37.85	\$141,186.03	119.70	\$446,481.00	\$305,295	-	\$0.0	4.33%	5,941.000
2,380	AMAZON.COM INC	AMZN	Cons Discr	66.17	\$157,474.13	130.36	\$310,256.80	\$152,783	-	\$0.0	3.01%	10,260.350
1,400	AMERICAN EXPRESS CO	AXP	Financials	127.84	\$178,975.33	174.20	\$243,880.00	\$64,905	2.40	\$3,360.0	2.37%	743.241
5,100	AMPHENOL CORP	APH	Info Tech	78.25	\$399,065.32	84.95	\$433,245.00	\$34,180	0.84	\$4,284.0	4.20%	595.319
2,926	APPLE INC	AAPL	Info Tech	64.80	\$189,599.20	193.97	\$567,556.22	\$377,957	0.96	\$2,809.0	5.51%	15,728.700
6,390	BANK OF AMERICA CORP	BAC	Financials	29.68	\$189,680.12	28.69	\$183,329.10	(\$6,351)	0.88	\$6,134.4	1.78%	7,969.153
620	BOSTON PROPERTIES INC	BXP	Real Estate	118.88	\$73,704.30	57.59	\$35,705.80	(\$37,999)	3.92	\$2,430.4	0.35%	156.836
5,080	BRISTOL-MYERS SQUIBB CO	BMJ	Health Care	66.57	\$338,183.66	63.95	\$324,866.00	(\$13,318)	2.28	\$11,582.4	3.15%	2,100.847
1,660	CHEVRON CORP	CVX	Energy	146.02	\$242,397.60	157.35	\$261,201.00	\$18,803	6.04	\$10,026.4	2.53%	1,894.643
1,700	CITIGROUP INC	C	Financials	51.63	\$87,777.97	46.04	\$78,268.00	(\$9,510)	2.04	\$3,468.0	0.76%	1,946.752
1,520	DISCOVER FINANCIAL SERVICES	DFS	Financials	112.38	\$170,823.02	116.85	\$177,612.00	\$6,789	2.80	\$4,256.0	1.72%	253.946
1,620	DUPONT DE NEMOURS INC	DD	Materials	57.21	\$92,682.47	71.44	\$115,732.80	\$23,050	1.44	\$2,332.8	1.12%	459.017
770	ELEVANCE HEALTH INC	ELV	Health Care	453.51	\$349,201.50	444.29	\$342,103.30	(\$7,098)	5.92	\$4,558.4	3.32%	237.056
2,050	FEDEX CORP	FDX	Industrials	159.97	\$327,932.03	247.90	\$508,195.00	\$180,263	5.04	\$10,332.0	4.93%	251.352
4,390	FIDELITY NATIONAL INFORMATION	FIS	Financials	122.99	\$539,909.51	54.70	\$240,133.00	(\$299,777)	2.08	\$9,131.2	2.33%	592.437
7,490	GENERAL MOTORS CO	GM	Cons Discr	29.54	\$221,276.49	38.56	\$288,814.40	\$67,538	0.36	\$2,696.4	2.80%	1,390.123
1,510	JPMORGAN CHASE & CO	JPM	Financials	150.23	\$226,848.75	145.44	\$219,614.40	(\$7,234)	4.00	\$6,040.0	2.13%	2,922.289

Securities Allocation				
Sector	S&P 500 Weight	SIM Weight	+/-	
Information Technology		28.26%	27.04%	-1.22%
Health Care		13.42%	15.18%	1.76%
Financials		12.42%	11.09%	-1.33%
Consumer Discretionary		10.66%	8.11%	-2.55%
Consumer Staples		6.67%	8.83%	2.16%
Industrials		8.49%	8.26%	-0.23%
Energy		4.11%	6.46%	2.35%
Utilities		2.58%	0.86%	-1.72%
Materials		2.50%	3.18%	0.68%
Communication Services		8.39%	10.64%	2.25%
Real Estate		2.49%	0.35%	-2.14%
Total		100.00%	100.00%	0.00%

American Express (AXP) Overview



American Express Company is an integrated payments company that provides charge and credit card products, network services to processes and settle transaction, and travel related services to consumers and business customers around the world.

Three Primary Businesses:

1. Card Issuing Business
2. Merchant Acquiring Business
3. Card Network Business

Four Operating Segments:

1. U.S Consumer Services
2. Commercial Services
3. International Card Services
4. Global Merchant and Network Services

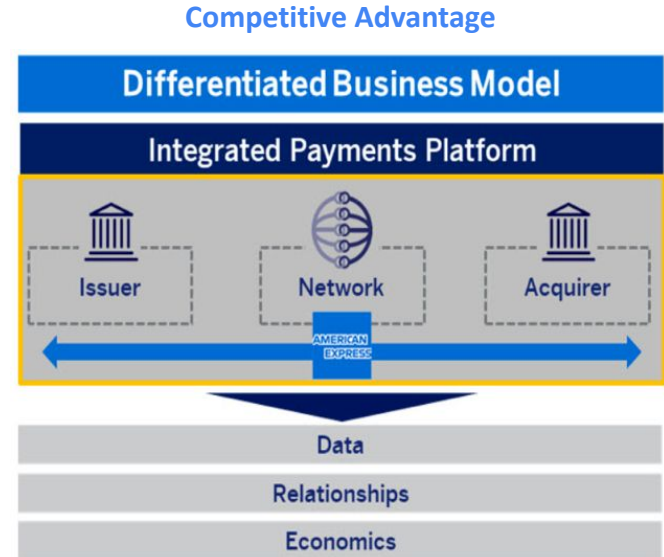


Figure 1: American Express's Differentiated Business Model.
Source: American Express Co. Form 10-K; Dec 31, 2022

American Express (AXP) Market Share

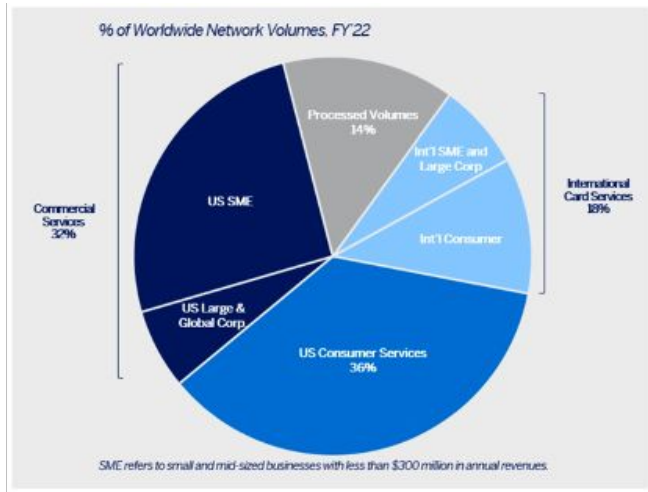


Figure 2: American Express's Worldwide Network Volumes in 2022
Source: American Express Co. Form 10-K; Dec 31, 2022

Credit Card Purchase Volume in 2022 (\$B)

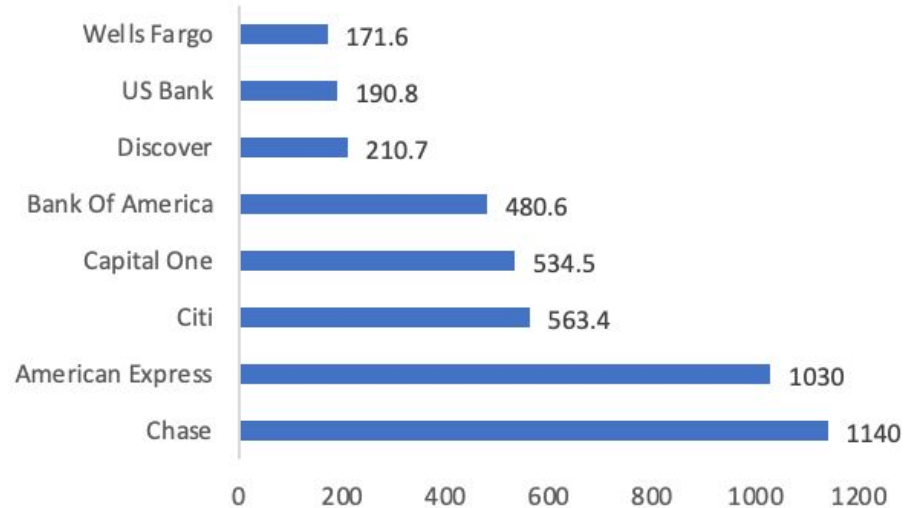


Figure 3: Credit Card Purchase Volume in 2022
Source: US News. The Biggest US Credit Card Companies (Nilson Report)

American Express (AXP) Business Analysis



Growth Drivers

- **Expansion into Asia-Pacific Market:**
 - This market is projected to be the fastest growing worldwide at 9% CAGR.
- **New Premium Customer Acquisition:**
 - Millennial and Gen Z customers are the fastest growing cohort in terms of spending the United States.
- **Acquisition of Fintech:**
 - Purchase of Resy, Kabbage, Nipendo have attracted small business customers to the American Express Platform.

