



Versus



Microsoft

EXECUTIVE SUMMARY

With Apple's recent announcement of a 4-for-1 stock split coming at the end of August 2020 and Microsoft in talks to purchase the hottest new social media app, TikTok, I decided to compare the two technology giants.

This summary will show which company is managing their finances better, which company is valued higher on the stock market, and which company is overall a better investment choice for potential shareholders.

Although Apple is the largest and most valuable company in the world with a current market capitalization of \$1.97 Trillion, Microsoft, with a \$1.58 Trillion market cap, held its own against the world's leader resulting in a close comparison between the two companies.

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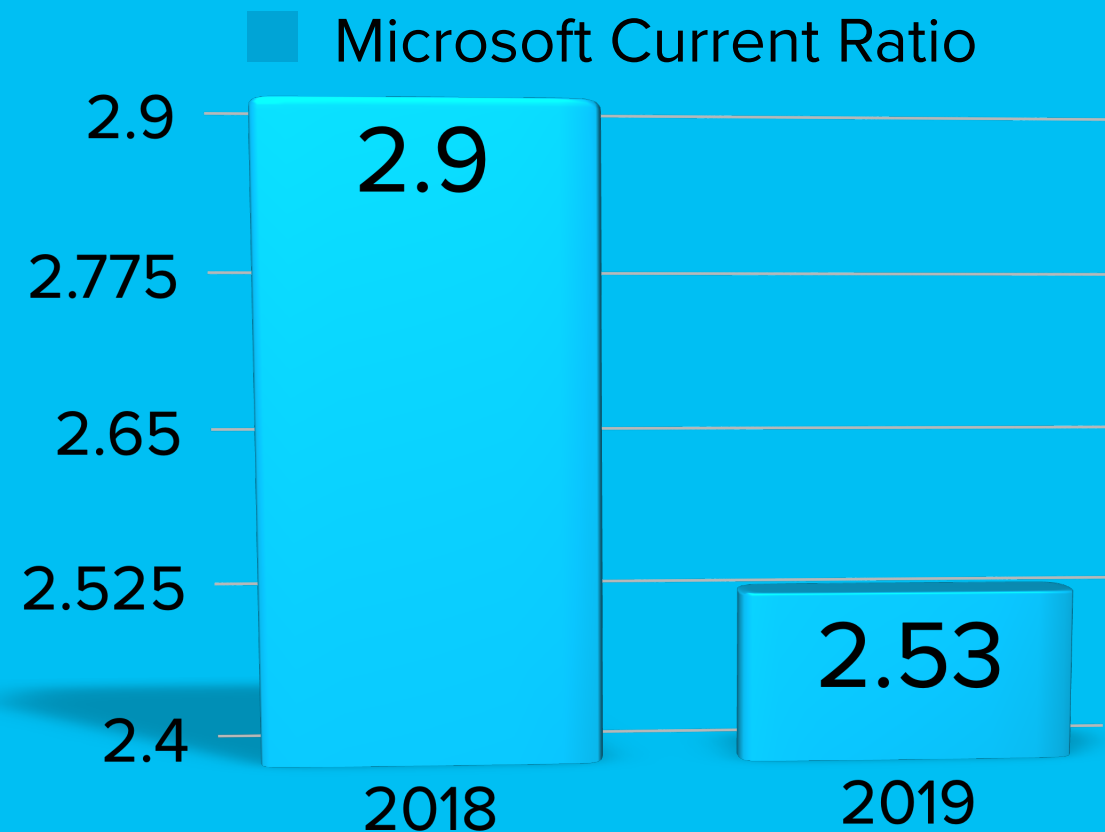
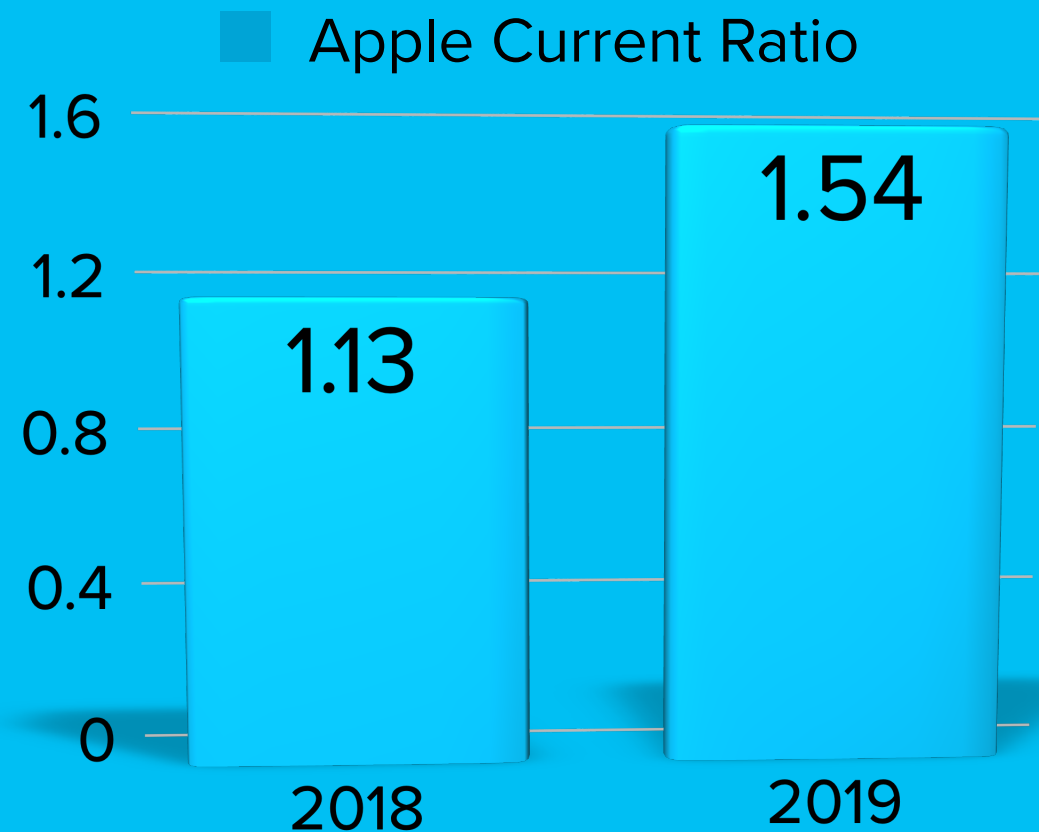
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LIQUIDITY

— Current Ratio

Apple's current ratio increased by 35% between 2018 and 2019; largely due to increasing their current assets by \$31B while their current liabilities only increase by \$10B. By end of 2019, Apple had 1.54 times more current assets than current liabilities, which shows they have more than enough current assets to pay for their current liabilities.

Just like Apple, Microsoft has over \$100B in current assets; however, Microsoft's current liabilities are much lower than Apple. Thus, Microsoft has a much higher current ratio. At the end of Apple's 2019 fiscal year, their current liabilities totaled \$105B, while Microsoft's current liabilities totaled \$69B. Although Microsoft's current ratio decreased between 2018 and 2019, keeping their current liabilities much lower than their current assets puts them in a great liquidity position.

