

# Estimating P/Es

MicNova Model Investment Club

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# Price/Earnings (P/E) ratio

- The P/E for a stock is computed by dividing the price of a stock (the "P") by the company's annual earnings per share (the "E").
- The P/E reflects how much an investor is willing to pay for \$1 of earnings (EPS).
- If a stock is trading at \$20 per share and its earnings per share are \$1, then the stock has a P/E of 20 ( $\$20/\$1$ ).
- If a stock is trading at \$20 a share and its earning per share are \$2, then the stock is said to be trading at a P/E of 10 ( $\$20/\$2$ ).

# Factors Influencing P/Es

- **Company Earnings:** The most direct factor affecting the P/E ratio is the company's earnings. If a company reports higher earnings or if future earnings are expected to increase, the P/E ratio can rise, assuming the stock price also increases. Conversely, if earnings fall or are expected to decrease, the P/E ratio can decline.
- **Market Sentiment:** Investor sentiment towards a company or the market as a whole can significantly impact P/E ratios. If investors are optimistic about a company's future growth, they might be willing to pay more for its stock, driving up the P/E ratio. This is often seen in tech or high-growth sectors.
- **Interest Rates:** Changes in interest rates can influence P/E ratios. Generally, lower interest rates make stocks more attractive compared to bonds, potentially leading to higher P/E ratios. Conversely, rising interest rates can lead to lower P/E ratios as stocks become less attractive.
- **Economic Conditions:** The overall economic environment plays a role in determining P/E ratios. In a strong economy, companies typically earn more, potentially leading to higher stock prices and P/E ratios. In a recession, the opposite can occur.

# Factors Influencing P/Es

- **Sector Trends:** Different sectors have different average P/E ratios. For example, technology stocks often have higher P/E ratios due to expected growth, while utility companies might have lower P/E ratios due to their stable but slow growth.
- **Regulatory Environment:** Changes in government policy or regulations can impact specific sectors, influencing P/E ratios. For example, increased regulation in an industry can reduce earnings potential, thereby impacting the P/E ratios of companies in that sector.
- **Company-Specific News:** Announcements such as product launches, earnings reports, mergers and acquisitions, or scandals can significantly impact a company's stock price and, consequently, its P/E ratio.
- **Inflation Expectations:** Inflation can erode the value of future earnings, which might lead to lower P/E ratios as investors anticipate lower real returns on their investments.
- **Global Events:** Events like geopolitical tensions, pandemics, or international trade relations can influence market sentiment broadly, impacting P/E ratios across different sectors and markets.
- **Comparative Analysis:** Sometimes, P/E ratios are influenced by the valuations of similar companies within a sector. If peer companies are trading at higher P/E ratios, it might impact the valuation of a company.

# P/E Reflects Investor Sentiment

- Enthusiasm on the part of investors can lead to P/E expansion—a period when investors' perceptions of a company **improve**, and as a result, they are willing to pay **more** for a dollar's worth of earnings.
- Conversely, when investors' perception of a stock **worsens** and they are looking to pay **less** for a dollar's worth of earnings, P/E contraction occurs. The stock's price falls (even though the earnings per share remains stable) and the P/E ratio moves lower.