Headwinds

- **Federal Interest Rates**
 - AXP has \$40B in long-term debt and cost to service this debt will rise with higher interest rates
 - However, higher interest rates will also increase its net interest income.
- **Loan Reserve and Delinquencies**
 - Restarting student loan payments, combined with higher interest rates is projected to result in higher delinquencies
 - AXP is projected to increase its provision for credit losses to \$4B this year, negatively affecting its earnings

American Express (AXP) Financials



Source: Apple Stocks App

Takeaways:

- Shift towards Millennials and Gen Z customers
- Card Member Spending up 30% YoY
- Share price has risen 15.7% YTD
- Revenue and Profits projected to increase by ~15% annually over the next 5 years

Sector: Financial

Industry: Consumer Finance

Market Cap: \$127.62 B

Shares Outstanding: 743.24 M

Dividend Yield: 1.41%

Beta: 1.19

Current Price: 170.22

52 Week High - Low: 182.15 - 130.65

Current Sim Weight: 237 BPS

American Express (AXP) Competition



	Price	Market Cap (\$B)	Quarterly Revenue Growth (YoY)	Quarterly Earnings Growth (YoY)	Operating Margin	Forward Annual Dividend Yield	Return on Equity (TTM)	P/E	P/B	P/S
AmEx	174.64	127.62	12.40%	-13.50%	18.37%	1.40%	29.90%	18.36	4.91	2.34
Visa	240.55	498.8	11.10%	16.70%	66.94%	0.76%	42.35%	32.16	12.93	16.22
Mastercard	397.8	371.62	11.20%	-10.30%	56.92%	0.58%	154.10%	39.78	69.72	16.58
PayPal	70.62	77.3	8.60%	56.20%	15.87%	N/A	13.37%	28.48	3.89	2.83
Discover	119.49	30.09	-3.50%	-21.40%	50.92%	2.39%	29.74%	8.04	2.27	2.27

Source: Yahoo Finance

Takeaways:

- 11-12% revenue growth for American Express, Visa and Mastercard
- American Express quarterly earnings growth was negative due to increased provision for credit losses
- American Express has the highest dividend yield
- MasterCard has highest ROE due to lower level of debt and managing the equity through buyback.



American Express (AXP) Valuation

Absolute Basis	High	Low	Average (5 yrs)	Current
P/E	29.93	12.55	19.46	18.36
P/B	5.19	3.16	4.59	4.91
P/S	3.31	2.1	2.59	2.34

Source: <https://www.morningstar.com/stocks/xnys/axp/valuation>

American Express (AXP) Valuation

Growth Rate: 3.5%

Discount Rate: 8.5%

Target Price: \$202.53

Implied Upside: 19%

Recommendation: **BUY**

Risk to Investment Thesis

- Transitory Post-Covid Travel Spending Boost
- Credit Losses and Delinquencies

American Express (AXP)												
Analyst: Tejen Shah 6/6/23 (000s)												
						Terminal Discount Rate = 8.5%						
						Terminal FCF Growth = 3.5%						
Year	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	
Non Interest Revenues	\$ 49,842	\$ 54,826	\$ 60,308	\$ 66,038	\$ 71,651	\$ 77,025	\$ 82,031	\$ 87,363	\$ 93,042	\$ 98,159	\$ 103,067	
% Growth		10.0%	10.0%	9.5%	8.5%	7.5%	6.5%	6.5%	6.5%	5.5%	5.0%	
Interest Income	\$ 14,683	\$ 16,152	\$ 17,767	\$ 19,151	\$ 20,779	\$ 22,337	\$ 23,789	\$ 24,899	\$ 26,517	\$ 27,975	\$ 29,374	
% Non-Interest Revenue		29.5%	29.5%	29.0%	29.0%	29.0%	29.0%	28.5%	28.5%	28.5%	28.5%	
Interest Expense	\$ 3,226	\$ 3,549	\$ 3,904	\$ 4,623	\$ 5,016	\$ 5,777	\$ 6,152	\$ 6,989	\$ 7,443	\$ 8,344	\$ 8,761	
% Non-Interest Revenue		6.5%	6.5%	7.0%	7.0%	7.5%	7.5%	8.0%	8.0%	8.5%	8.5%	
Provision for Losses	\$ 4,000	\$ 4,000	\$ 4,000	\$ 4,259	\$ 4,621	\$ 4,968	\$ 5,503	\$ 5,838	\$ 6,576	\$ 6,937	\$ 7,284	
%Sales		6.2%	5.6%	5.1%	5.0%	5.00%	5.00%	5.20%	5.20%	5.50%	5.50%	
Expenses	\$ 48,071	\$ 53,091	\$ 58,556	\$ 63,892	\$ 69,322	\$ 74,522	\$ 79,365	\$ 84,197	\$ 89,669	\$ 94,601	\$ 99,331	
% Sales		74.5%	74.8%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	
Income Tax Provision	\$ 2,030	\$ 2,274	\$ 2,555	\$ 3,748	\$ 4,067	\$ 4,372	\$ 4,819	\$ 5,112	\$ 5,595	\$ 5,903	\$ 6,198	
Tax Rate		22.0%	22.0%	22.0%	22.0%	22.0%	23.0%	23.0%	24.0%	24.0%	24.0%	
Net Income	7,198	8,063	9,060	8,667	9,403	9,724	9,981	10,126	10,275	10,350	10,867	
% Growth		12.0%	12.4%	-4.3%	8.5%	3.4%	2.6%	1.5%	1.5%	0.7%	5.0%	
Free Cash Flow	7,198	8,063	9,060	8,667	9,403	9,724	9,981	10,126	10,275	10,350	10,867	
% Growth		12.0%	12.4%	-4.3%	8.5%	3.4%	2.6%	1.5%	1.5%	0.7%	5.0%	
NPV of Cash Flows	62,126	38%										
NPV of terminal value	99,492	62%									Terminal Value	
Projected Equity Value	161,618	100%										
Free Cash Flow Yield	5.30%										Free Cash Yield	
											4.83%	
Current P/E	18.9	16.8	15.0								Terminal P/E	
<i>Projected P/E</i>	22.5	20.0	17.8								20.7	
Current EV/EBITDA	N/A	N/A	N/A								Terminal EV/EBITDA	
<i>Projected EV/EBITDA</i>	N/A	N/A	N/A								N/A	
Shares Outstanding	798											
Current Price	\$ 170.22											
Implied equity value/share	\$ 202.53											
Upside/(Downside) to DCF	19.0%											
						Sensitivity Analysis		Terminal Discount Rate				
						\$184.31	7.5%	8.0%	8.5%	9.0%	9.5%	10.0%
						3.30%	\$244.13	\$218.34	\$197.50	\$180.31	\$165.89	\$153.62
						3.40%	\$248.26	\$221.49	\$199.97	\$182.28	\$167.48	\$154.93
						3.50%	\$252.59	\$224.78	\$202.53	\$184.31	\$169.13	\$156.27
						3.60%	\$257.14	\$228.22	\$205.20	\$186.43	\$170.83	\$157.66
						3.70%	\$261.93	\$231.82	\$207.97	\$188.62	\$172.59	\$159.09