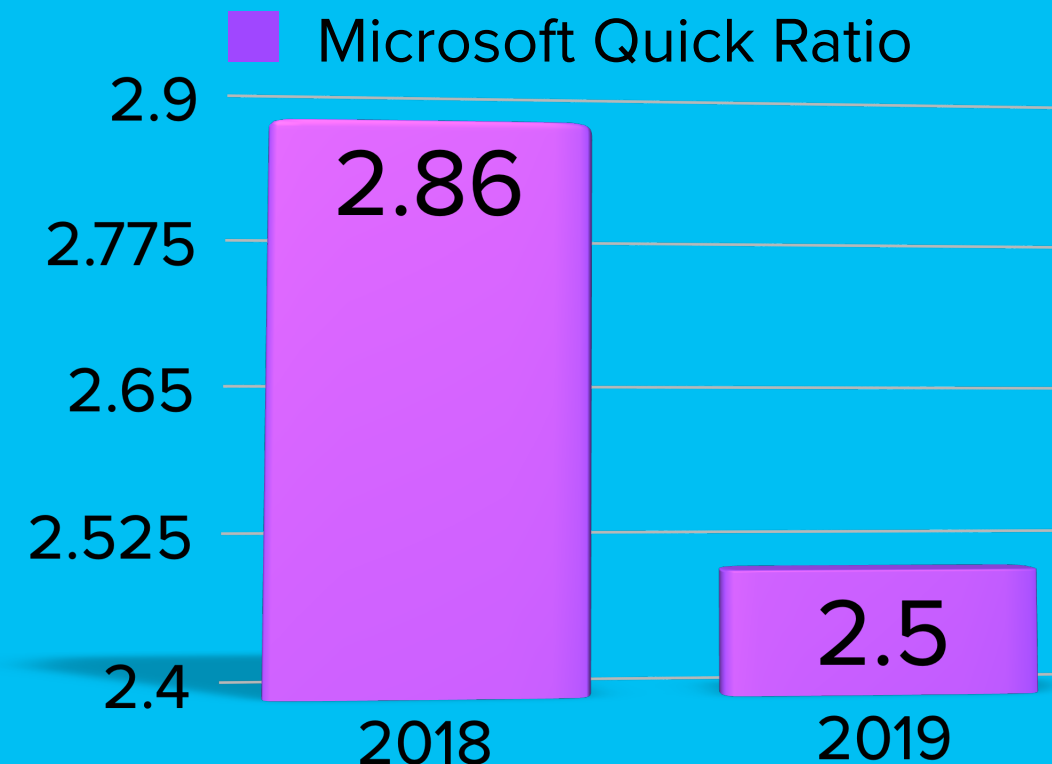
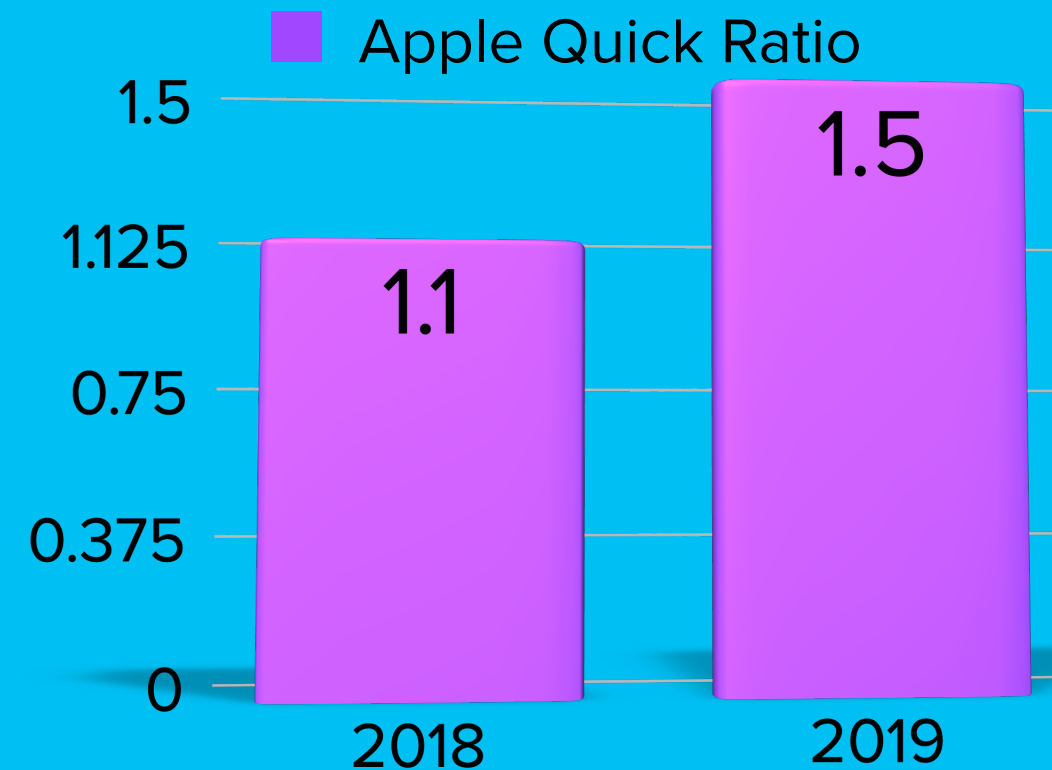


— Quick Ratio

While the current ratio includes all current assets, the quick ratio excludes inventory to show if a company can pay off current liabilities immediately with liquid cash if needed.

Apple's quick ratio mirrors their current ratio with 1.5 times more current assets excluding inventory than their current liabilities as of the end of 2019. This indicates that most of Apple's current assets are liquid.

As of the end of Microsoft's 2019 fiscal year, they increased their current assets excluding inventories 1.04 times. However, their current liabilities increased by 1.19x between 2018 and 2019. This led to the decrease in their quick ratio. Although their current liabilities increased at a higher rate than their current assets excluding inventories, their assets greatly outweighed their liabilities and led to a much higher quick ratio than Apple.

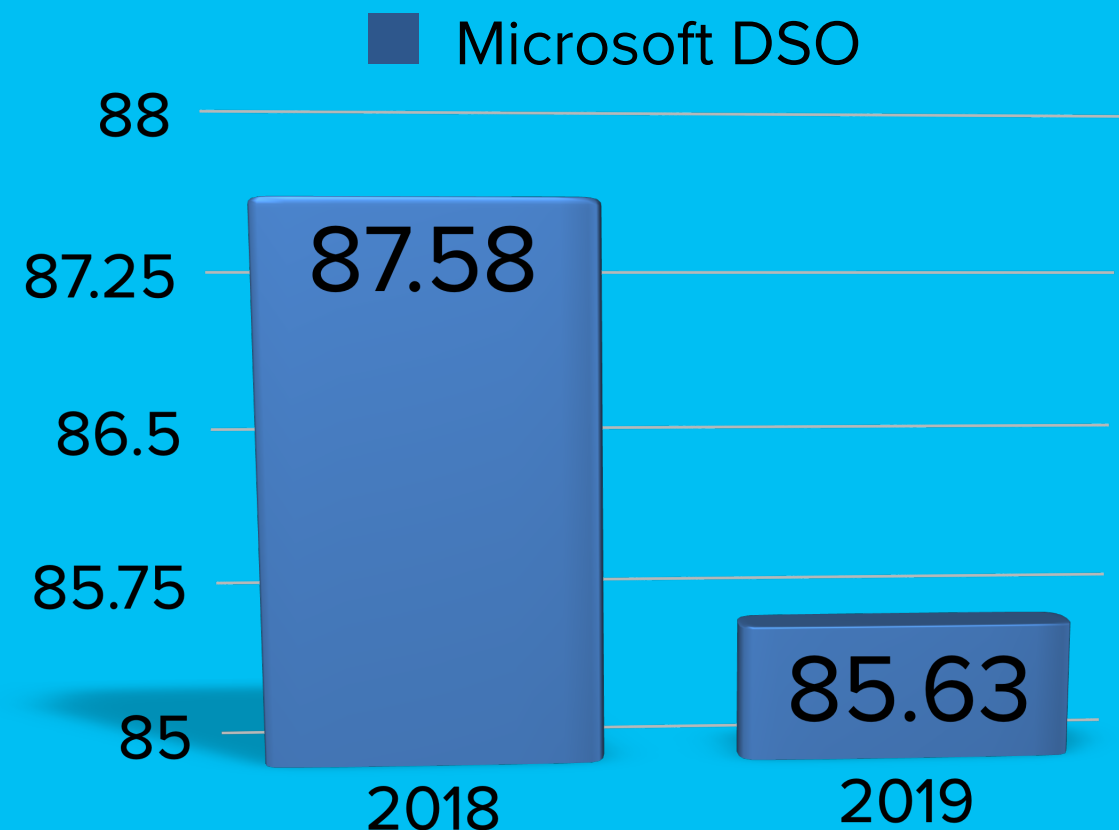


■ **Days Sales Outstanding (DSO)**

The DSO ratio shows how many days are between making a sale and collecting payment; thus, letting us know how long it takes to make accounts receivable liquid.

Apple's DSO increased by a day between 2018 and 2019 due to a \$5B decrease in sales. However, they have a much lower DSO than Microsoft.

Microsoft's DSO is 2.66 times higher than Apple; taking 85.63 days to receive payment from their accounts receivables. Microsoft is trending positively with a 2 day decrease between 2018 and 2019; however, an 85 DSO is still way too high. Even though both Apple and Microsoft have \$20-30B in accounts receivables, Microsoft's sales is \$134.33B lower than Apple. This is the main reason why their DSO is much higher than Apple. Microsoft's accounts receivable is 23% of their sales while Apple's accounts receivables is only 8.8% of their sales.

