### Financial Risk Management Graduate Program

Team 2 Student Managed Fund Fall 2022 IAB Presentation

#### Presenting:

Thomas Wnuck - Lead Manager Sayem Lincoln - Co-Risk Manager Sean Sigmund - Co-Portfolio Manager Kyle Kuhlthau - Macro Analyst, Fund Analyst

#### Team Members:

Jasmeet Mand - Digital Media Manager Benua Cezmalli - Communications Manager Jeremy Szawarda - Co-Portfolio Manager Marat Sarmanaev - Co-Risk Manager Xiuhan Lin - Fund Analyst Luomeng Yang - Fund Analyst Ningyi Zhu - Fund Analyst





## FRM Fund Team 2





Thomas Wnuck Lead Manager



Jeremy Szawerda Co-Portfolio Manager



Sean Sigmund Co-Portfolio Manager



Marat Sarmanaev Co-Risk Manager



Sayem Lincoln Co-Risk Manager



Jasmeet Mand Digital Media Manager



Kyle Kuhlthau Macro-Manager



Benua Cezmalli Communications Manager



Ningyi Zhu Fund Analyst



Luomeng Yang Fund Analyst



Xiuhan Lin Fund Analyst





## Administrative Processes



Process	Member Requirement
Quorum for a Meeting	9/11 Members Present
Voting on Administrative Issues	Majority of Members Present
Stock Pitch Approval	7/11 Members Supermajority Vote
Exit a Position ——	7/11 Members Supermajority Vote
Stop Loss Parameter	20% Downside Set Upon Purchase





## Fund Philosophy



- The S&P 500 Index is the Fund's benchmark.
- Mega to Large Cap Value portfolio primarily in U.S. based securities.
  - Fundamental Analysis Looking for Individual Stocks
    - Leaders in their Industry w/Continued Strong Performance next 3-5 years.
    - Key Valuation Method Ratio Analysis, EPS Growth rate, Dividend Yields, DCF, Better Insider Trading, & ESG.
- Seek Better Performing Assets with:
  - > Stable business models not disrupted by high inflation and/or high interest rates;
  - Strong balance sheets;
  - Consistent, predictable future cash flows and dividends.





### Our Macroeconomic View



- 1. De-globalization, possible wage price spiral, higher interest rates for longer
- 2. Heightened geopolitical tensions leading to higher prices: energy, food, commodities
- 3. 12k jobs added past 8 months
- 4. Saving rate fell to lowest since 2005, at 2.3%. (Savings/Disposable Income)
- 5. Possible earnings contraction 2023.
- Exploring Fixed Income opportunities, will look to hedge in 2nd semester
- Our top down view leads us to believe that
  - ➤ Value, low beta equities
- 2nd semester fixed income, small caps, small allocation to tech





The Macro Compass. substack.com





## Areas of Opportunity: 2023

Annual Returns for Key Indices Ranked in Order of Performance (1999-2018)