Mastercard (MA)

MA chart >



Sector: Financial

Industry: Credit Services

Market Cap: \$ 376 B

Shares Outstanding: 947.63 M

Dividend Yield: 0.57%

Beta: 1.11

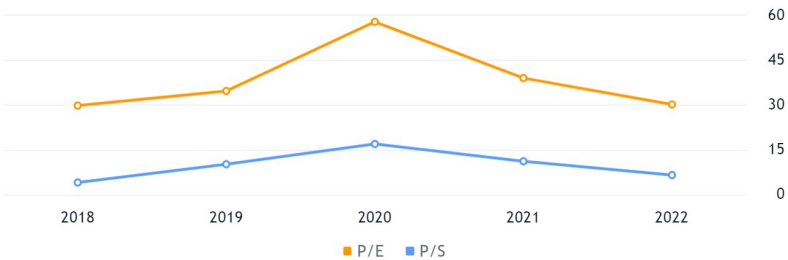
Current Price: 397.49

52 Week High - Low: 404.0 - 276.87

Current Sim Weight: 0 BPS



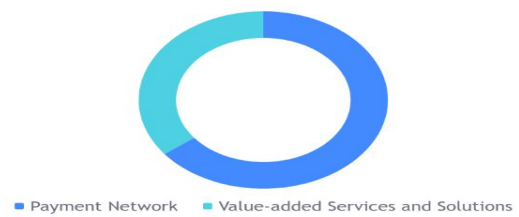
Valuation ratios ?



Revenue breakdown >

Revenue streams and regions a business earns money from

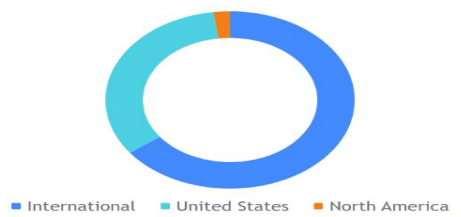
By source/business ?



Period: 2022

By country ?

Period: 2022



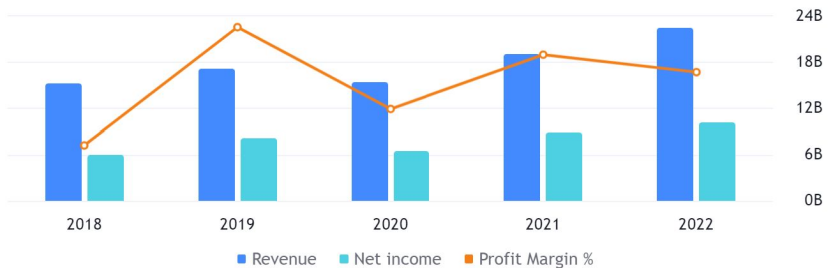
	Type	Rating	Outlook
Fitch Ratings ^[3]	CRA	n.r.	n/a
Moody's Investors Service ^[4]	CRA	A1	Stable
S&P Global Ratings ^[5]	CRA	A+	Stable



Growth and profitability >

Company's recent performance and margins

Performance ?



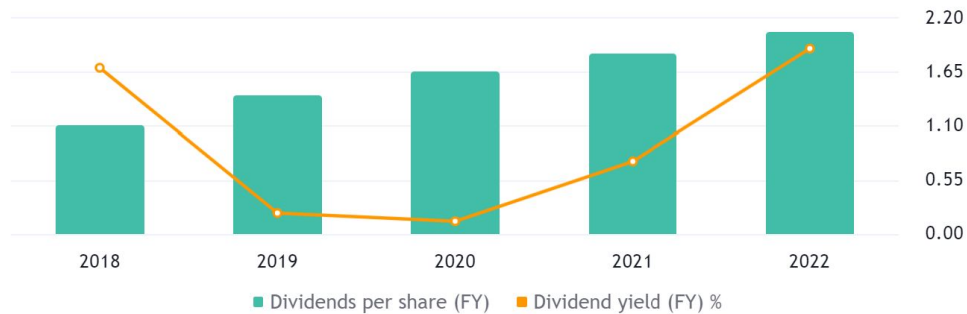
Estimates >

Revenue and Earnings forecasts and estimates accuracy

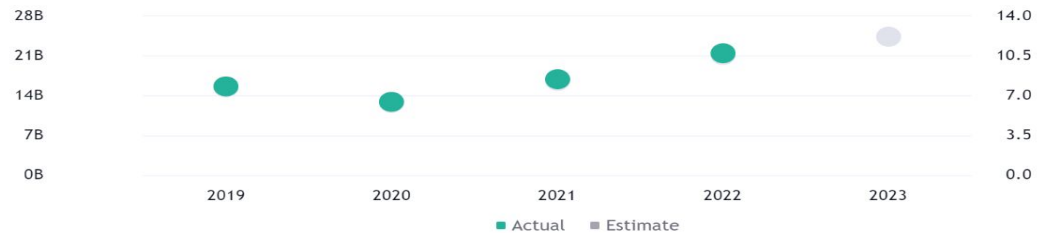
Revenue ?



Dividend history ?



Earnings ? Next: Feb 01





mastercard

Back to basics

Strengths:

- Second most used card platform
- Outstanding profit margin (41%)
- Established global footprint
- Obsession over R & D

Weaknesses:

- Possible emergence of niche and international competitors
- Will crypto actually catch on and maintain stability? (possible opportunity)
- High operating expenses (R & D)



+ Select Symbols

+ Select Metrics

1D

5D

1M

6M

YTD

1Y

3Y

5Y

10Y

MAX



V **1,424.86%**

Price Return
since 03/24/2008
(5593 days)

SP500 **915.91%**

Price Return
since 07/26/1993
(10955 days)

SP500-40 **102.79%**

Price Return
since 02/24/2014
(3436 days)



Sector: Financial

Market Cap: \$ 490.26 B

Dividend Yield: 0.75% (FWD)

Current Price: 239.25 4:00 PM 07/21/23

Industry: Transactions and Payment Processing Services

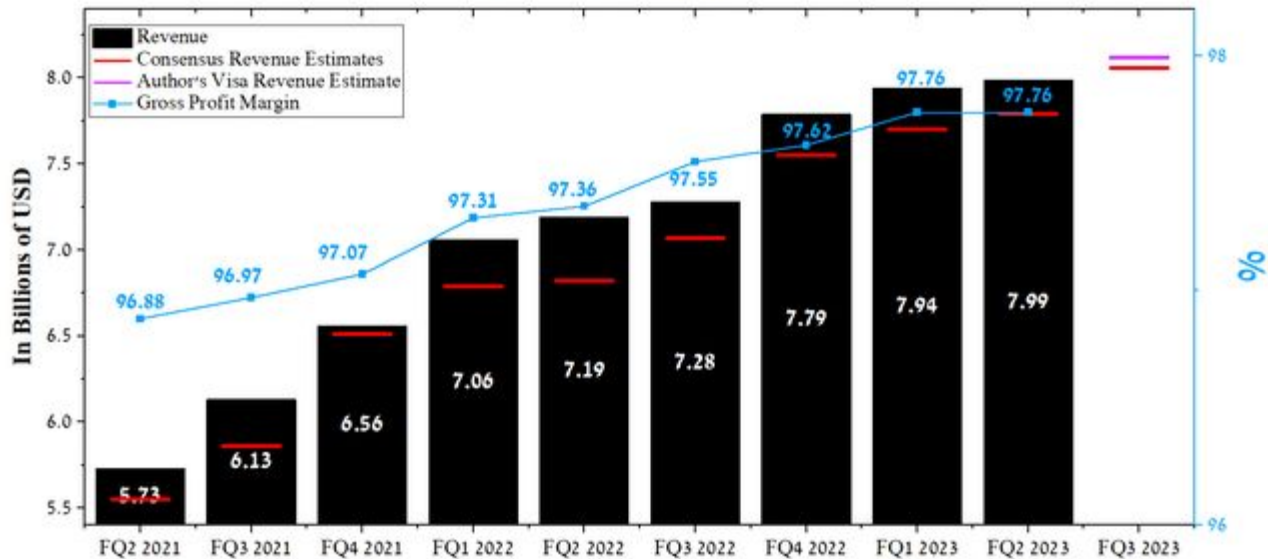
Shares Outstanding: 2.05 B

Beta: 0.94 (24M)