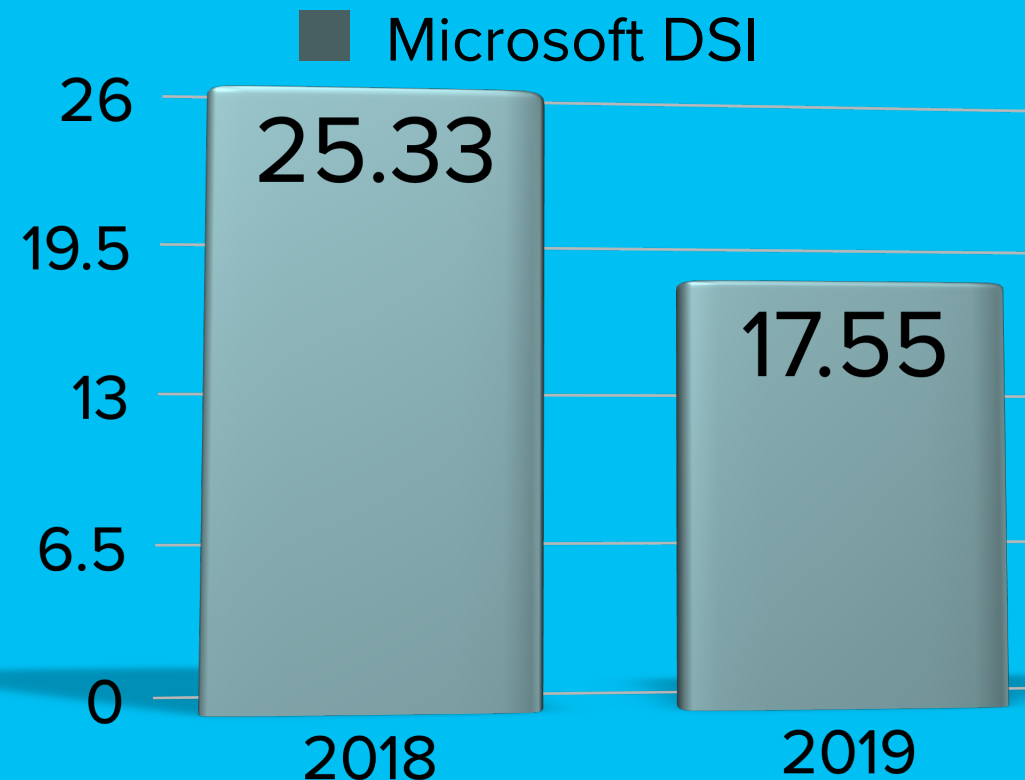
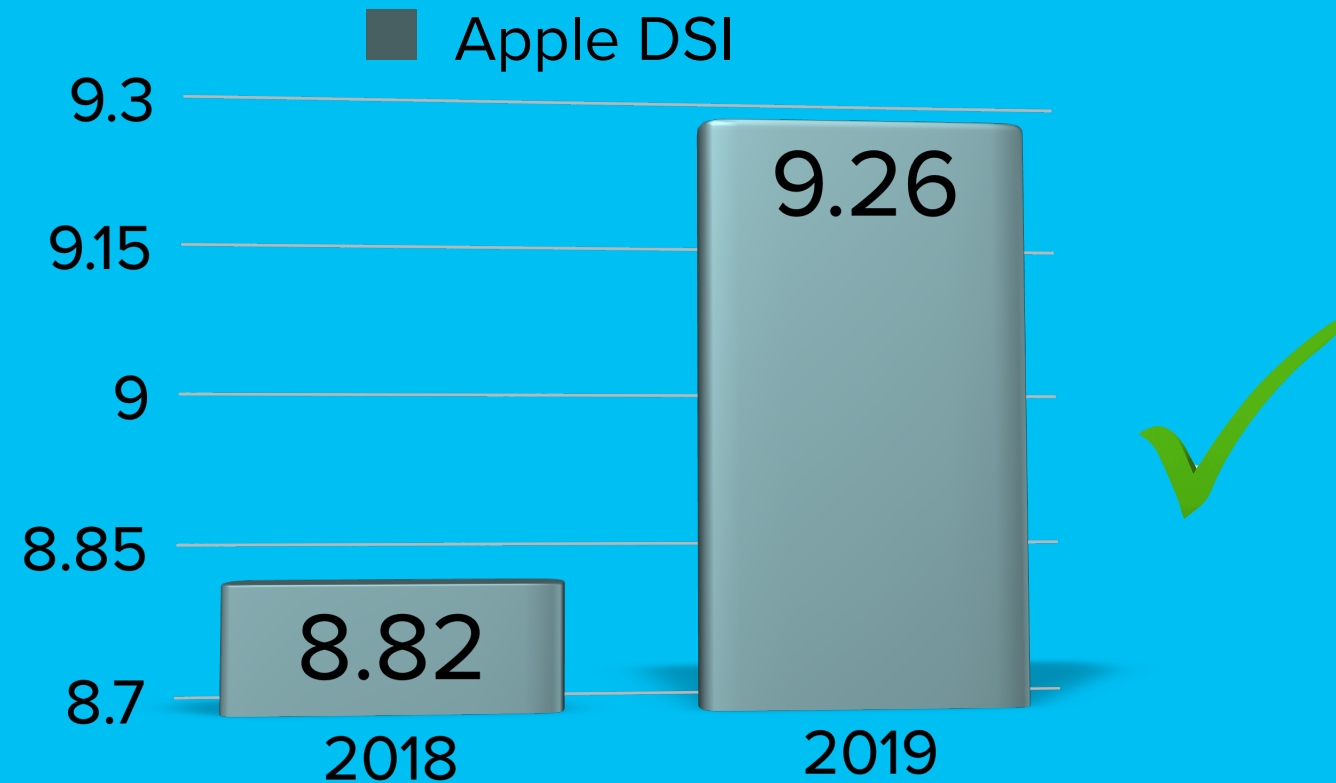


— Days Sales In Inventory (DSI)

DSI reflects the quality of inventories as a source of liquidity by exhibiting the days inventory stays in stock before being sold.

Although Apple's DSI increased by a day between 2018 and 2019, it is still much lower than Microsoft with Apple only taking 9.26 days to sell inventory. This indicates that Apple's potential to become more liquid relies on them decreasing DSO instead.

Microsoft's DSI is trending positively with a 7 day decrease between 2018 and 2019, which shows they are addressing the higher DSI. With a higher DSI and DSO, it takes Microsoft almost twice as long to sell inventory and almost 3 times as long to receive cash after a sell. This is very risky for Microsoft's liquidity. Microsoft's liquidity strength is their ability to pay current liabilities with current assets, while Apple's strength is their ability to receive cash from sells and sell inventory quicker.