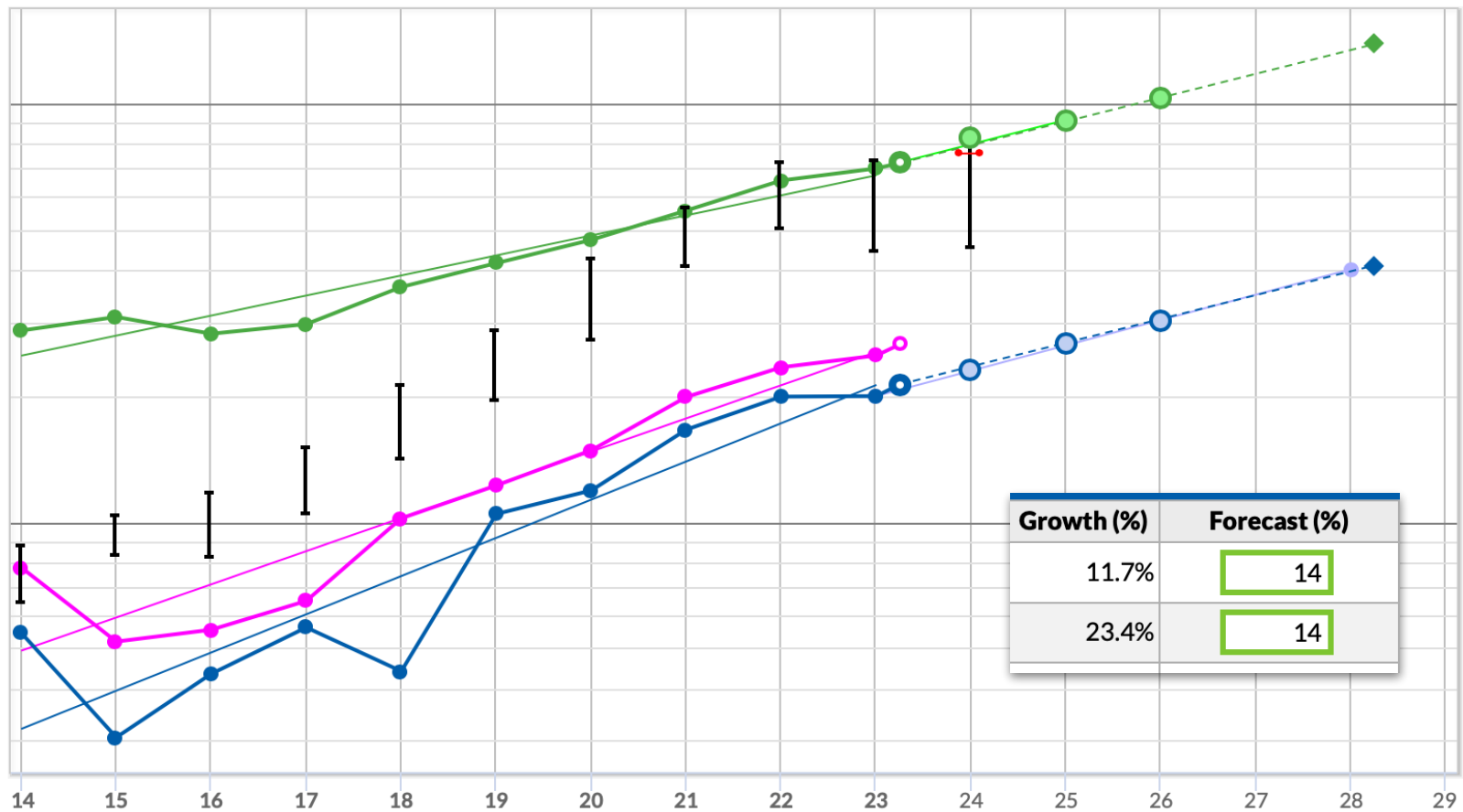
# Why P/E Estimates Matters

- Future price is determined by EPS growth, dividend yield & change in P/E
- $\text{Price} = \text{P/E} \cdot \text{EPS}$
- To complete an SSG, we need:
  - 5-year estimate of EPS
  - 5-year High P/E
  - 5-year Low P/E
- SSG calculates PAR using high P/E and average P/E

# Estimating Future P/E

# Example - Microsoft (MSFT)

Company: Microsoft (MSFT) Study Name: MSFT 10/28/19





# SSG Plus Shows 5 or 10 Years of Data

<input type="radio"/> 5 Years <input checked="" type="radio"/> 10 Years	A	B	C	D	E
Year	Price		Earnings	Price Earnings Ratio	
	High	Low	Per Share	High A / C	Low B / C
2014	42.3	30.8	2.63	16.1	11.7
2015	50.0	40.1	1.48	33.8	27.1
2016	56.9	39.7	2.10	27.1	18.9
2017	72.9	50.4	2.71	26.9	18.6
2018	102.7	68.0	2.13	48.2	31.9
2019	138.4	94.0	5.06	27.4	18.6
2020	204.4	130.8	5.76	35.5	22.7
2021	271.6	196.3	8.05	33.7	24.4
2022	349.7	241.5	9.65	36.2	25.0
2023	351.5	213.4	9.68	36.3	22.0
<b>5 YEAR AVERAGE</b>		<b>175.2</b>		<b>33.8</b>	<b>22.5</b>
<b>10 YEAR AVERAGE</b>		<b>110.5</b>		<b>32.1</b>	<b>22.1</b>
CURRENT/TTM			10.33	37.2	21.2

CURRENT PRICE EARNINGS RATIO: 35.6

5 YEAR AVERAGE PRICE EARNINGS RATIO: 28.2

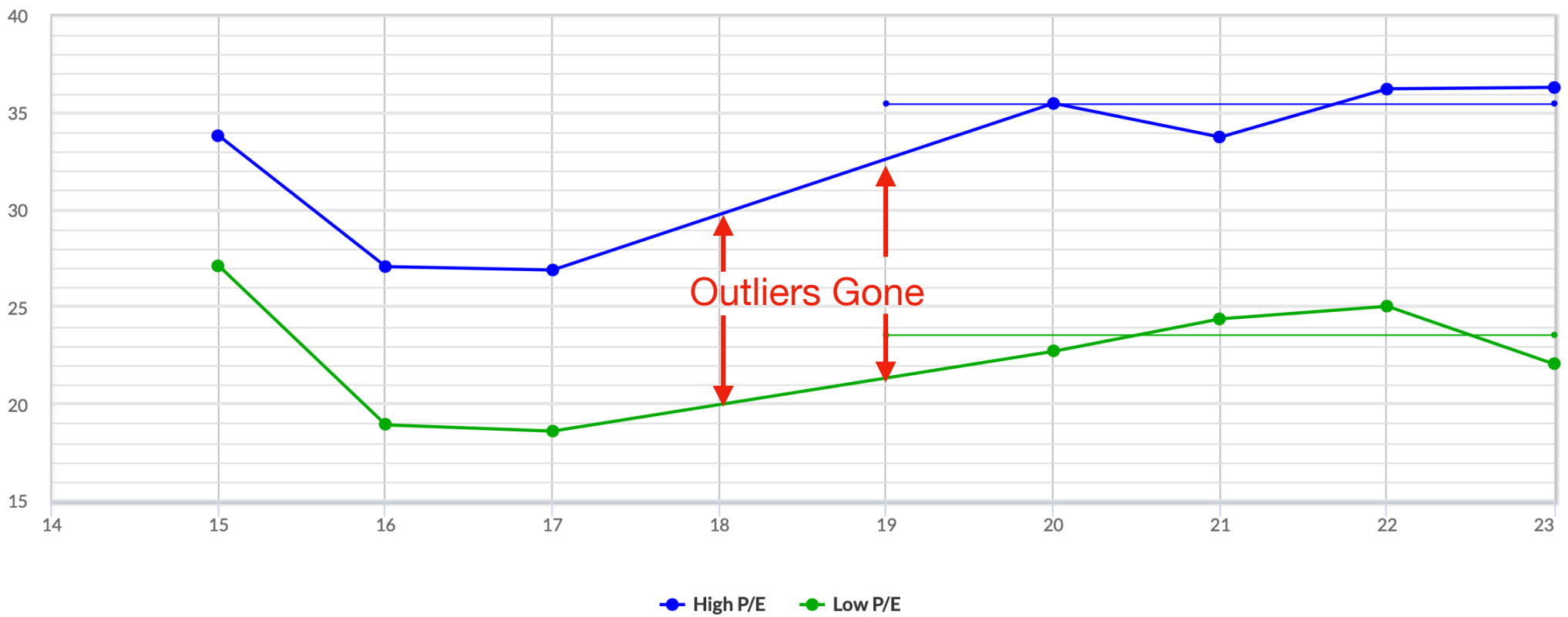
# Eliminate Outliers

<input type="radio"/> 5 Years <input checked="" type="radio"/> 10 Years	A	B	C	D	E
Year	Price		Earnings	Price Earnings Ratio	
	High	Low	Per Share	High A / C	Low B / C
2014	42.3	30.8	2.63	16.1	11.7
2015	50.0	40.1	1.48	33.8	27.1
2016	56.9	39.7	2.10	27.1	18.9
2017	72.9	50.4	2.71	26.9	18.6
2018	102.7	68.0	2.13	48.2	31.9
2019	138.4	94.0	5.06	27.4	18.6
2020	204.4	130.8	5.76	35.5	22.7
2021	271.6	196.3	8.05	33.7	24.4
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<b>5 YEAR AVERAGE</b>		<b>175.2</b>		<b>35.4</b>	<b>23.5</b>
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CURRENT/TTM			10.33	37.2	21.2