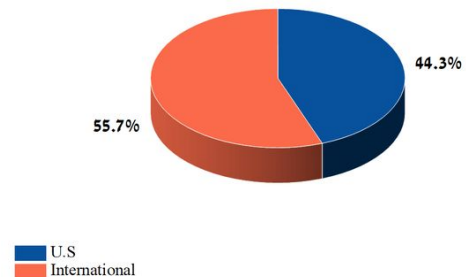
52 Week High - Low: 245.37 - 174.60



Visa Revenue [Gross Profit Margin]



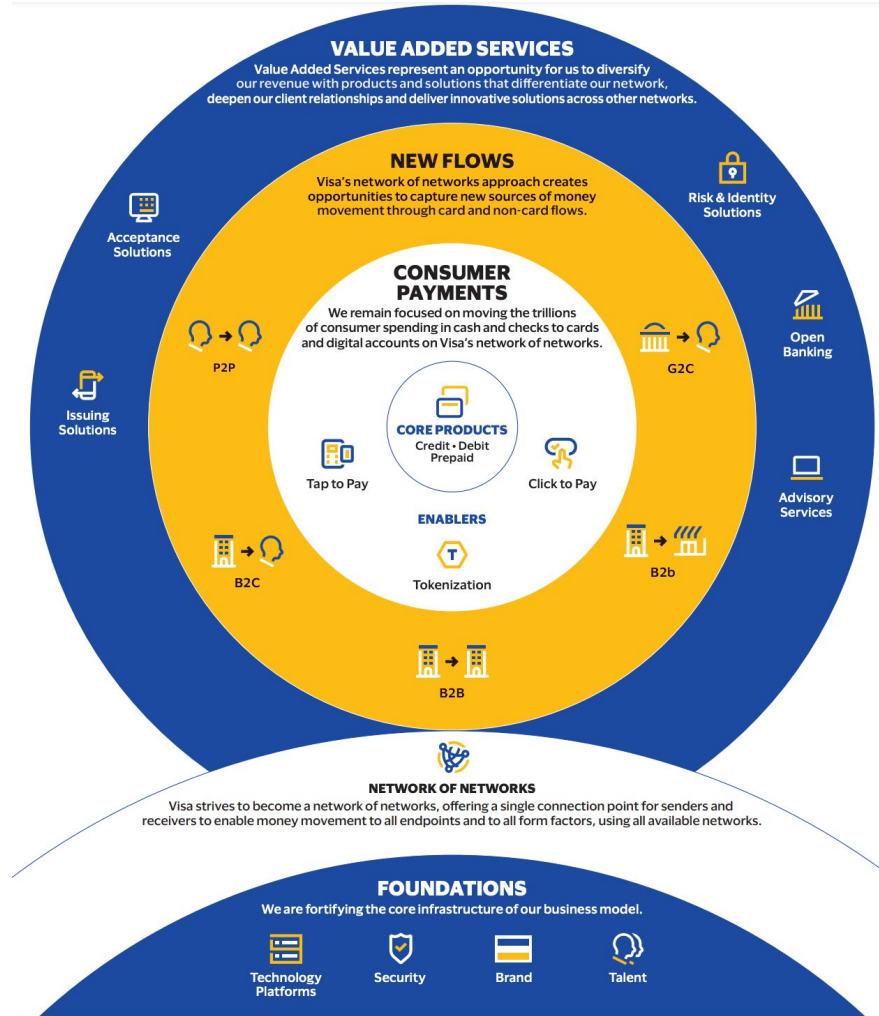
Primary geographical markets by revenue



*The information is presented for informational purposes only.
All forecasts for revenue growth or other financial indicators are the subjective opinion of the author of the article.

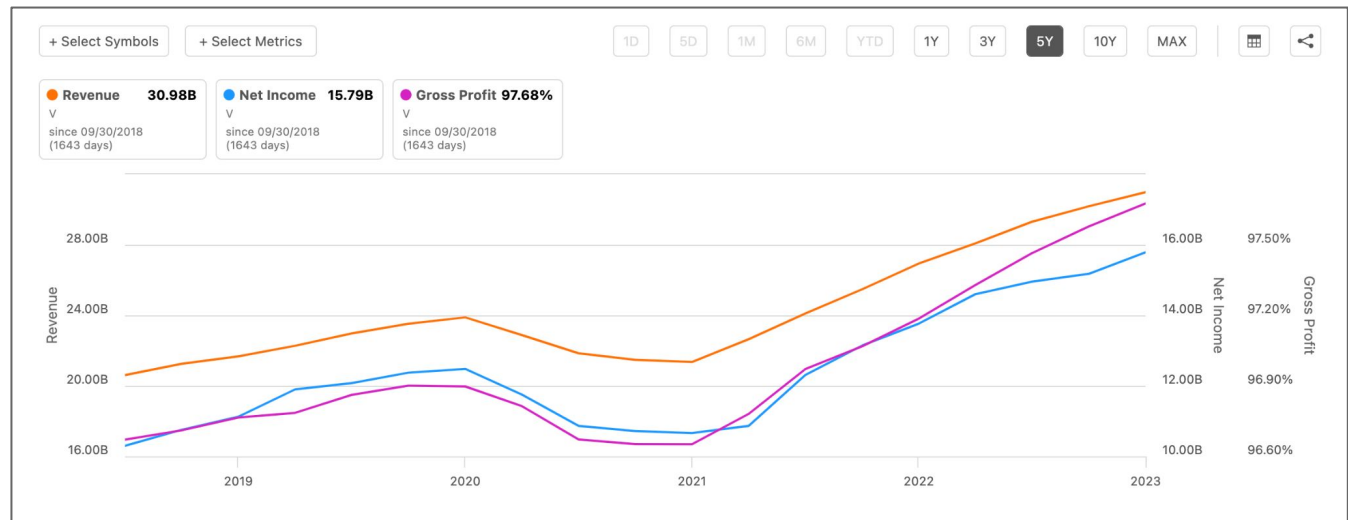


Business Strategy





Financials & Valuations



	P/E FWD	5Y Average	P/B FWD	5Y Average	Dividend Yield
V	28.79x	32.28x	12.43x	10.80x	0.72%
Sector Median	10.02x		1.04x		3.64%

VISA (V)						Terminal Discount Rate		11.00%			
						Terminal FCF Growth Rate		0.00%			
Year	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E	2029 E	2030 E	2031 E	2032 E	2033 E
Revenue	\$ 32,534.10	\$ 36,112.85	\$ 40,085.26	\$ 44,494.64	\$ 49,389.05	\$ 54,821.85	\$ 60,852.25	\$ 67,546.00	\$ 74,976.06	\$ 83,223.43	\$ 92,378.01
% growth		111.00%	111.00%	111.00%	111.00%	111.00%	111.00%	111.00%	111.00%	111.00%	111.00%
Operating Income	\$ 20,893.07	\$ 23,191.34	\$ 25,742.43	\$28,476.57	\$31,608.99	\$35,085.98	\$38,945.44	\$43,229.44	\$47,984.68	\$53,262.99	\$59,121.92
Operating Margin	64.22%	64.22%	64.22%	64.00%	64.00%	64.00%	64.00%	64.00%	64.00%	64.00%	64.00%
Non-Operating Income	\$ (738.54)	\$ (819.78)	\$ (909.95)	\$ (1,010.03)	\$ (1,121.13)	\$ (1,244.46)	\$ (1,381.35)	\$ (1,533.29)	\$ (1,701.96)	\$ (1,889.17)	\$ (2,096.98)
% of revenue	-2.27%	-2.27%	-2.27%	-2.27%	-2.27%	-2.27%	-2.27%	-2.27%	-2.27%	-2.27%	-2.27%
Income Before Taxes	\$ 20,154.53	\$ 22,371.56	\$ 24,832.48	\$27,466.54	\$30,487.86	\$33,841.53	\$37,564.10	\$41,696.15	\$46,282.72	\$51,373.82	\$57,024.94
Taxes	\$ 3,627.82	\$ 4,026.88	\$ 4,469.85	\$4,943.98	\$5,487.82	\$6,091.48	\$6,761.54	\$7,505.31	\$8,330.89	\$9,247.29	\$10,264.49
Tax Rate	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%
Net Income	\$ 16,526.71	\$ 18,344.68	\$ 20,362.63	\$22,522.57	\$25,000.05	\$27,750.05	\$30,802.56	\$34,190.84	\$37,951.83	\$42,126.53	\$46,760.45
% growth		111.00%	111.00%	110.61%	111.00%	111.00%	111.00%	111.00%	111.00%	111.00%	111.00%
NPV of Cash Flows	\$164,799.96					Terminal Value		\$425,095.03			
NPV of Terminal Value	\$425,095.03					Free Cash Yield		11.00%			
Projected Equity Value	\$589,894.99					Terminal P/E		9.090909091			
FCF Yield											
Current P/E	28.79					Current Price		\$240.74			
Projected P/E	35.69					Implied equity value/share		\$287.75			
Shares Outstanding	2050					Upside (Downside) to DCF		19.53%			