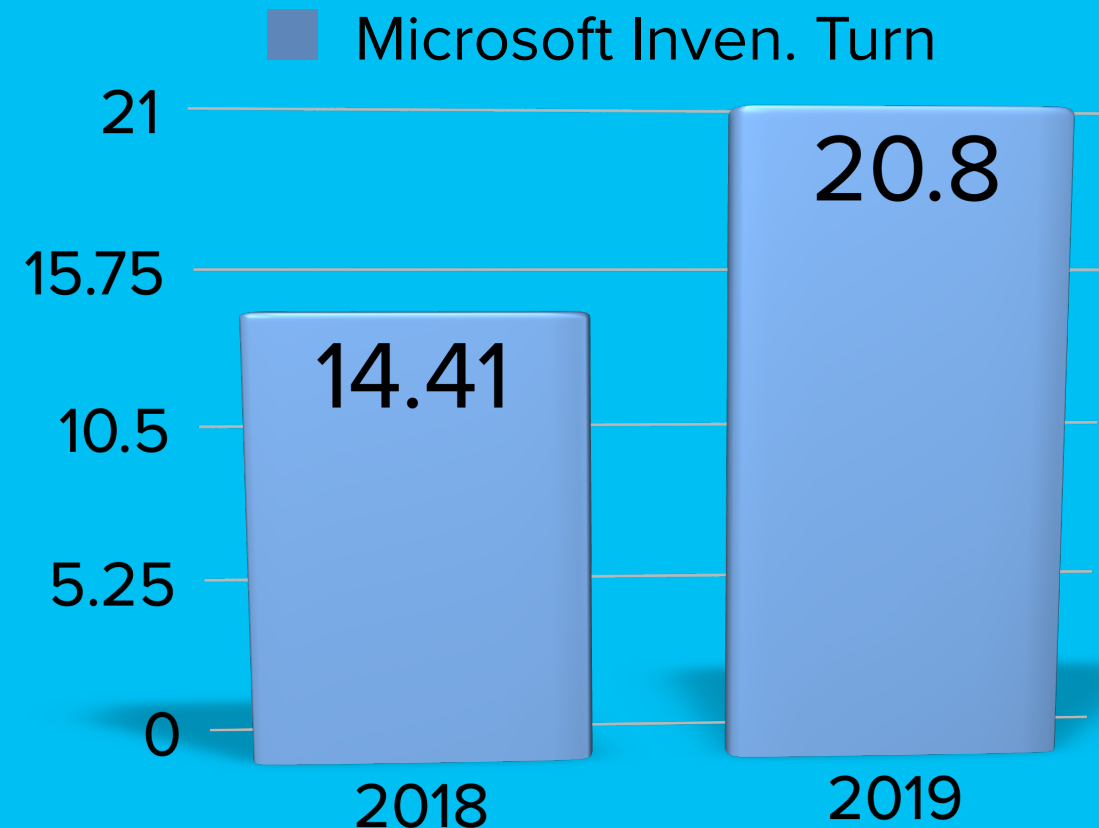
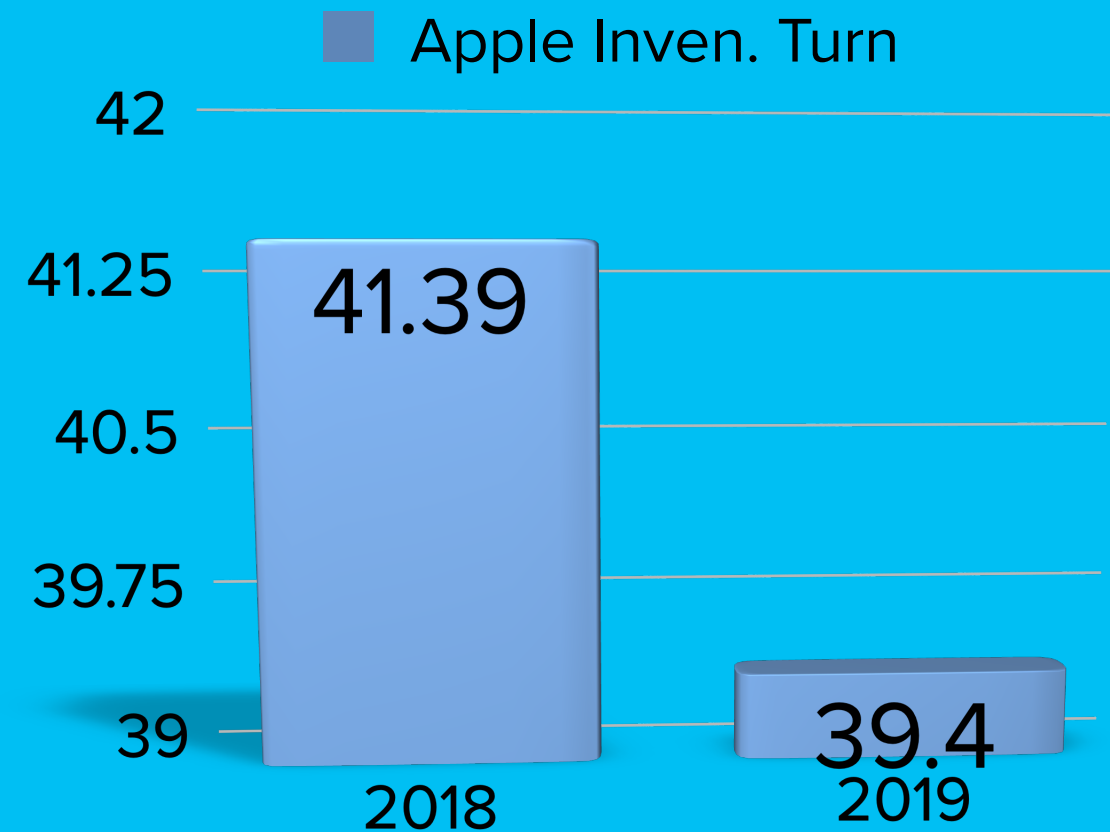
ASSET MANAGEMENT

— *Inventory Turnover*

Inventory turnover is an efficiency ratio that displays how quickly a company can get rid of its total inventory per year. It is beneficial for a company to generate revenue from cost of sales than from inventory, so COGS (cost of goods sold) should be higher than inventory. This is the main reason why Apple's inventory turnover is so much higher than Microsoft.

At the end of the 2019 fiscal year, Apple's COGS was \$161B, while Microsoft's COGS was \$42B. With both companies having inventory less than \$5B, Apple's inventory turnover was two times more than Microsoft.

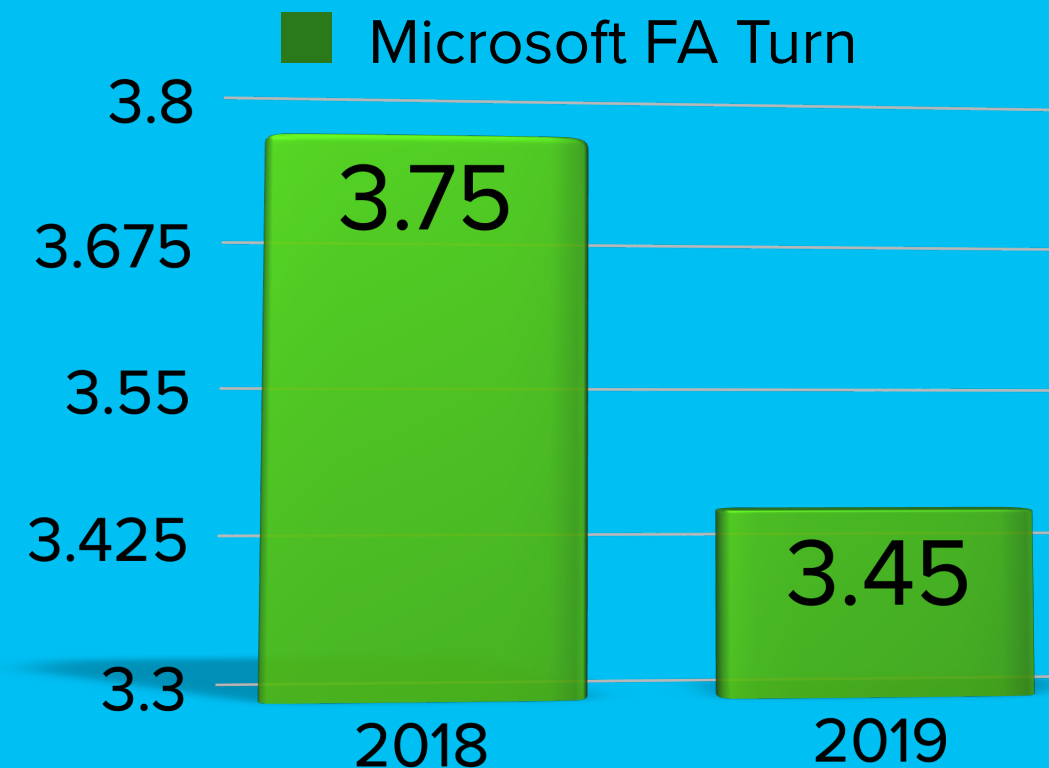
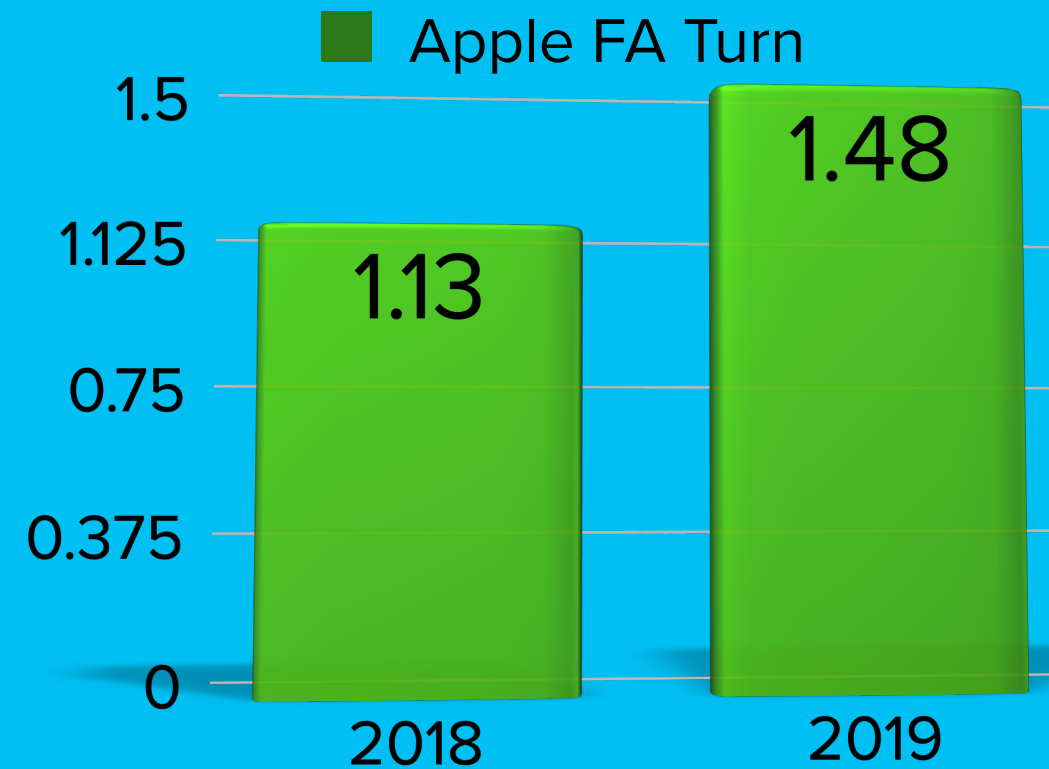
This means that Apple sells its entire inventory 39.4 times per year, while Microsoft sells its inventory only 20.8 times per year. However, Microsoft seems to be addressing its low inventory turnover based on the increase between 2018 and 2019.