# Price / Earnings Chart

Show / Hide Price/Earnings Chart

Compare Peers



# Determining the 5-Year High and Low Price

## ▶ 4. EVALUATING RISK and REWARD over the next 5 years

### A. HIGH PRICE - NEXT 5 YEARS

Avg. High P/E: **35.0** X Estimate High Earnings / Share: **19.89** = Forecasted High Price: **696.1**

### B. LOW PRICE - NEXT 5 YEARS

(a) Avg. Low P/E: **23.0** X Estimate Low Earnings/Share **8.94** = Forecasted Low Price: **205.6**

(b) Avg. Low Price of Last 5 Years: **175.2**

(c) Recent Market Low Price: **213.4**

2022 Low Stock Price: **241.5**

52 Week Low Stock Price: **219.3**

2023 Low Stock Price: **213.4**

(d) Price Dividend Will Support: 
$$\frac{\text{Indicated Dividend}}{\text{High Yield}} = \frac{3.00}{1.9\%} = 156.6$$

Selected Forecasted Low Price: **205.6**

# Use the 5-Year High P/E Estimate Here

## ▶ Determine High Price - Next 5 Years

### Forecast High Stock Price

5 Year Average High P/E: **35.4**

5 Year Average P/E: **29.5**

Current P/E: **35.6**

Your Average High P/E Forecast:  X High EPS Forecast:  = High Stock Price Forecast:

Closing Price (01/05/24): **367.75**

[Update Study](#)

# Use the 5-Year Low P/E Estimate Here

**▶ Determine Low Price - Next 5 Years**

**Select Low Stock Price Forecast**

Your Low Stock Price Forecast:

**Low P/E X Low EPS Forecast:** Update Low EPS Forecast using: **Auto Update to TTM EPS** (click to toggle)

Average Low P/E Forecast:  X Low EPS Forecast:  = Forecast Low Stock Price:

5 Year Average Low P/E: **23.5** TTM EPS: **10.33** Closing Price (01/05/24): **367.75**

5 Year Average P/E: **29.5**

Current P/E: **35.6**

Recent Market Low Price:

2022 Low Stock Price: **241.5** 52 Week Low Stock Price: **219.3**

2023 Low Stock Price: **213.4**

Note: 5-Year low price can also be estimated using the recent low price or the price that the dividend can support.

## ▶ 5. FIVE-YEAR POTENTIAL

### A. CURRENT YIELD

$$\frac{\text{Indicated Annual Dividend}}{\text{Closing Price}} = \frac{3.00}{367.75} = 0.0082 = 0.8\%$$

### B. AVERAGE YIELD - USING FORECAST HIGH P/E

$$\frac{\text{Avg. \% Payout}}{\text{Forecast High P/E}} = \frac{63.5}{35.0} = 1.8\%$$

### AVERAGE YIELD - USING FORECAST AVERAGE P/E

$$\frac{\text{Avg. \% Payout}}{\text{Forecast Average P/E}} = \frac{63.5}{29.00} = 2.2\%$$

### C. COMPOUND ANNUAL RETURN - USING FORECAST HIGH P/E

Annualized Price Appreciation	13.6%
Average Yield	1.8%
Annualized Rate of Return	15.4%

### COMPOUND ANNUAL RETURN - USING FORECAST AVERAGE P/E

Annualized Price Appreciation	9.4%
Average Yield	2.2%
Annualized Rate of Return	11.6%

Here are the key formulas:

Price = P/E · EPS

Div Yield = (EPS · PO%) / Price

Price Appr =  $(P_5/P_0)^{(1/5)} - 1$

PAR = Price Appr + Div Yield

# **Analysts Estimates**





### Expanded Ratio Analysis

	2023	2022	2021	2020
Price/Sales	12.01	9.77	12.26	10.93
Price/EBITDA	24.94	19.76	25.50	23.96
Price/Pretax Income	28.49	23.13	28.99	29.48
P/E Ratio	34.71	27.89	33.99	35.33
Avg. Diluted Shares Outstg. [M]	7,472.00	7,540.00	7,608.00	7,683.00

Figures based on fiscal year-end price

### Wall Street Consensus Estimates

Fiscal Year	Avg Est.	High Est.	Low Est.	# of Est.	Est. P/E
2025	12.88	14.06	12.10	36	29.14
2024	11.21	12.14	10.80	36	33.49
<b>2025 vs. 2024</b>	<b>▲ 15%</b>	<b>▲ 16%</b>	<b>▲ 12%</b>	<b>N/A%</b>	<b>▼ -13%</b>