Strengths

- Largest US credit card network
- Payment volume (transaction times, ticket size) has been stable around 7-8%
- Ticket sizes still 15% higher than pre-COVID levels ¹
- Innovations - VISA Direct ² and New Flows ³
- Cross-border payment growth

Period	Total Growth (Nominal USD)	Total Growth (Constant USD)	Ex. Intra-Europe ⁽¹⁾ (Constant USD)
3 Months Ended			
Mar 31, 2023	19%	24%	32%
Dec 31, 2022	11%	22%	31%
Sep 30, 2022	21%	36%	49%
Jun 30, 2022	28%	40%	48%
Mar 31, 2022	31%	38%	47%
12 Months Ended			
Mar 31, 2023	19%	30%	39%

Weaknesses

- Regulatory risks (Dodd-Frank Act provisions have halved interchange fee rates to 0.76%)
- Failed M&A with Plaid causing additional scrutiny ⁴
- Challenges from CBDC and new payment systems like FedNow ⁵
- Opex growth

(Source: SEC filings from Visa, Mastercard, American Express and Discover)

Credit Card Networks Based on Purchase Volume (in Billions)

Year	Visa	Mastercard	American Express	Discover	Total Purchase Volume (In Billions)
2021	\$2,405	\$1,085	\$897	\$182	\$4,569

1 - <https://finance.yahoo.com/news/visa-inc-nyse-v-q1-150706844.html>

2 - https://developer.visa.com/capabilities/visa_direct

3 - <https://annualreport.visa.com/business-overview/default.aspx>

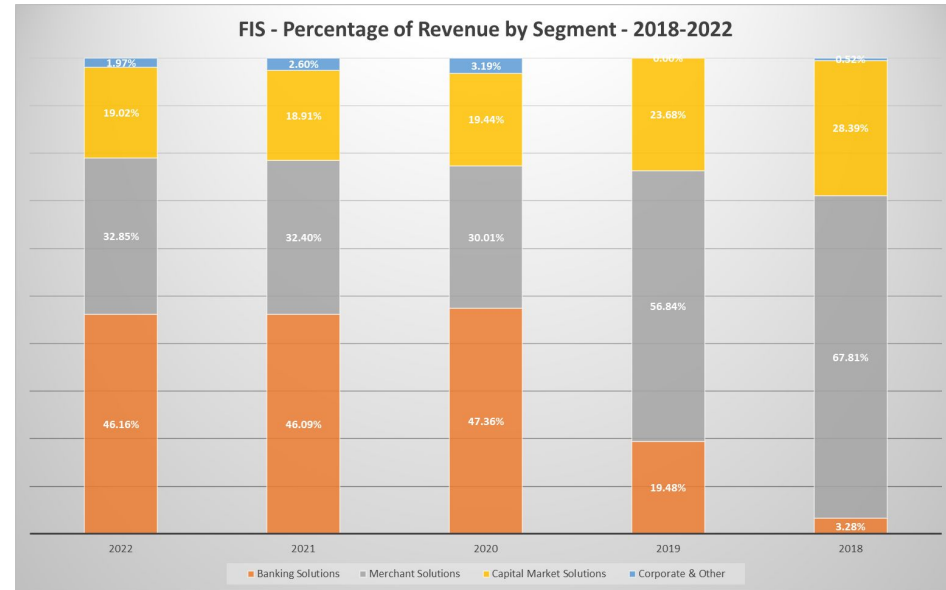
4 - <https://www.justice.gov/opa/pr/visa-and-plaid-abandon-merger-after-antitrust-division-s-suit-block>

5 - https://www.federalreserve.gov/paymentsystems/fednow_about.htm



Fidelity Information Services (FIS) “... is a leading provider of technology solutions for merchants, banks, and capital markets firms globally. Our over 55,000 employees are dedicated to advancing the way the world pays, banks and invests by applying our scale, deep domain expertise and data-driven insights. We help our clients use technology in innovative ways to solve business-critical challenges and improve the experience for their customers.” (source: annual reports)

Merchant Solutions	Banking Solutions	Capital Market Solutions	Corporate and Other
<p>Provides traditional point-of-sale payment processing for merchants</p> <p>Provides card-not-present capabilities for digital marketplace</p>	<p>Core Processing and ancillary applications solutions; digital solutions; fraud, risk management and compliance solutions...</p>	<p>Applications for record keeping, data and analytics, trading, financing, and risk management</p>	<p>Relate to corporate marketing, corporate finance and accounting, human resources, legal, and amortization of acquisition-related intangibles and other costs, such as acquisition and integration expenses</p>



Quantity	Security	Ticker	GIC Sector	Unit Cost	Total Cost	Market Price	Market Value	Unrealized Gain/(Loss)	Unit Income	Est. Ann. Income	%age Assets	Eq shares out	Market Cap (In Millions \$)	Beta
4,390	FIDELITY NATIONAL INFORMATION	FIS	Financials	122.99	\$539,909.51	54.70	\$240,133.00	(\$299,777)	2.08	\$9,131.2	2.33%	592.437	32,406.3	1.11

4,390	FIDELITY NATIONAL INFORMATION	FIS
3,990	MERCK & CO INC	MRK
3,970	UNITED AIRLINES HOLDINGS INC	UAL
3,730	ALPHABET INC	GOOGL
2,926	APPLE INC	AAPL
2,850	WALMART INC	WMT
2,380	AMAZON.COM INC	AMZN
2,280	NXP SEMICONDUCTORS NV	NXPI
2,050	FEDEX CORP	FDX
1,800	TARGET CORP	TGT
1,760	NVIDIA CORP	NVDA
1,750	META PLATFORMS INC	META
1,700	CITIGROUP INC	C
1,690	MICROSOFT CORP	MSFT
1,660	CHEVRON CORP	CVX
1,660	WALT DISNEY CO/THE	DIS
1,620	DUPONT DE NEMOURS INC	DD
1,600	TYSON FOODS INC	TSN
1,520	DISCOVER FINANCIAL SERVICES	DFS
1,510	JPMORGAN CHASE & CO	JPM
1,400	AMERICAN EXPRESS CO	AXP
1,200	NEXTERA ENERGY INC	NEE
1,100	MOSAIC CO/THE	MOS
1,100	STEEL DYNAMICS INC	STLD
910	UNITEDHEALTH GROUP INC	UNH
860	SCOTT'S MIRACLE-GRO CO/THE	SMG
770	ELEVANCE HEALTH INC	ELV
620	BOSTON PROPERTIES INC	BXP
460	RAYTHEON TECHNOLOGIES CORP	RTX
90	TRANSDIGM GROUP INC	TDG