Fixed Asset Turnover

Although Apple has a higher inventory turnover, Microsoft has a higher fixed assets turnover. Thus, Microsoft uses its goodwill and equipment more efficiently than Apple. Apple has higher sales than Microsoft, but Microsoft has lower net fixed assets to manage; therefore, Microsoft is able to generate \$3.45 in sales for every \$1 in fixed assets.

Apple can increase their fixed assets turnover by either increasing sales or decreasing new fixed assets. Apple's sales as of 2019 were \$260B, twice as much as Microsoft. Therefore, the best suggestion to increase Apple's fixed asset turnover would be to decrease their fixed assets.

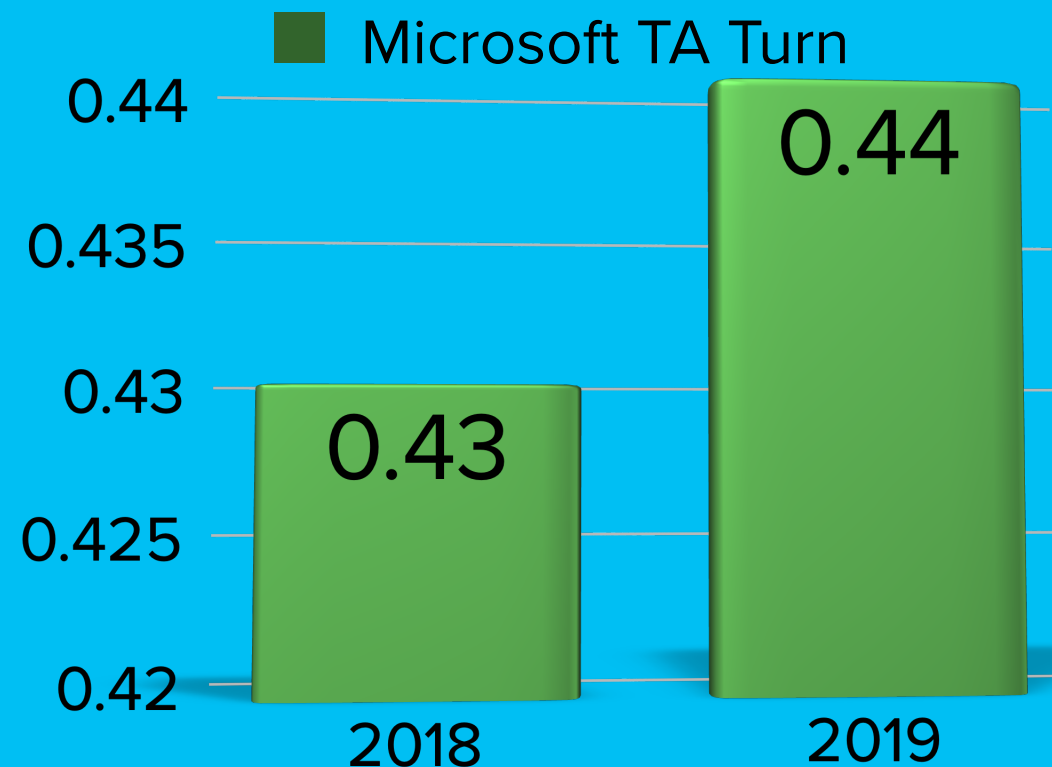
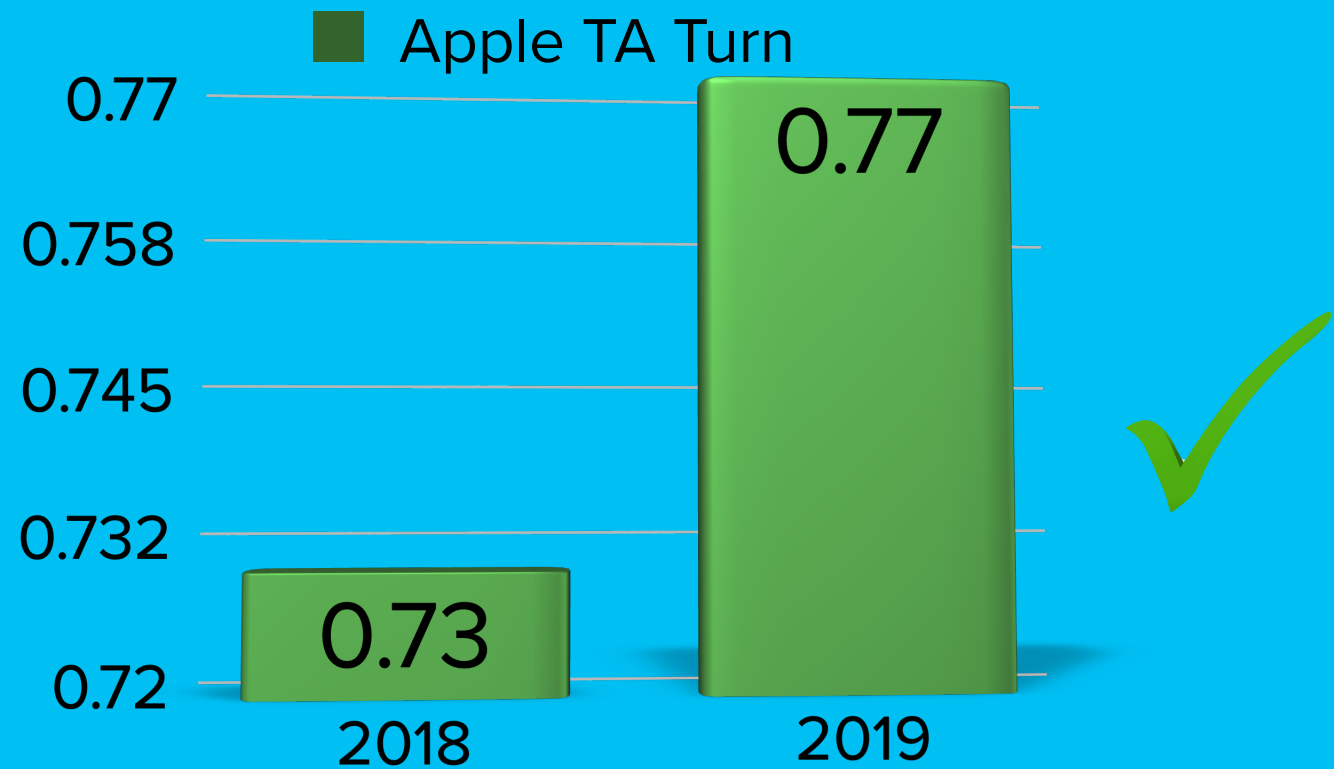


— **Total Assets Turnover**

As stated previously, Apple has a better inventory turnover while Microsoft has a better fixed asset turnover. However when considering all assets, Apple comes out on top with a higher total assets turnover.

It is expected that a company will have more assets than sales, so most companies will have a TA turnover of less than 1. Apple has a great TA turnover of 0.77, which means Apple is utilizing all of its assets very efficiently to generate sales.

Microsoft, on the other hand, should focus on how they can better use their assets to increase sales. Since they already do a great job at utilizing their fixed assets, Microsoft can manage their assets better by increasing their inventory turnover. In other words, figure out a way to sell more inventory at a faster rate per year.