Source: CFRA Report for MSFT dated Dec. 30, 2023

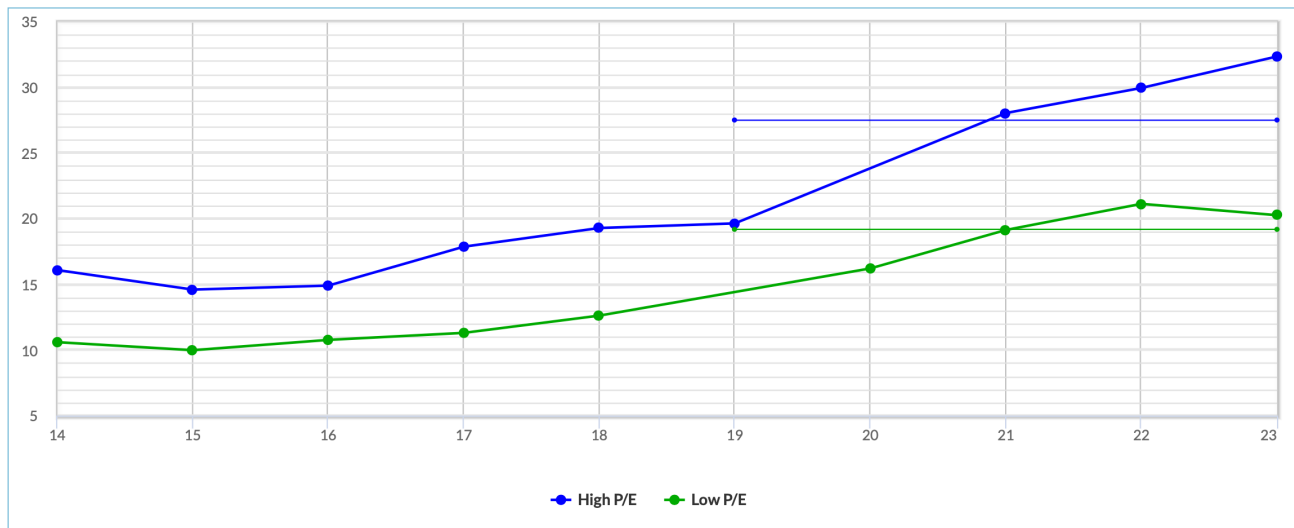
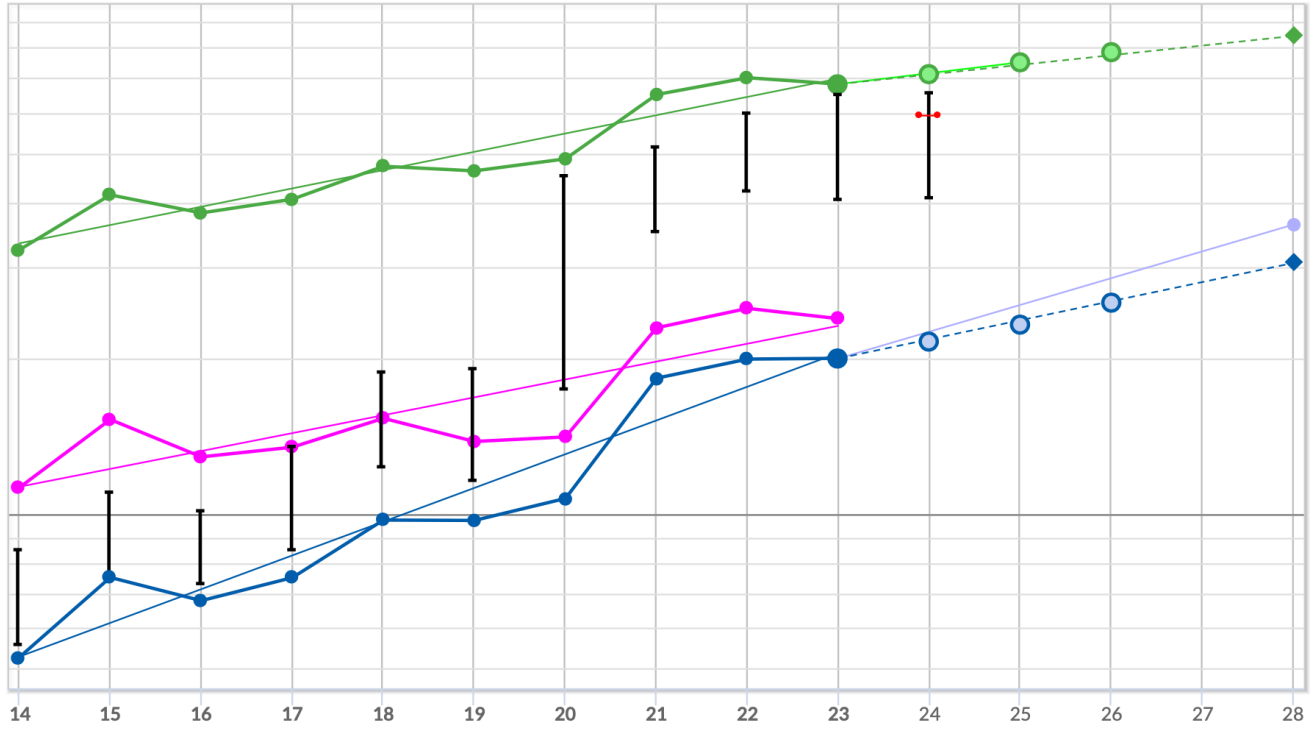
# VALUE LINE