Quantity: #7

Percentage of Assets:
Middle of the Pack

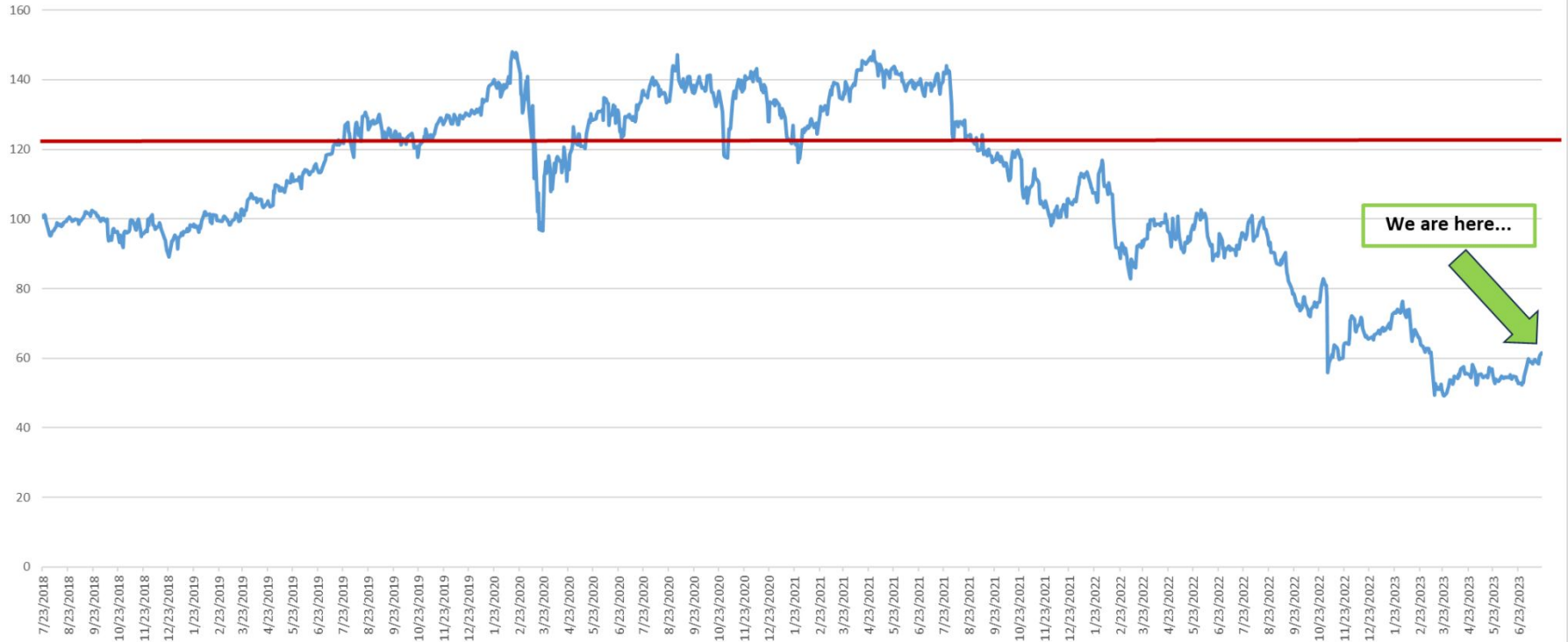
FIDELITY NATIONAL INFORMATION	FIS	2.33%
TARGET CORP	TGT	2.30%
JPMORGAN CHASE & CO	JPM	2.13%
UNITED AIRLINES HOLDINGS INC	UAL	2.11%
BANK OF AMERICA CORP	BAC	1.78%
DISCOVER FINANCIAL SERVICES	DFS	1.72%
WALT DISNEY CO/THE	DIS	1.44%
STEEL DYNAMICS INC	STLD	1.16%
DUPONT DE NEMOURS INC	DD	1.12%
NEXTERA ENERGY INC	NEE	0.86%
TYSON FOODS INC	TSN	0.79%
TRANSDIGM GROUP INC	TDG	0.78%
CITIGROUP INC	C	0.76%
SCOTT'S MIRACLE-GRO CO/THE	SMG	0.52%
RAYTHEON TECHNOLOGIES CORP	RTX	0.44%
MOSAIC CO/THE	MOS	0.37%
BOSTON PROPERTIES INC	BXP	0.35%

4,390	FIDELITY NATIONAL INFORMATION	FIS	(\$299,777)
1,660	WALT DISNEY CO/THE	DIS	(\$72,677)
860	SCOTT'S MIRACLE-GRO CO/THE	SMG	(\$60,549)
1,800	TARGET CORP	TGT	(\$48,178)
8,100	KROGER CO/THE	KR	(\$41,076)
620	BOSTON PROPERTIES INC	BXP	(\$37,999)
910	UNITEDHEALTH GROUP INC	UNH	(\$25,341)
1,600	TYSON FOODS INC	TSN	(\$14,897)
5,080	BRISTOL-MYERS SQUIBB CO	BMJ	(\$13,318)
1,700	CITIGROUP INC	C	(\$9,510)
1,100	MOSAIC CO/THE	MOS	(\$7,744)
1,510	JPMORGAN CHASE & CO	JPM	(\$7,234)
770	ELEVANCE HEALTH INC	ELV	(\$7,098)
6,390	BANK OF AMERICA CORP	BAC	(\$6,351)

Unrealized Losses: #1



FIS - Daily Stock Price - Past 5 Years





Key Firm Developments

2019-present

- 2019 - acquired WorldPay (payment services company) → revenue increased; stock price increased
- 2020 - Covid pandemic
- 2021 - consistently missed revenue targets, stock starts to sell and stock price enters free fall
- 2022 - \$17 billion “Goodwill impairment” related to WorldPay acquisition (Merchant Services segment) → leads to negative revenue
- 2022 - CEO exits earlier than planned; new CEO takes over promising changes (particularly, reduction in expenses)
- 2023 - announce plans to spin-off Merchant Services into its own company in 2024
- Following Q1 results, many analysts revise guidance; believe stock is currently undervalued.
(Long-term DCF does not align with this assessment.)

Firm	Current Price	EPS	P/E	P/S	P/B	P/FCF	ROE (%)
FIS	61.41	-28.18	0	2.56	1.34	15.29	-45.70
Comparisons							
Financials (<i>Sector</i>)			13.53	1.97	1.73		9.1
Payment Proc Services (<i>Sub-Ind</i>)			22.32		7.1		6.7
FLEETCOR Tech (FLT)	252.44	12.23	20.64	5.40	6.47	18.61	32.88
Fiserv, Inc (FI)	128.53	3.75	34.27	4.45	2.64	23.97	7.85





Discounted Cash Flow Valuation

Terminal DR	Terminal FCF Growth	Target Price	Upside/Downside
9.5%	-.05%	\$56.12	-8.80%
11.25%	1.25%	\$59.54	-19.5%
13%	2.75%	\$43.27	-29.7%



Recommendation

Current Price	Target Price	Downside	Recommendation
\$61.56	\$52.42	-17.17%	SELL

- Slowly reduce our holding of FIS by selling 44bps
- Use the 44bps for investment in more reliable companies that show evidence have having upside
- With analysts predicting a rally over the next year, we are leaving space for future classes to sell at higher price or recuperate losses if price recaptures its earlier value

Risks

- Uncertain macro environment
- Uncertain regulatory environment
- FIS historically unreliable regarding revenue targets; stock could drop further
- FIS turns a corner and stock drastically increases in price; we lose that value

Recommendation

Stock	Redommodation	Price Today	Target	Weight	Proposal Weight	Expected Price Return (%)	Dividend Yield
BAC	HOLD	\$ 31.98	\$ 36.54	1.78%	1.78%	14%	3.00%
JPM	HOLD	\$ 154.95	\$153.30	2.13%	2.13%	-1%	2.58%
FIS	SELL	\$ 61.56	\$ 52.42	2.33%	2.00%	-15%	3.38%
DFS	HOLD	\$ 105.11	\$178.45	1.72%	1.72%	70%	2.66%
AXP	BUY	\$ 170.22	\$202.00	2.37%	2.47%	19%	1.41%
C	HOLD	\$ 47.05	\$ 53.05	0.76%	0.76%	13%	4.34%
V	BUY	\$ 239.25	\$271.50	0.00%	0.22%	13%	0.75%
MA	BUY	\$ 397.49	\$420.68	0.00%	0.11%	6%	0.57%