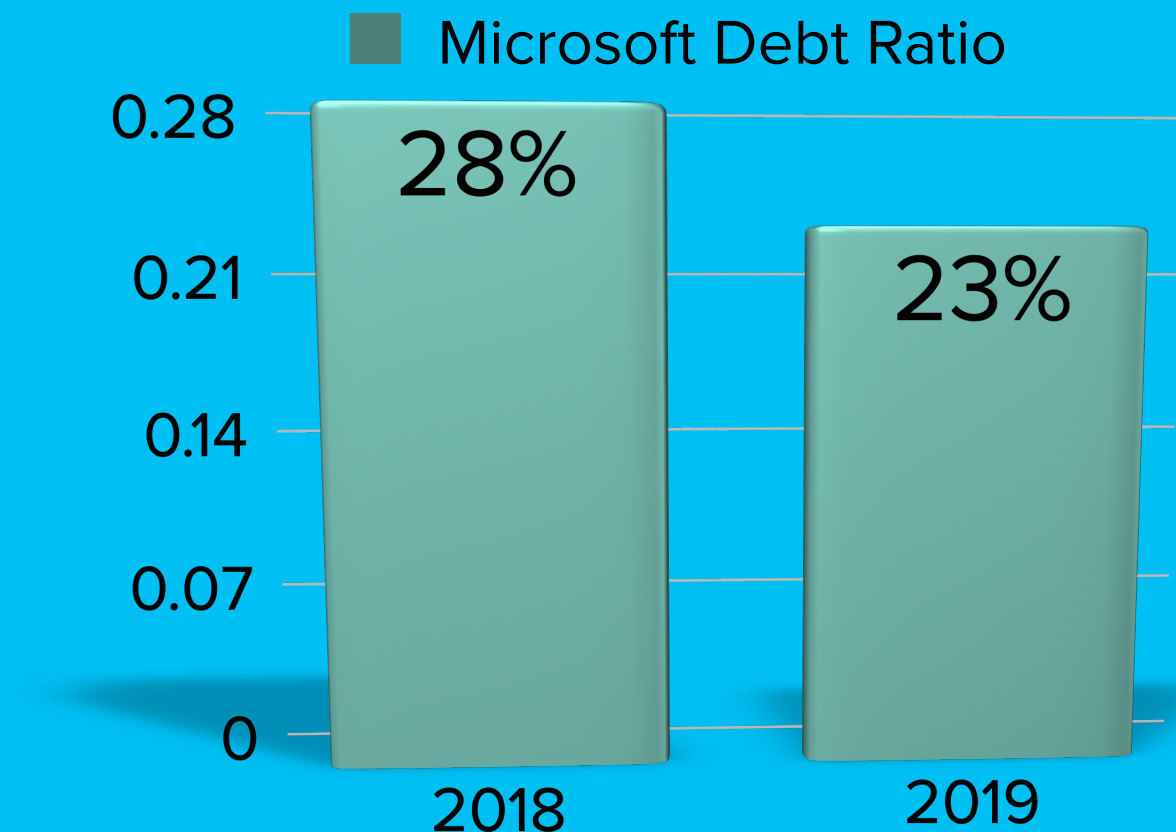
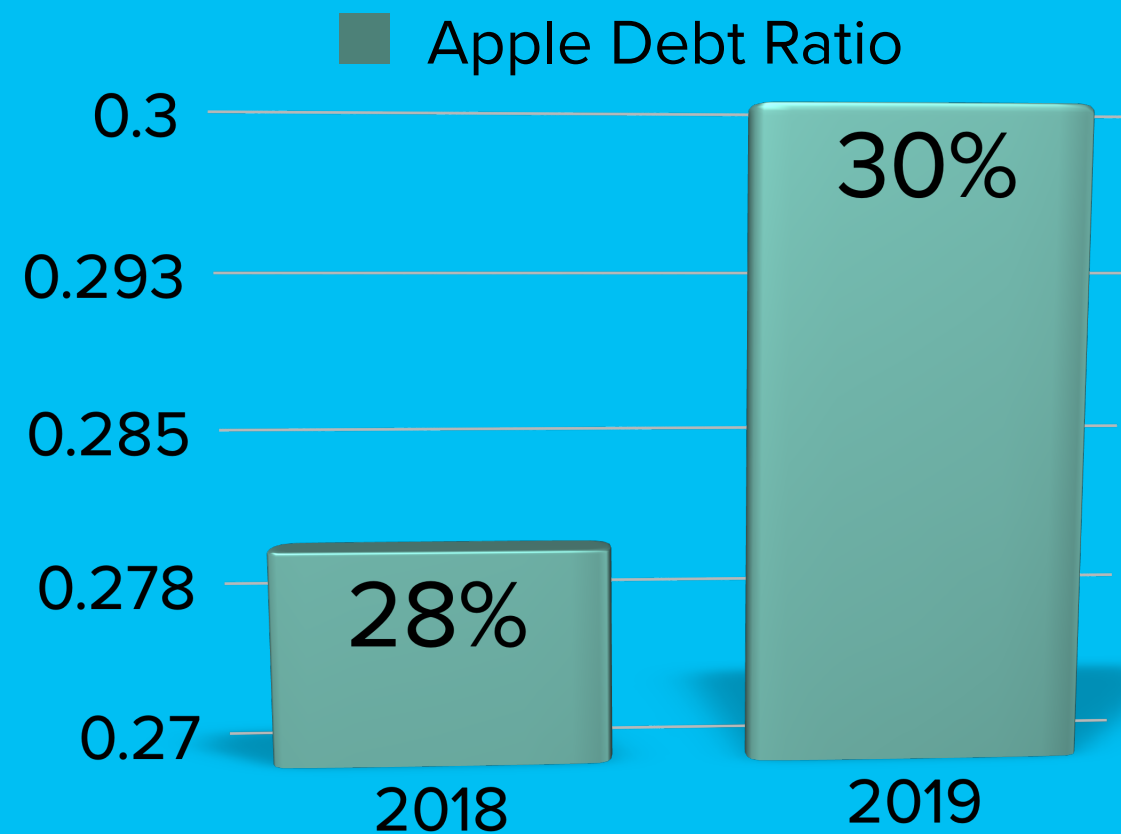
DEBT MANAGEMENT

■ *Debt-to-Assets (Debt Ratio)*

Debt management ratios show how risky a company is by measuring how much a company finances its assets with interest-bearing debt.

Microsoft and Apple both financed 28% of its assets with interest-bearing debt in 2018, but as Apple increased their debt, Microsoft decreased their debt financing by 5% in 2019 making Microsoft less financially risky than Apple.

Apple's increase in debt could be strategic and work in their favor if they are able to increase sales and pay off the interest-bearing debt.

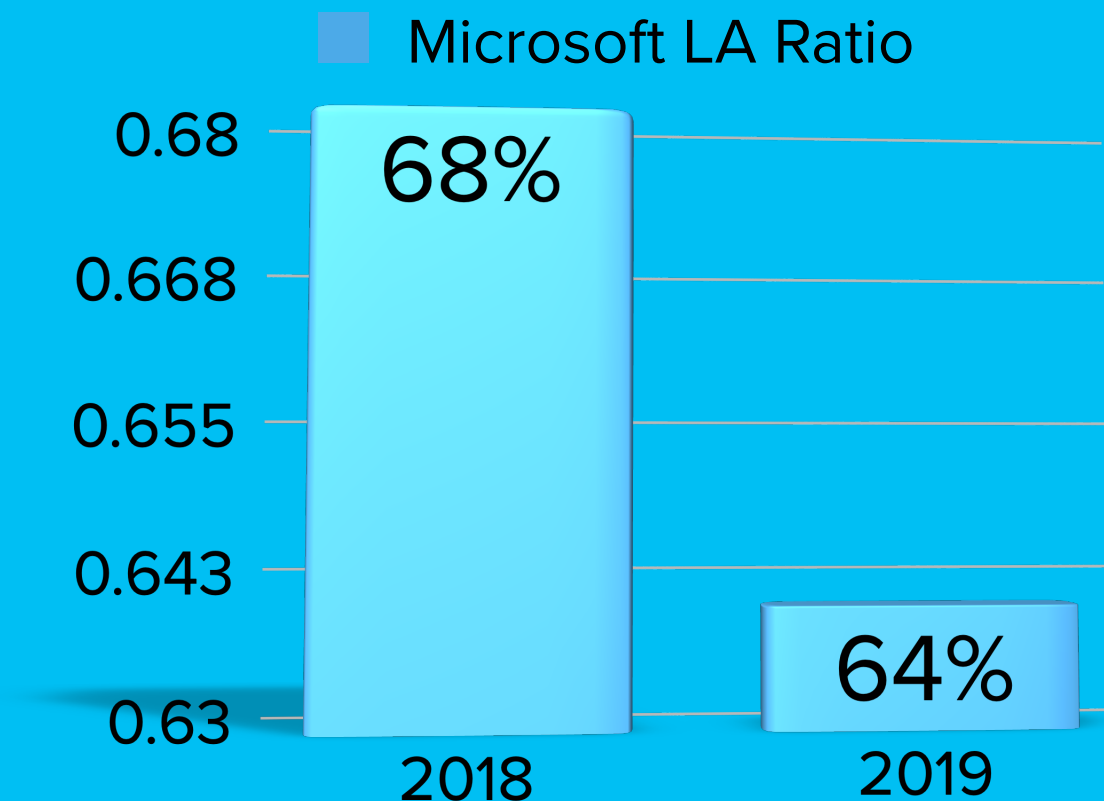
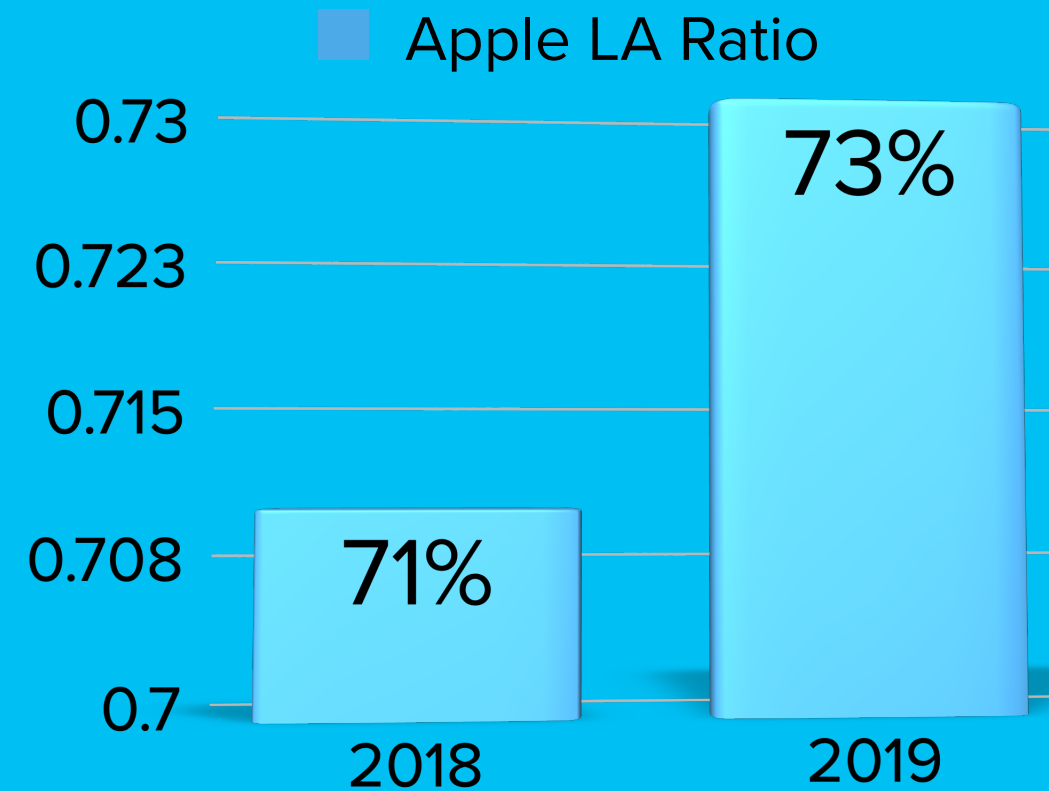