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Non-U.S.	Real	U.S.	Non-U.S.	Emerging	Real	Emerging	Real	Emerging	U.S.	Emerging	Small Cap	U.S.	Real	Small Cap	Real	Large	Small Cap	Emerging	Cash
Equity	Estate	Fixed	Fixed	Market	Estate	Market	Estate	Market	Fixed	Market	Equity	Fixed	Estate	Equity	Estate	Cap	Equity	Market	Equivalent
		Income	Income					Equity	Income			Income		The second second	10000000	Equity	100 March 100		
27.92%	13.84%	8.43%	22.37%	55.82%	37.96%	34.00%	42.12%	39.38%	5.24%	78.51%	26.85%	7.84%	27.73%	38.82%	15.02%	1.38%	21.31%	37.28%	1.87%
Small Cap	U.S.	High Yield	U.S.	Small Cap	Emerging	Real	Emerging	Non-U.S.	Non-U.S.	High Yield	Real	High Yield	Emerging	Large	Large	U.S.	High Yield	Non-U.S.	U.S.
	Fixed	TO CHARLES THE CONTROL	Fixed	Equity	Market	Estate	Market	Equity			Estate	or meson and so		Cap	Cap	Fixed	TORRESON OF THE STATE OF	Equity	Fixed
			Income					1						Equity	Equity	Income			
21.26%	11.63%	5.28%	10.26%	47.25%	25.55%	15.35%	32.17%	12.44%	4.39%	58.21%	19.63%	4.98%		32.39%	13.69%	0.55%	17.13%	24.21%	0.01%
Large		Cash	Real	Real	Non-U.S.					Real	Emerging						Large	Large	High Yield
Сар	Equivalent	Equivalent	Estate	Estate	Equity					Estate	Market				Fixed		Сар	Сар	
Equity											Equity				Income		Equity	Equity	
21.04%	6.18%	4.42%	2.82%	40.69%	20.38%	14.47%	25.71%	11.03%	2.06%	37.13%	18.88%	4.36%	16.41%	21.02%	5.97%	0.05%	11.96%	21.83%	-2.08%
Real		Small Cap	Cash		Small Cap	Large	Small Cap	U.S.	High Yield			Large	Small Cap	High Yield	Small Cap	Real	Emerging		
Estate		Equity	Equivalent	Equity		Сар	Equity	Fixed		Equity		Cap	Equity		Equity	Estate	Market		
8.87%	-3.02%	0.4007	4 7000	00 4004	18.33%	Equity	40.070	Income	00.000	00.000		Equity	*** ****	7.44%	4 000/	-0.79%	Equity		Income
		2.49%	1.78%	39.42%		4.91%	18.37%	6.97%	-26.16%	33.67%	15.12%	2.11%	16.35%		4.89%		11.19%	14.65%	-2.15%
Cash	Non-U.S. Fixed	Emerging Market	High Yield	High Yield	Non-U.S.		Large	Large	Small Cap	Small Cap	Large	Cash	Large	Real	High Yield	Non-U.S.	Real	Non-U.S.	Large
Equivalent	Income	Equity			Fixed Income		Cap Equity	Cap	Equity	Equity	Cap Equity	Equivalent	Cap Equity	Estate		Equity	Estate		Cap Equity
4.85%	-3.91%	-2.61%	-1.37%	28.97%	12.54%	4.55%	15.79%	5.49%	-33.79%	27.17%	15.06%	0.10%	16.00%	3.67%	2.45%	-3.04%	4.06%	10.51%	-4.38%
High Yield	High Yield	Non-U.S.	Emerging	Large	High Yield	Cash	High Yield	Cash	Large	Large	Non-U.S.	Small Cap	High Yield	Cash	Cash	Small Cap	Non-U.S.	Real	Real
		Fixed	Market	Cap	Flight Held	Equivalent	riigii Tield	Equivalent	Cap	Cap	Equity	Equity			Equivalent	Equity	Equity	Estate	Estate
		Income	Equity	Equity					Equity	Equity	13,1010								
2.39%	-5.86%	-3.75%	-6.16%	28.68%	11.13%	3.07%	11.85%	5.00%	-37.00%	26.47%	8.95%	-4.18%	15.81%	0.07%	0.03%	-4.41%	2.75%	10.36%	-5.63%
U.S.	Large	Real	Non-U.S.	Non-U.S.	Large	High Yield	Non-U.S.	High Yield	Non-U.S.	Non-U.S.	U.S.	Real	U.S.	U.S.	Emerging	High Yield	U.S.	High Yield	Small Cap
Fixed	Cap	Estate	Equity		Cap	100000	Fixed		Equity	Fixed	Fixed	Estate	Fixed	Fixed	Market		Fixed		
Income	Equity		1993		Equity								Income				Income		
-0.83%	-9.11%	-3.81%	-15.80%	19.36%	10.88%	2.74%		1.87%	-43.56%		6.54%	-6.46%	4.21%	-2.02%			2.65%		-11.01%
		Large	Small Cap	U.S.				Small Cap	Real										
		Cap	Equity		Fixed	Fixed	Equivalent		Estate	Fixed								Fixed	
		Equity		Income														Income	
-8.83%	-13.37%	-11.89%	-20.48%	4.10%	4.34%	2.43%	4.85%	-1.57%	-48.21%	5.93%	4.95%	-12.21%	4.09%	-2.60%	-3.09%	-6.02%	1.49%	3.54%	-14.09%
		Non-U.S.	Large	Cash			U.S.	Real	Emerging			Emerging							
		Equity	Сар	Equivalent	Equivalent		Fixed	Estate	Market	Equivalent	Equivalent	Market	Equivalent			Market	Equivalent	Equivalent	Market
		04 400/	Equity	4.4500	4 000	Income	Income	7.000	Equity	0.0400	0.400	Equity	0.4400	Income		Equity	0.0004	0.000	Equity
		-21.40%	-22.10%	1.15%	1.33%	-8.65%	4.33%	-7.39%	-53.33%	0.21%	0.13%	-18.42%	0.11%	-3.08%	-4.32%	-14.92%	0.33%	0.86%	-14.58%





### Process: Sector Selection



The figure on the right is Fidelity Investments' research on <u>Historical Performance of Sectors across the business cycle</u>.