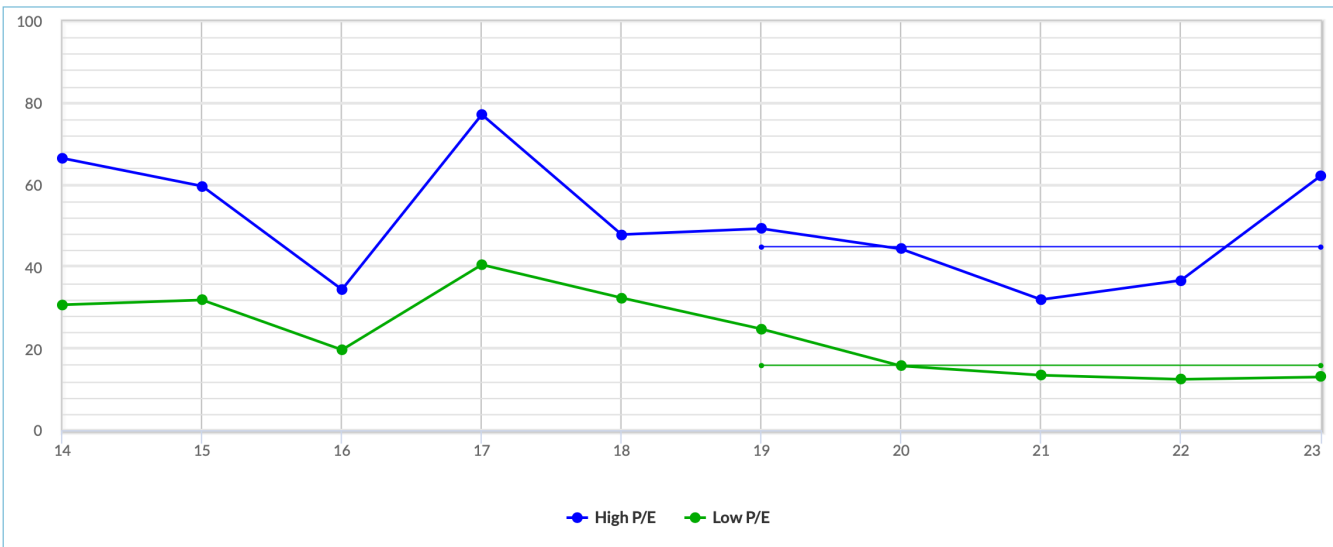
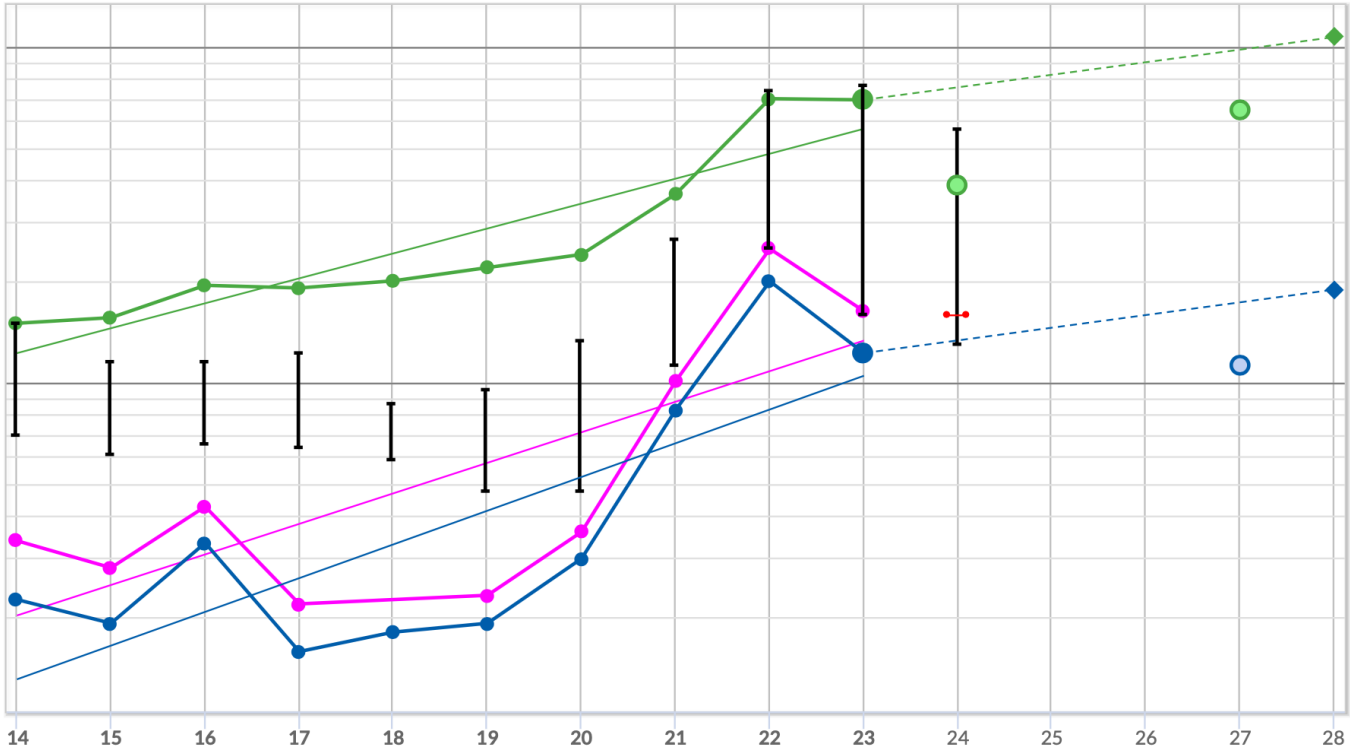
<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>© VALUE LINE PUB. LLC</b>	<b>26-28</b>
11.78	12.54	14.38	16.47	18.89	22.36	26.56	28.51	<b>31.75</b>	Revenues per sh <sup>A</sup>	<b>40.85</b>
3.71	4.26	5.28	6.35	7.54	9.70	11.24	11.73	<b>12.60</b>	“Cash Flow” per sh	<b>17.40</b>
2.79	3.08	3.88	4.75	5.76	8.05	9.21	9.81	<b>11.00</b>	Earnings per sh <sup>B</sup>	<b>15.50</b>
1.44	1.56	1.68	1.84	2.04	2.24	2.48	2.72	<b>3.10</b>	Div'ds Decl'd per sh <sup>E■</sup>	<b>3.80</b>
1.07	1.05	1.52	1.82	2.04	2.74	3.20	3.78	<b>3.80</b>	Cap'l Spending per sh	<b>3.80</b>
9.22	9.39	10.77	13.39	15.63	18.88	22.31	22.75	<b>29.05</b>	Book Value per sh <sup>D</sup>	<b>34.00</b>
7808.0	7708.0	7677.0	7643.0	7571.0	7519.0	7464.0	7432.0	<b>7400.0</b>	Common Shs Outst'g <sup>C</sup>	<b>7350.0</b>
18.1	20.2	22.1	23.7	27.4	28.3	32.2	27.3		Avg Ann'l P/E Ratio	<b>23.5</b>
.95	1.02	1.19	1.26	1.41	1.53	1.86	1.56		Relative P/E Ratio	<b>1.30</b>
2.9%	2.5%	2.0%	1.6%	1.3%	1.0%	.8%	1.0%		Avg Ann'l Div'd Yield	<b>1.0%</b>