— Liabilities-to-Assets

Liabilities-to-assets considers a company's total liabilities in relation to their total assets. It is financially healthy to have more assets than liabilities so having a low liabilities-to-assets ratio is favorable.

Apple has 0.73 liabilities for every 1 asset, which is higher than Microsoft's 0.64 to 1 ratio. Microsoft is also decreasing their L-to-A going from 68% to 64% between 2018 and 2019, while Apple increased their LA ratio by 2%.

Apple could decrease their debt-to-assets and liabilities-to-assets ratios by decreasing their interest-bearing debt, which was \$102.07B



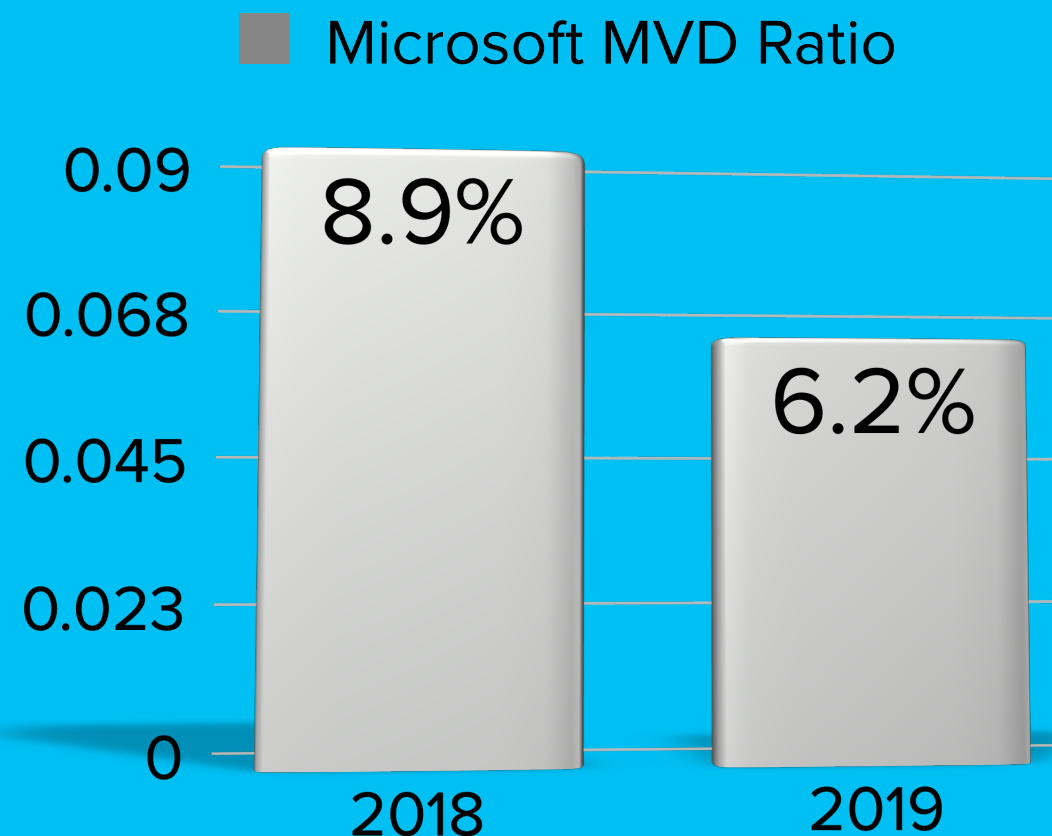
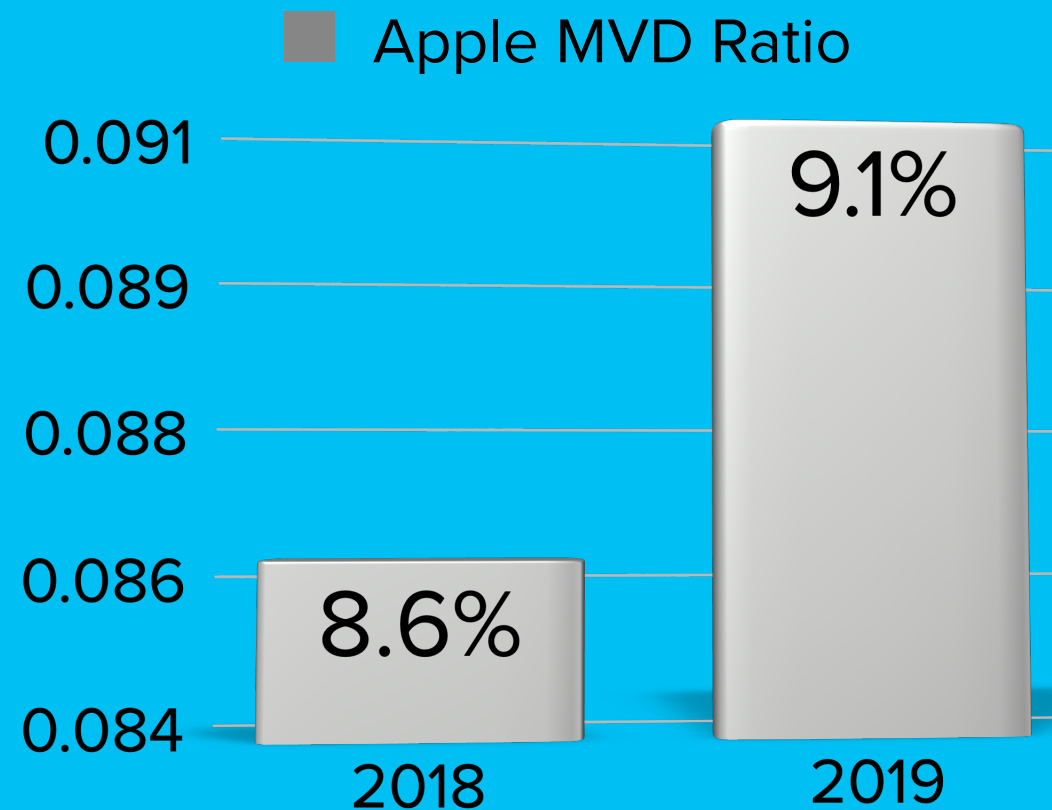
— Market Value Debt

Both Apple and Microsoft have relatively low market value debt ratios showing their assets can decline 90% or more before they are not able to pay off debt.

Apple's decrease in number of shares outstanding between 2018 and 2019 caused the decrease in their market capitalization, which then lead in an increase in their market value to debt ratio.

As Apple's market cap decreased, Microsoft's market cap increased greatly from \$738.05B in 2018 to \$1.015T in 2019 due to an increase in stock price.

This ratio will change for both companies as the the stock price for both companies have increased. It is good to note that Apple will be doing a 4-for-1 stock split at the end of this month, so their number of shares outstanding will increase, which will increase their market cap value.