Through proper utilization of the research, the team voted and decided to invest in Consumer Staples, Health Care & Communication Services sectors.

We further voted and decided to invest in Energy and Industrials sector (especially in the Aerospace & Defense industry). Reasoning:

- Ongoing energy crisis & further escalation w/winter approaching (for Energy sector).
- Possible escalation and continuation of Russia-Ukraine situation
- Ongoing NATO deals & talks (for Aerospace & Defense industry)

Sector	<b>Early</b> Rebounds	<b>Mid</b> Peaks	Late Moderates	Recession Contracts
Financials	+			7.7
Real Estate	++	=	+	
Consumer Discretionary	++			+
Technology	+	+	-	++
Industrials	/ ++			444
Materials	+			
Consumer Staples		=	+	++
Health Care				++
Energy			++	
Communication Services	1	+		(=)
Utilities		-	+	++

Economically sensitive sectors may tend to outperform, while more defensive sectors have tended to underperform.

Making marginal portfolio allocation changes to manage drawdown risk with sectors may enhance riskadjusted returns during this cycle. Defensive and inflationresistant sectors tend to perform better, while more cyclical sectors underperform. Since performance is generally negative in recessions, investors should focus on the most defensive, historically stable sectors.

#### In a Growing Economy

Consider information technology.

It has had the highest volatility relative to all sectors over the past 20 years, which could boost portfolio performance.

It has often outperformed during the early and mid phases of the business cycle when the economy is growing.<sup>1</sup>

#### As the Economy Slows Down

Consider consumer staples, health care, and utilities sectors.

They usually outperformed during the late and recession phases of the business cycle when the economy is slowing or shrinking.<sup>1</sup>

They have had the lowest volatility relative to all sectors over the past 20 years, which may lower portfolio risk.

Presenter: Sayem

### Process: Portfolio Allocation Model



- The Portfolio Allocation model targets a 5% of portfolio allocated to per stock.
- ❖ In order to do that, we broke the strategy down into 3 sub-categories:
  - Offensive plays: 5% allocated to per stock right from the start.
    - These are the Energy and Defense stocks
  - Defensive plays: every other stock were defensive plays
    - 3.5% allocation at start
    - Later 1.5% average-down/additional buy, to total 5%
  - Legacy stocks: buying a smaller percentage of Mega-Cap stocks, High Beta stocks
    - Implementing the inverse process of our allocation model
      - 1.5% at start and later follow up average-down/additional buy, to total 5%





### Process: Stock Pitch



### Research

- Lower Beta than Market or comparatively lower than sector rivals.
- Stocks with Better Performance (5Yr, 1Yr, YTD, 6 Months, Quarterly,).
- Stocks with Better EPS Growth Rate.
- Stocks with Better Ratio Analysis: ROIC, ROA, ROE.
- Stocks with Favorable Insider Trading.
- Stocks with High Dividend Yields.
- Recent News & Developments in regards to macroeconomic view

### Stock Pitch

- In-Depth Research Presentation:
  - Performance & Ratio Analysis
  - > Valuation
  - > Thesis
  - Risks
  - Projections/ Future Outlook
- Business Model/Strategy
  - Sustainable companies through inflationary period & possible upcoming recessionary period
- All 11 Members Vote
  - > 7 out of 11 Votes needed for approval