Appendix

BAC Ratios [May 2023]





Target Price

Absolute Valuation	Current Stock Price	Current Multiple	Your Target Multiple	Target/Current	Target Price *	Implied Return #
P/E	27.09	8.14	11.87 (Median)	1.458	39.5	45.8%
P/B	27.09	0.86	1.16 (Median)	1.349	36.54	34.9%
P/S	27.09	2.26	3.26 (Median)	1.442	39.06	44.2%
P/FCF	27.09	8.36	7.36 (Median)	0.880	23.84	(12%)



Citigroup Inc. (C)

Current price: \$47.52 [Closed: Jul 19, 5:00 PM EDT](#)

- Last reported 10K on July 14 2023
 - Net Income \$2.9B
 - EPS \$1.33
 - TTS generated 15% of total revenue
 - Security Services revenue  15%
 - Market revenue down 13%
 - Investment Banking revenue  24% YoY
 - Wealth revenue  5%
 - Expenses  9% YoY (\$13.6B)
- Efforts afoot to bending the cost curve
 - Modernize and automate infra
 - Close sales of remaining two Asia consumer franchises by year-end
 - Restart exit process in Poland
 - Adopt a leaner organizational model by reducing redundancies

Discount Rate	Terminal Rate	Target Price	Undervalued by
11%	0%	\$53.05	10%
7.5%	4%	\$376	87%

Master Card DCF

Mastercard (MA)												
Analyst: Tejen Shah 6/13/23 (000s)											Terminal Discount Rate = 8.5%	
											Terminal FCF Growth = 3.5%	
Year	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	
Revenue	\$ 25,573	\$ 29,153	\$ 32,943	\$ 36,896	\$ 40,954	\$ 45,050	\$ 49,104	\$ 53,032	\$ 56,745	\$ 60,149	\$ 63,157	
% Growth		14.0%	13.0%	12.0%	11.0%	10.0%	9.0%	8.0%	7.0%	6.0%	5.0%	
Operating Income	\$ 14,193	\$ 16,180	\$ 18,283	\$ 20,293	\$ 22,525	\$ 24,777	\$ 27,007	\$ 29,168	\$ 31,210	\$ 33,082	\$ 34,736	
Operating Margin	55.5%	55.5%	55.5%	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%	
Interest Expense and Other (Income)	\$ (256)	\$ (292)	\$ (329)	\$ (369)	\$ (410)	\$ (450)	\$ (491)	\$ (530)	\$ (567)	\$ (601)	\$ (632)	
Interest and Other as % of Sales	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	
Income Before Taxes	\$ 14,448	\$ 16,471	\$ 18,613	\$ 20,662	\$ 22,934	\$ 25,228	\$ 27,498	\$ 29,698	\$ 31,777	\$ 33,684	\$ 35,368	
Taxes	\$ 2,312	\$ 2,635	\$ 2,978	\$ 3,306	\$ 3,669	\$ 4,036	\$ 4,400	\$ 4,752	\$ 5,084	\$ 5,389	\$ 5,659	
Tax Rate	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	
Net Income	\$ 12,137	\$ 13,836	\$ 15,635	\$ 17,356	\$ 19,265	\$ 21,191	\$ 23,099	\$ 24,946	\$ 26,693	\$ 28,294	\$ 29,709	
% Growth		14.0%	13.0%	11.0%	11.0%	10.0%	9.0%	8.0%	7.0%	6.0%	5.0%	
Free Cash Flow	\$ 12,137	\$ 13,836	\$ 15,635	\$ 17,356	\$ 19,265	\$ 21,191	\$ 23,099	\$ 24,946	\$ 26,693	\$ 28,294	\$ 29,709	
% Growth		14.0%	13.0%	11.0%	11.0%	10.0%	9.0%	8.0%	7.0%	6.0%	5.0%	
NPV of Cash Flows	136,482		33%									
NPV of terminal value	271,995		67%								Terminal Value	
Projected Equity Value	408,476		100%								614,976	
Free Cash Flow Yield	3.33%										Free Cash Yield	
											4.83%	
Current P/E	30.0	26.3	23.3								Terminal P/E	
Projected P/E	33.7	29.5	26.1								20.7	
Current EV/EBITDA	N/A	N/A	N/A								Terminal EV/EBITDA	
Projected EV/EBITDA	N/A	N/A	N/A								N/A	
Shares Outstanding	971											
Current Price	\$ 375.32											
Implied equity value/share	\$ 420.68											
Upside/(Downside) to DCF	12.1%											
Sensitivity Analysis												
		Terminal Discount Rate										
		7.5%	8.0%	8.5%	9.0%	9.5%	10.0%					
Terminal Growth Rate	3.30%	\$ 513.11	\$ 455.69	\$ 409.38	\$ 371.26	\$ 339.35	\$ 312.25					
	3.40%	\$ 522.38	\$ 462.77	\$ 414.92	\$ 375.68	\$ 342.93	\$ 315.19					
	3.50%	\$ 532.11	\$ 470.16	\$ 420.68	\$ 380.25	\$ 346.62	\$ 318.21					
	3.60%	\$ 542.34	\$ 477.89	\$ 426.67	\$ 384.99	\$ 350.44	\$ 321.33					
	3.70%	\$ 553.11	\$ 485.98	\$ 432.91	\$ 389.92	\$ 354.39	\$ 324.55					
		\$ 375.32										

American Express DCF Model

American Express (AXP)											
Analyst: Tejen Shah				Terminal Discount Rate =		8.5%					
6/6/23				Terminal FCF Growth =		3.5%					
(000s)											
Year	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Non Interest Revenues	\$ 49,842	\$ 54,826	\$ 60,308	\$ 66,038	\$ 71,651	\$ 77,025	\$ 82,031	\$ 87,363	\$ 93,042	\$ 98,159	\$ 103,067
% Growth		10.0%	10.0%	9.5%	8.5%	7.5%	6.5%	6.5%	6.5%	5.5%	5.0%
Interest Income	\$ 14,683	\$ 16,152	\$ 17,767	\$ 19,151	\$ 20,779	\$ 22,337	\$ 23,789	\$ 24,899	\$ 26,517	\$ 27,975	\$ 29,374
% Non-Interest Revenue		29.5%	29.5%	29.0%	29.0%	29.0%	29.0%	28.5%	28.5%	28.5%	28.5%
Interest Expense	\$ 3,226	\$ 3,549	\$ 3,904	\$ 4,623	\$ 5,016	\$ 5,777	\$ 6,152	\$ 6,989	\$ 7,443	\$ 8,344	\$ 8,761
% Non-Interest Revenue		6.5%	6.5%	7.0%	7.0%	7.5%	7.5%	8.0%	8.0%	8.5%	8.5%
Provision for Losses	\$ 4,000	\$ 4,000	\$ 4,000	\$ 4,259	\$ 4,621	\$ 4,968	\$ 5,503	\$ 5,838	\$ 6,576	\$ 6,937	\$ 7,284
%Sales		6.2%	5.6%	5.1%	5.0%	5.00%	5.00%	5.20%	5.20%	5.50%	5.50%
Expenses	\$ 48,071	\$ 53,091	\$ 58,556	\$ 63,892	\$ 69,322	\$ 74,522	\$ 79,365	\$ 84,197	\$ 89,669	\$ 94,601	\$ 99,331
% Sales		74.5%	74.8%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%
Income Tax Provision	\$ 2,030	\$ 2,274	\$ 2,555	\$ 3,748	\$ 4,067	\$ 4,372	\$ 4,819	\$ 5,112	\$ 5,595	\$ 5,903	\$ 6,198
Tax Rate		22.0%	22.0%	22.0%	22.0%	22.0%	23.0%	23.0%	24.0%	24.0%	24.0%
Net Income	7,198	8,063	9,060	8,667	9,403	9,724	9,981	10,126	10,275	10,350	10,867
% Growth		12.0%	12.4%	-4.3%	8.5%	3.4%	2.6%	1.5%	1.5%	0.7%	5.0%
Free Cash Flow	7,198	8,063	9,060	8,667	9,403	9,724	9,981	10,126	10,275	10,350	10,867
% Growth		12.0%	12.4%	-4.3%	8.5%	3.4%	2.6%	1.5%	1.5%	0.7%	5.0%
NPV of Cash Flows	62,126	38%									
NPV of terminal value	99,492	62%								Terminal Value	224,949
Projected Equity Value	161,618	100%									
Free Cash Flow Yield	5.30%									Free Cash Yield	4.83%
Current P/E	18.9	16.8	15.0							Terminal P/E	20.7
<i>Projected P/E</i>	22.5	20.0	17.8								
Current EV/EBITDA	N/A	N/A	N/A							Terminal EV/EBITDA	N/A
<i>Projected EV/EBITDA</i>	N/A	N/A	N/A								
Shares Outstanding	798										
				Sensitivity Analysis				Terminal Discount Rate			
				\$184.31	7.5%	8.0%	8.5%	9.0%	9.5%	10.0%	
Current Price	\$ 170.22			3.0%	\$244.13	\$218.34	\$197.50	\$180.31	\$165.89	\$153.62	
Implied equity value/share	\$ 202.53			3.40%	\$248.26	\$221.49	\$199.97	\$182.28	\$167.48	\$154.93	
Upside/(Downside) to DCF	19.0%			3.50%	\$252.59	\$224.78	\$202.53	\$184.31	\$169.13	\$156.27	
				3.60%	\$257.14	\$228.22	\$205.20	\$186.43	\$170.83	\$157.66	
				3.70%	\$261.93	\$231.82	\$207.97	\$188.62	\$172.59	\$159.09	