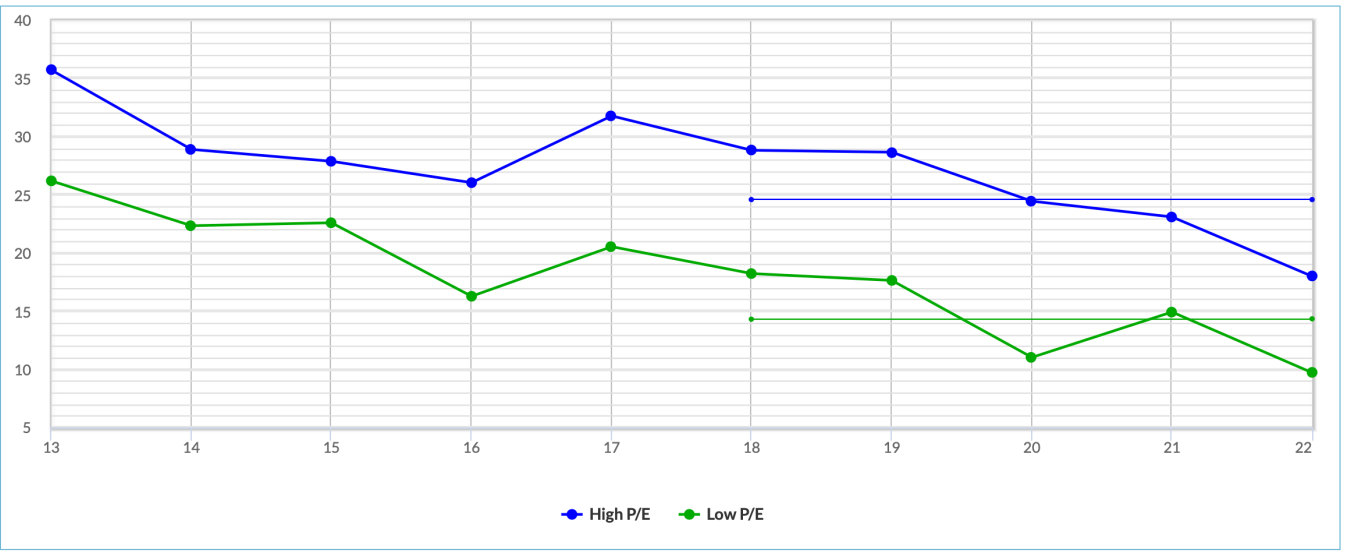
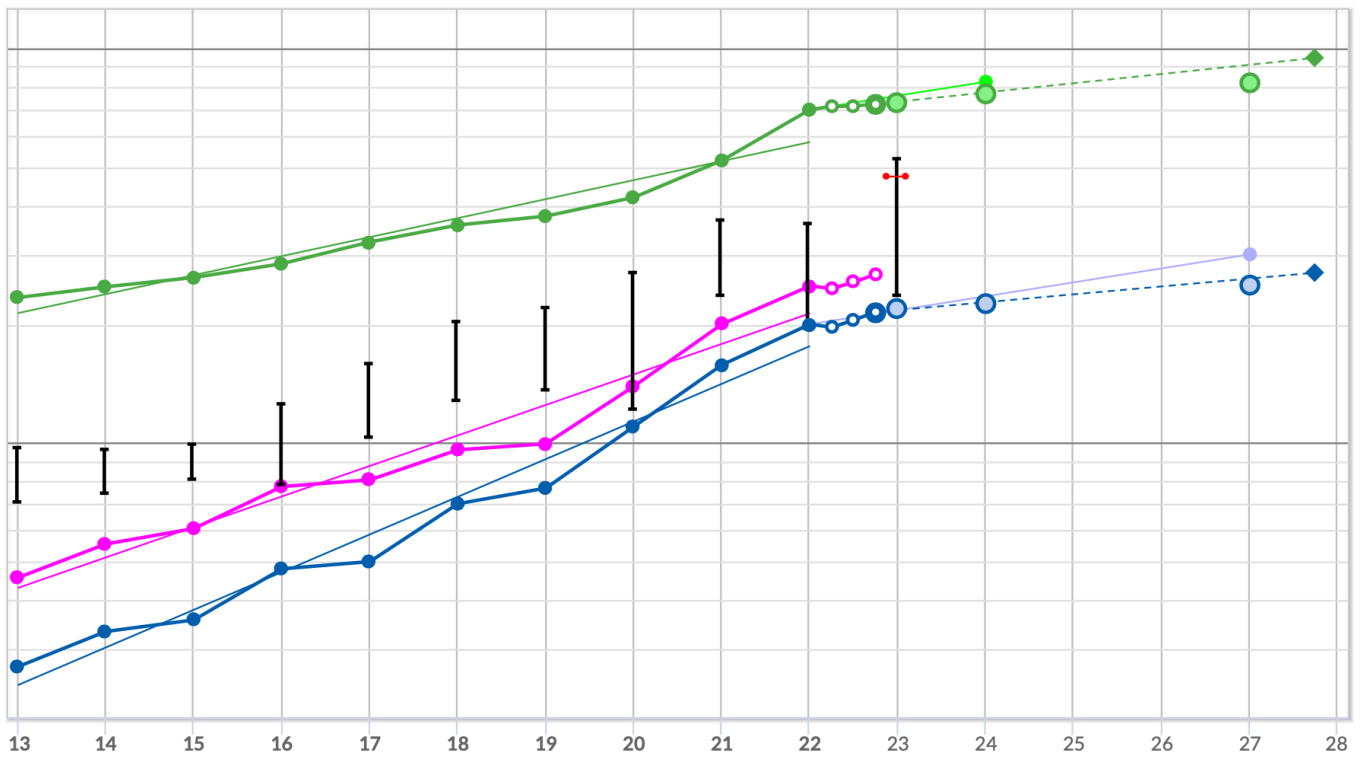
Source: Value Line Report for MSFT dated Nov. 3, 2023