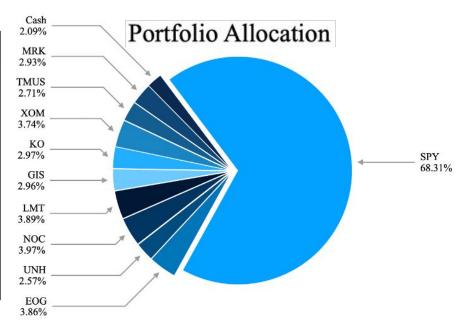




### Portfolio Allocation (As of December 12, 2022)



Sector	S&P 500 Sector Weight	% Of Invested Equity	Spread
Energy	5.10%	25.67%	20.57%
Materials	2.70%	0.00%	-2.70%
Industrials	8.40%	26.56%	18.16%
Utilities	3.00%	0.00%	-3.00%
Health Care	15.20%	18.56%	3.36%
Financials	11.60%	0.00%	-11.60%
Consumer Staples	7.00%	20.04%	13.04%
Information Technology	26.40%	0.00%	-26.40%
Communication Services	7.50%	9.17%	1.67%
Real Estate	2.70%	0.00%	-2.70%
Consumer Discretionary	10.40%	0.00%	-10.40%
Total	100.00%	100.00%	0.00%





Portfolio Beta: 0.73

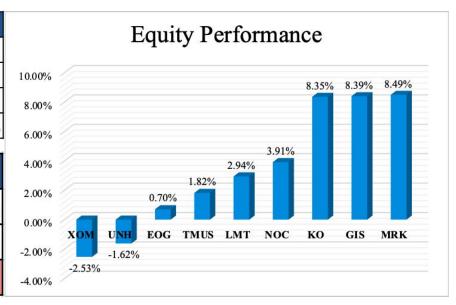


### Portfolio Performance (As of December 12, 2022)



S&P 500 Ind	SI	MF Portfolio	
Beginning Value	\$ 3,859.11	\$	500,000.00
Current Value	\$ 4,071.70	\$	522,457.86
Absolute Change	\$ 212.59	\$	22,457.86
% Change	5.51%		4.49%

Total Portfolio vs. S&P 500 P	Performance
Total Portfolio Performance	4.49%
S&P 500 Performance	5.51%
Difference in Performance	-1.02%







### Considered Positions



Company	Ticker	<b>Price At Time of Pitch</b>	<b>Current Price</b>	Change	% Change	Team Decision	Reasoning	
AbbVie Inc.	ABBV	\$141.99	\$163.66	\$21.67	15.26%	Rejected	High Debt/Expiring Patents	
Eversource Energy	ES	\$82.49	\$83.71	\$1.22	1.48%	Shelved	Concern Over Home Energy Prices	
Archer-Daniels-	ADM	\$95.19	\$91.71	-\$3.48	-3.66%	Shelved	Overvalued, ESG Concern	
Midland Company		4,51.13	Ψ>11/1	Ψ2σ	510070	211011100	,,	
Johnson & Johnson	JNJ	\$174.72	\$178.88	\$4.16	2.38%	Shelved	Overvalued	
10 Yr. Treasury Bonds	1	2	<u> -</u>	-	_	Shelved	Unsure of Outlook	
Microsoft Corp.	MSFT	\$245.03	\$255.02	\$9.99	4.08%	Approved	Not Yet Purchased	
Taiwan Semiconductor	TSM	\$82.21	\$81.50	-\$0.71	-0.86%	Approved	Not Yet Purchased	
Cisco Systems, Inc.	CSCO	\$48.28	\$49.70	\$1.42	2.94%	Approved	Not Yet Purchased	