Visa DCF Model

A1										
in millions, except per share data										
	A	B	C	D	E	F	G	H	I	
1	in millions, except per share data	2025 E	2024 E	2023 E	2022	2021	2020	2019	2018	
2	VISA (V)									
3	Consensus	\$ 40,270.00	\$ 36,140.00	\$ 32,560.00						
4	Net Revenues	\$ 40,085.26	\$ 36,112.85	\$ 32,534.10	\$ 29,310.00	\$ 24,105.00	\$ 21,846.00	\$ 22,977.00	\$ 20,609.00	
5	% growth	111.00%	111.00%	111.00%	121.59%	110.34%	95.08%	111.49%		
6	Operating Expenses									
7	Personnel	\$ 6,814.49	\$ 6,139.18	\$ 5,530.80	\$ 4,990.00	\$ 4,240.00	\$ 3,785.00	\$ 3,444.00	\$ 3,170.00	
8	% of revenue	17.00%	17.00%	17.00%	17.02%	17.59%	17.33%	14.99%	15.38%	
9	Marketing	\$ 1,827.89	\$ 1,646.75	\$ 1,483.55	\$ 1,336.00	\$ 1,136.00	\$ 971.00	\$ 1,105.00	\$ 988.00	
10	% of revenue	4.56%	4.56%	4.56%	4.56%	4.71%	4.44%	4.81%	4.79%	
11	Networking and Processing	\$ 1,014.16	\$ 913.66	\$ 823.11	\$ 743.00	\$ 730.00	\$ 727.00	\$ 721.00	\$ 686.00	
12	% of revenue	2.53%	2.53%	2.53%	2.53%	3.03%	3.33%	3.14%	3.33%	
13	Professional fees	\$ 689.47	\$ 621.14	\$ 559.59	\$ 505.00	\$ 403.00	\$ 408.00	\$ 454.00	\$ 446.00	
14	% of revenue	1.72%	1.72%	1.72%	1.72%	1.67%	1.87%	1.98%	2.16%	
15	D & A	\$ 1,178.51	\$ 1,061.72	\$ 956.50	\$ 861.00	\$ 804.00	\$ 767.00	\$ 656.00	\$ 613.00	
16	% of revenue	2.94%	2.94%	2.94%	2.94%	3.34%	3.51%	2.86%	2.97%	
17	General and administrative	\$ 1,631.47	\$ 1,469.79	\$ 1,324.14	\$ 1,194.00	\$ 985.00	\$ 1,096.00	\$ 1,196.00	\$ 1,145.00	
18	% of revenue	4.07%	4.07%	4.07%	4.07%	4.09%	5.02%	5.21%	5.56%	
19	Litigation Provision	\$ 1,186.52	\$ 1,068.94	\$ 963.01	\$ 868.00	\$ 3.00	\$ 11.00	\$ 400.00	\$ 607.00	
20	% of revenue	2.96%	2.96%	2.96%	2.96%	0.01%	0.05%	1.74%	2.95%	
21	Total Operating Expenses	\$ 14,342.84	\$ 12,921.51	\$ 11,641.03	\$ 10,497.33	\$ 8,301.34	\$ 7,765.35	\$ 7,976.33	\$ 7,655.34	
22	Operating Income	\$ 25,742.43	\$ 23,191.34	\$ 20,893.07	\$ 18,812.67	\$ 15,803.66	\$ 14,080.65	\$ 15,000.67	\$ 12,953.66	
23	Non-operating Income (Expense)									
24	Interest Expense	\$ (721.53)	\$ (650.03)	\$ (585.61)	\$ (538.00)	\$ (513.00)	\$ (516.00)	\$ (533.00)	\$ (612.00)	
25		-1.80%	-1.80%	-1.80%	-1.84%	-2.13%	-2.36%	-2.32%	-2.97%	
26	Investment Income (Expense) and other	\$ (188.40)	\$ (169.73)	\$ (152.91)	\$ (139.00)	\$ 772.00	\$ 225.00	\$ 416.00	\$ 464.00	
27		-0.47%	-0.47%	-0.47%	-0.47%	3.20%	1.03%	1.81%	2.25%	
28	Total non-operating income (Expense)	\$ (909.95)	\$ (819.78)	\$ (738.54)	\$ (677.02)	\$ 258.98	\$ (291.02)	\$ (117.02)	\$ (148.03)	
29	Income before Income Taxes	\$ 24,832.48	\$ 22,371.56	\$ 20,154.53	\$ 18,135.65	\$ 16,062.63	\$ 13,789.62	\$ 14,883.65	\$ 12,805.63	
30	Income tax provision	\$ 4,469.85	\$ 4,026.88	\$ 3,627.82	\$ 3,179.00	\$ 3,752.00	\$ 2,924.00	\$ 2,804.00	\$ 2,505.00	
31	Income tax pct	18.00%	18.00%	18.00%	17.53%	23.36%	21.20%	18.84%	19.56%	
32	Net Income	\$ 20,362.63	\$ 18,344.68	\$ 16,526.71	\$ 14,956.65	\$ 12,310.63	\$ 10,865.62	\$ 12,079.65	\$ 10,300.63	
33										
34	Basic Earnings Per Share									
35	Class A C/S				7.01	5.63	4.90	5.32	4.43	
36	Class B C/S				11.33	9.14	7.94	8.68	7.28	
37	Class C C/S				28.03	22.53	19.58	21.30	17.72	
38										
39	Basic Weighted-Average Shares Outstanding									
40	Class A C/S				1,651	1,691	1,697	1,742	1,792	
41	Class B C/S				245	245	245	245	245	
42	Class C C/S				10	10	11	12	12	
43										
44	Diluted EPS									
45	Class A C/S				7.00	5.63	4.90	5.32	4.42	
46	Class B C/S				11.31	9.13	7.94	8.66	7.27	
47	Class C C/S				28.00	22.51	19.58	21.26	17.69	
48										
49	Diluted Weighted-Average Shares Outstanding									
50	Class A C/S				2,136	2,188	2,223	2,272	2,329	
51	Class B C/S				245	245	245	245	245	
52	Class C C/S				10	10	11	12	12	