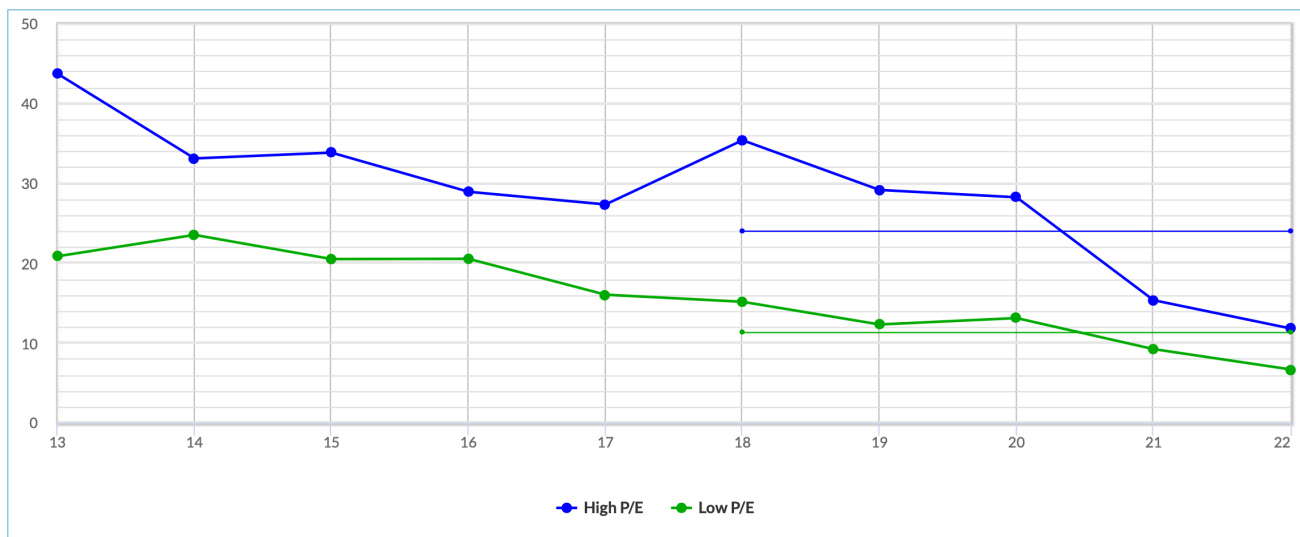
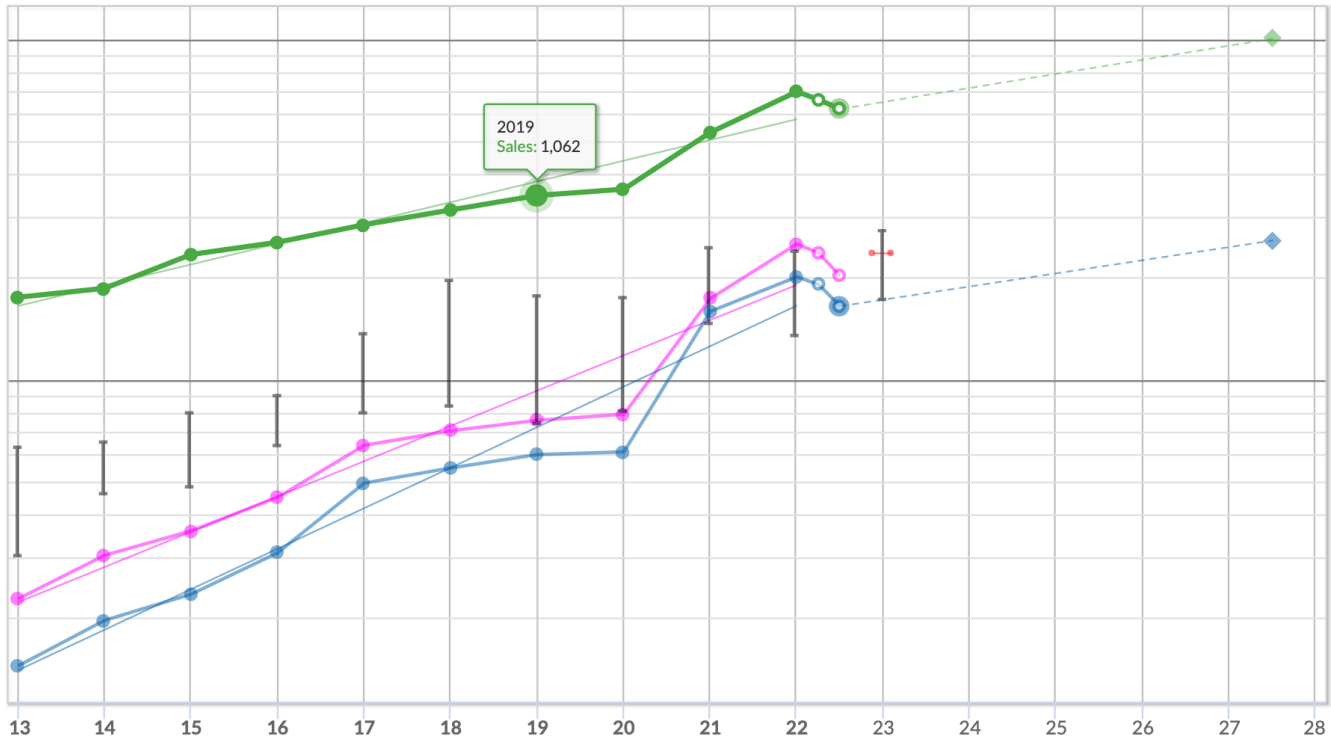
# **Look for P/E Trends**