17 Total Pitches This Semester (16 Equity, 1 Fixed Income)





## Current Portfolio Holdings



Ticker	Company	Industry	<b>Purchase Date</b>	Shares	<b>Purchase Price</b>	<b>Current Price</b>	Cost Basis	Market Value	Weight	Unrealized Gain (Loss)	% Change
SPY	SPDR S&P 500 ETF Trust	S&P 500	10/26/2022	877	\$382.40	\$406.91	\$335,364.80	\$356,860.07	68.30%	\$21,495.27	6.41%
EOG	EOG Resources, Inc.	Oil & Gas E&P	11/3/2022	145	\$138.00	\$138.97	\$20,010.00	\$20,150.65	3.86%	\$140.65	0.70%
UNH	UnitedHealth Group, Inc.	Managed Health Care	11/3/2022	25	\$545.00	\$536.16	\$13,625.00	\$13,404.00	2.57%	(\$221.00)	-1.62%
NOC	Northrop Grumman Corp.	Aerospace & Defense	11/4/2022	38	\$525.06	\$545.60	\$19,952.28	\$20,732.80	3.97%	\$780.52	3.91%
LMT	Lockheed Martin Corp.	Aerospace & Defense	11/4/2022	41	\$482.06	\$496.23	\$19,764.46	\$20,345.43	3.89%	\$580.97	2.94%
GIS	General Mills, Inc.	Packaged Foods & Meats	11/4/2022	179	\$79.82	\$86.52	\$14,287.78	\$15,487.08	2.96%	\$1,199.30	8.39%
KO	The Coca-Cola Company	Soft Drinks	11/4/2022	241	\$59.39	\$64.35	\$14,312.971	\$15,508.35	2.97%	\$1,195.38	8.35%
XOM	Exxon Mobil Corporation	Integrated Oil & Gas	11/4/2022	178	\$112.72	\$109.86	\$20,063.39	\$19,555.08	3.74%	(\$508.31)	-2.53%
TMUS	T-Mobile US, Inc.	Wireless Telecom Services	11/8/2022	93	\$149.69	\$152.41	\$13,921.17	\$14,174.13	2.71%	\$252.96	1.82%
MRK	Merck & Co., Inc.	Pharmaceuticals	11/14/2022	139	\$101.43	\$110.04	\$14,098.76	\$15,295.56	2.93%	\$1,196.80	8.49%
Cash	Cash	N/A	10/26/2022				\$10,944.71	\$10,944.71	2.09%		
						Total	\$496,345.32	\$522,457.86	100.00%	\$26,112.54	5.26%

Total Realized Gain (Loss) (\$3,667.90) Total Period Gain (Loss) \$22,457.86

**Total Portfolio Value** 

\$522,457.86 Total Portfolio Performance

4.49%





## Merck & Co., Inc. (MRK)



#### Strenaths:

- Market Position: MRK is a leading global drugmaker, producing a wide range of prescription drugs and vaccines (U.S. and abroad).
  - Diverse product portfolio, robust pipeline grow to become a global leader in health care.
- <u>Growth Plans:</u> Growing its presence in the United States, Europe, China, Middle East, and Latin America's emerging markets.
  - Growth prospects, and profitability in the oncology, immuno-oncology, neurology, and immunology markets
  - Worldwide total prescription drug sales compound annual growth rate (CAGR) of 7.5% (2020-2026).
- <u>Cost and Operational Efficiency</u>: Total revenue grew from \$40.1 billion in 2017 to \$48.7 billion in 2021.
  - Generated net sales of \$15.0B, 14% year-over-year (Keytruda \$5.4B; for cancer immunotherapy, Gardasil \$2.3B for HPV treatment).



# Exxon Mobil Corp (XOM)



#### Strengths:

- Market Position: Exxon Mobil Corp., the largest publicly-traded integrated oil company in the world aside from Saudi Aramco. Exxon Mobil Corp. engages in the exploration, development, and distribution of oil, gas, and petroleum products. Operating segments: Upstream(produces crude oil and natural gas), Downstream and Chemical.
- Growth Plans: Outperform competition and grow value in lower-emissions future
  - Plans are flexible to increase lower-emission investments based on pace of the energy transition
  - Driving structural reductions of \$9 billion a year by 2023 compared to 2019
- <u>Cost and Operational Efficiency</u>: XOM has paid 95% of the incremental debt it took in 2019.
  - XOM can protect the dividend at a Brent Price of \$50/barrel as EIA projection \$99/barrel for 2022 and \$89/barrel in 2023.
    - It announced a 2022 capex budget of \$21B to \$24B.



## Fidelity Investments' Research



The figure on the right is Fidelity Investments' research on Historical Performance of Sectors across the business cycle.

Sector	<b>Early</b> Rebounds	<b>Mid</b> Peaks	<b>Late</b> Moderates	Recession Contracts
Financials	+			TAT
Real Estate	++	-	+	
Consumer Discretionary	++			+
Technology	+	+	-	++
Industrials	++			200
Materials	+			
Consumer Staples		=	+	++
Health Care				++
Energy			++	
Communication Services	1	+		(=)
Utilities		-	+	++

Economically sensitive sectors may tend to outperform, while more defensive sectors have tended to underperform. Making marginal portfolio allocation changes to manage drawdown risk with sectors may enhance riskadjusted returns during this cycle. Defensive and inflationresistant sectors tend to perform better, while more cyclical sectors underperform.

Since performance is generally negative in recessions, investors should focus on the most defensive historically stable sectors.

#### In a Growing Economy

Consider information technology.

It has had the highest volatility relative to all sectors over the past 20 years, which could boost portfolio performance.

It has often outperformed during the early and mid phases of the business cycle when the economy is growing.<sup>1</sup>

#### As the Economy Slows Down

Consider consumer staples, health care, and utilities sectors.

They usually outperformed during the late and recession phases of the business cycle when the economy is slowing or shrinking.<sup>1</sup>

They have had the lowest volatility relative to all sectors over the past 20 years, which may lower portfolio risk.





## Positions & Risks



<u>Positions</u>	<u>Risks</u>
Energy Stocks: Exxon Mobil Corp (XOM) EOG Resources, Inc. (EOG)	<ul> <li>Energy prices falling. Could be due to a recession, mean reversion, technology, etc.</li> <li>De-escalation of the Russia-Ukraine situation. Lifting sanctions against Russia.</li> <li>Russian Oil (Energy commodities) coming back into the standard Energy market pushing Energy prices down.</li> </ul>
Industrials (Aerospace & Defense): Northrop Grumman Corp (NOC) Lockheed Martin Corp (LMT)	<ul> <li>De-escalation of the Russia-Ukraine situation. Negative co-integral impact on Defense stock prices.</li> <li>NATO deals not closing, impacting future cash-flow negatively.</li> <li>Defense budget decrease, or stagnant.</li> </ul>
Macro Outlook	<ul> <li>We could underperform market rebound in the event of a soft landing, being a pausing of rate hikes, slowdown in inflation, and robust labor market.</li> <li>Chance of global escalation event. Fed pivot.</li> </ul>
Healthcare: UnitedHealthcare Group (UNH) Merck & Co., Inc. (MRK)	<ul> <li>Long Term R&amp;D pipeline failures, Potential for unfavorable U.S. regulations on drug and plan prices (mostly MRK)</li> <li>ESG concerns for clinical studies</li> </ul>





## Future Strategic Plan



- Aggressively follow the Macroeconomic development, inflation & interest rates situation. And then strategically:
  - Invest in Technology, Financials, Consumer Discretionary, and other sectors
    - Seek out opportunities here, in order to diversify portfolio
  - > Try to match & close the gap with S&P 500's sector weights
- Utilize the FRM team's unique 20% allocation to invest and seek out opportunities in the Derivatives & other tradeable markets
- Utilize our Average-Down risk model to re-balance existing positions in the portfolio
- Analyze already-invested sectors that are performing well and try to seek other opportunities if possible





## Thank You





# Appendix



## General Mills, Inc. (GIS)



#### Strenaths:

Salient Metrics: P/E Ratio

- Market Position: General Mills, Inc. (GIS) the leading global manufacturer and marketer of branded consumer foods across 6 continents.
  - Food-at-home channel represented about 85% of annual net sales. Food-away-from-home channel represented about 15% of net sales
  - Walmart is GIS's largest customer, 20% of consolidated net sales and 28% of North America Retail net sales.
- <u>Growth Plans:</u> GIS to divest up to 5% of its annual sales (mostly underperforming businesses), should drive 2%- 3% organic sales growth. Opportunity in Pet segment given the surge in higher-quality pet foods.
- <u>Cost and Operational Efficiency</u>: Net sales of \$19.0 billion increased 5% from the prior year; organic net sales were up 6%. Operating profit increased 11% to \$3.5 billion; constant-currency adjusted operating profit was up 2%. Operating cash flow increased 11% to \$3.3 billion.



: 18.20(TTM)

Net margin



## The Coca-Cola Company (KO)



#### Strengths:

- Market Position: The Coca-Cola Company (KO) world's largest nonalcoholic beverage company.
  - Carbonated Soft Drink volumes (+3.1%). Soft drink companies successfully passed price increases to consumers (U.S. price realizations rose 8.0% in 2021).
- Growth Plans: Mr. Quincey (CEO): the company is very focused on continuing to grow EPS in U.S. dollars.
- Cost and Operational Efficiency: Revenue increases of roughly 12% in 2022, 2% in 2023, and 4% in 2024, following a 17.1% increase in 2021.
- Forecast adjusted EPS of \$2.50 in 2022, \$2.70 in 2023, and \$2.80 in 2024, up from estimated \$2.32 in 2021 and \$1.95 in 2020.