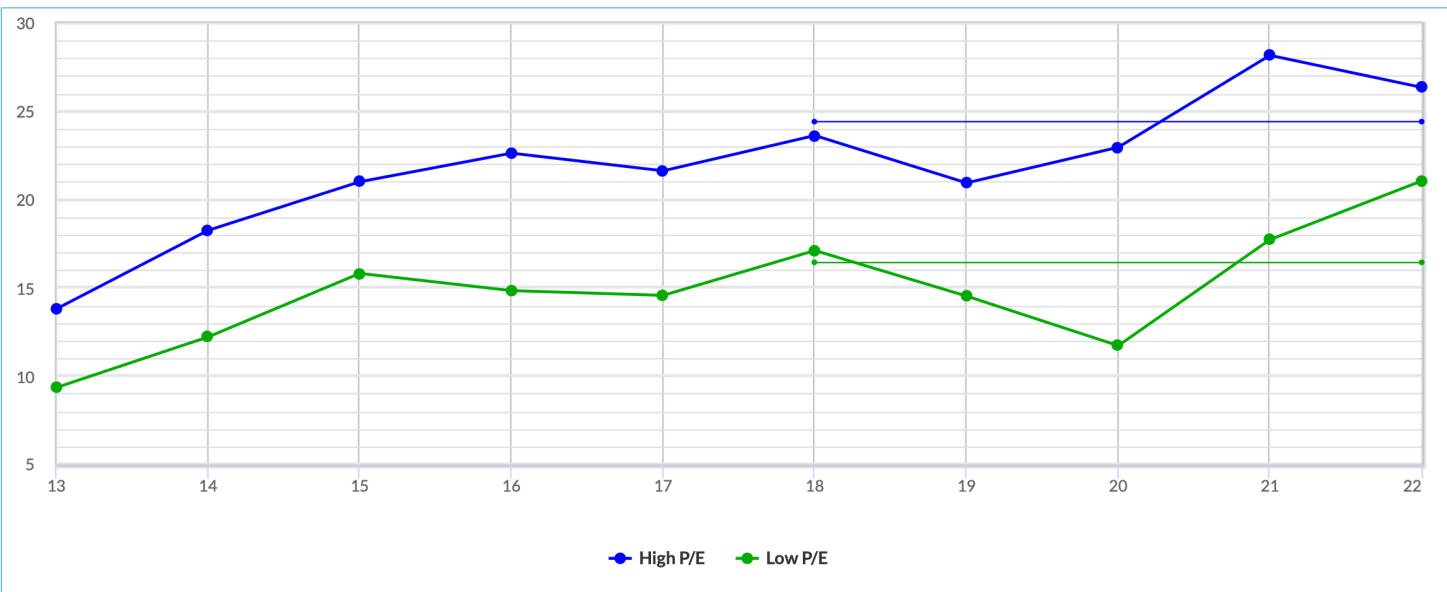
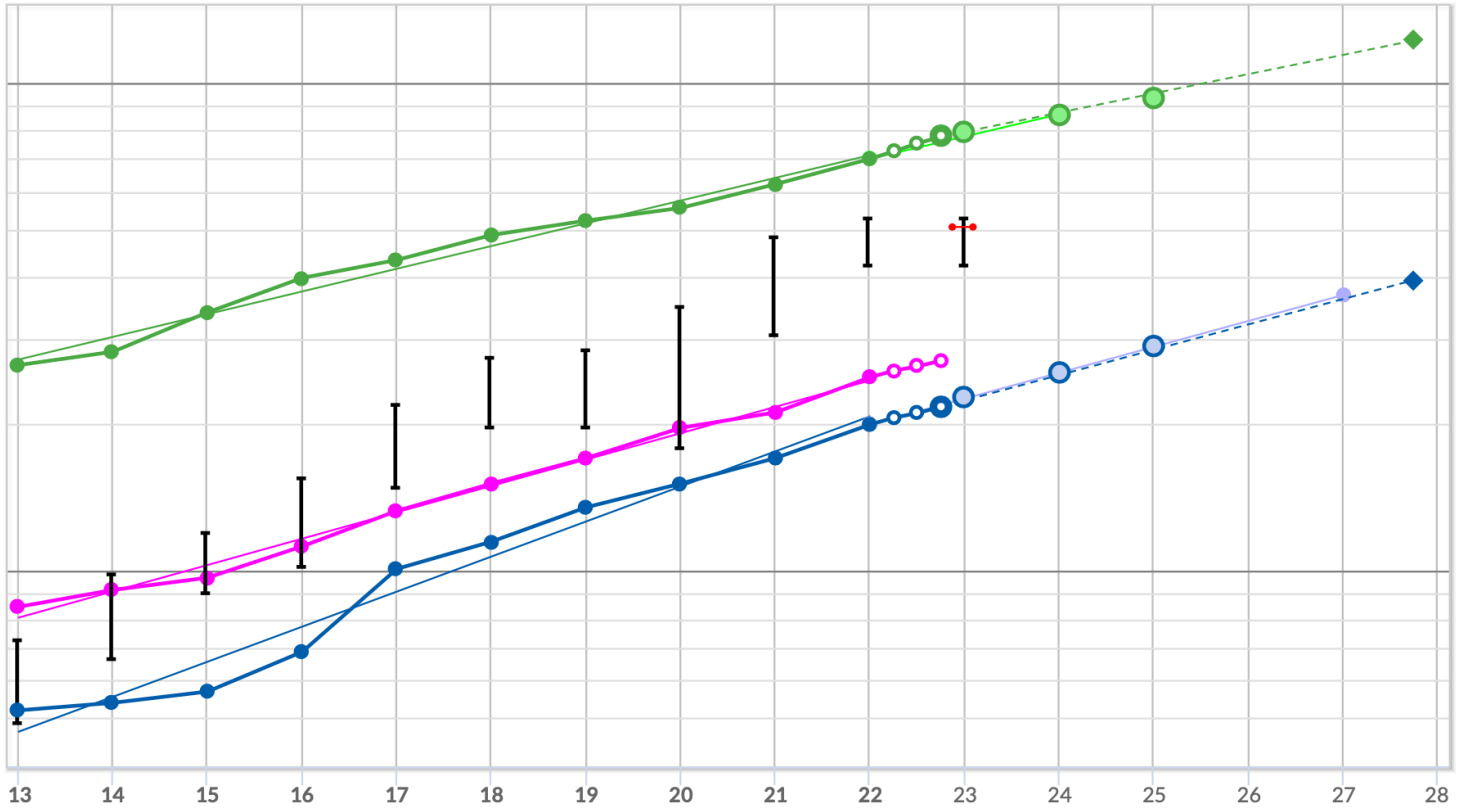
**Mixed? Increasing? Stable? Decreasing?**













**Questions?**