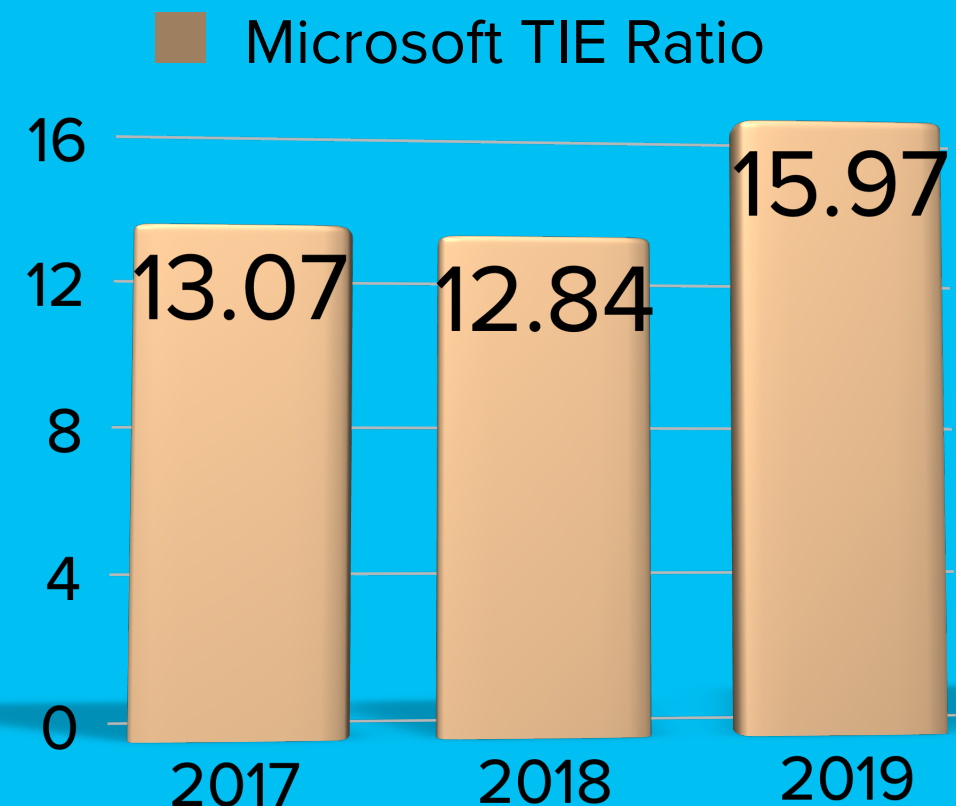
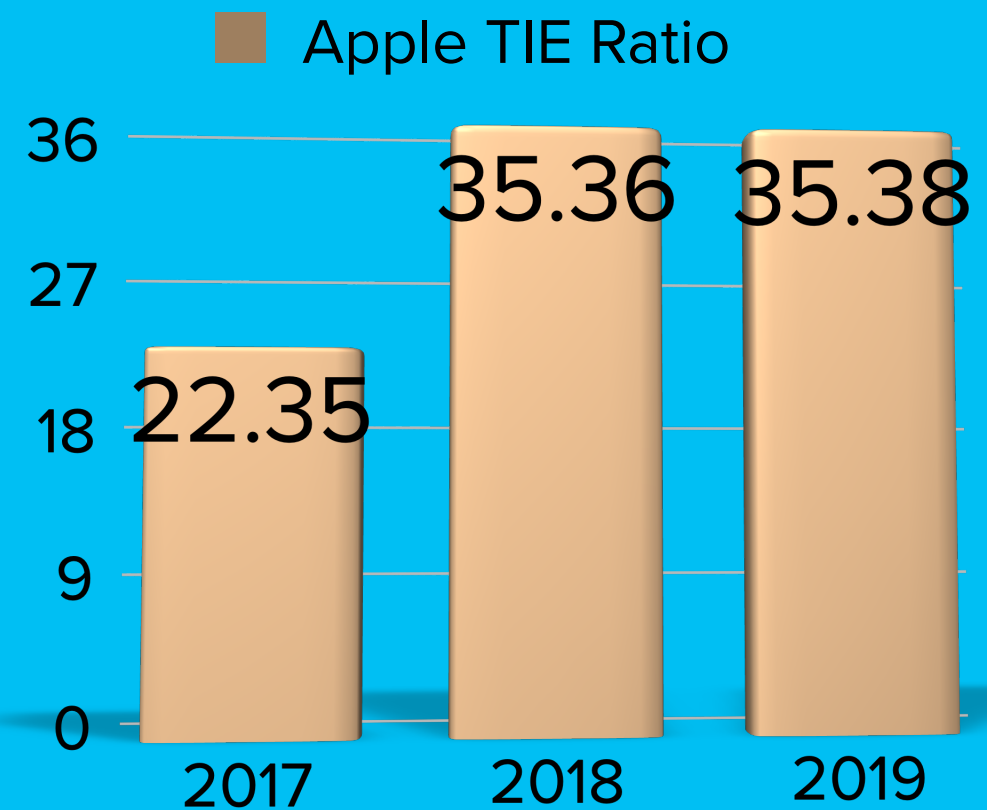


— *Times-Interest-Earned (TIE)*

Although Apple has more debt and a lower debt ratio than Microsoft, they maintain a high TIE ratio, which shows Apple is able to pay their interest expense.

Apple's earnings before interest and taxes (EBIT) was \$63B in 2019, while their interest expense was only \$1.8B. Both Apple and Microsoft have low interest expenses in the past 3 years ranging between \$1-3B; however, Apple has much higher EBIT every year.

Please note, Microsoft's TIE ratio is not low. A TIE above 2.5 on average is seen as acceptable, so 15.97 is much higher than the acceptable ratio. However, it does not measure up to Apple's TIE ratio, which is more than twice as much.



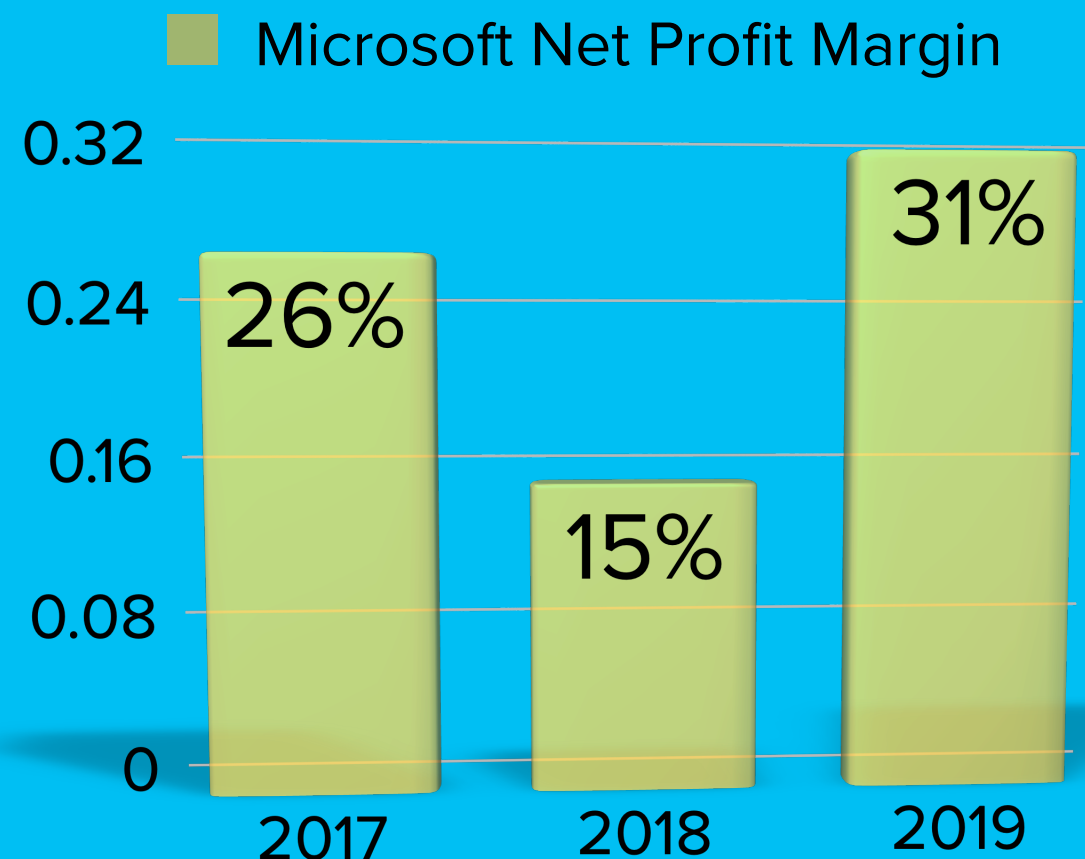
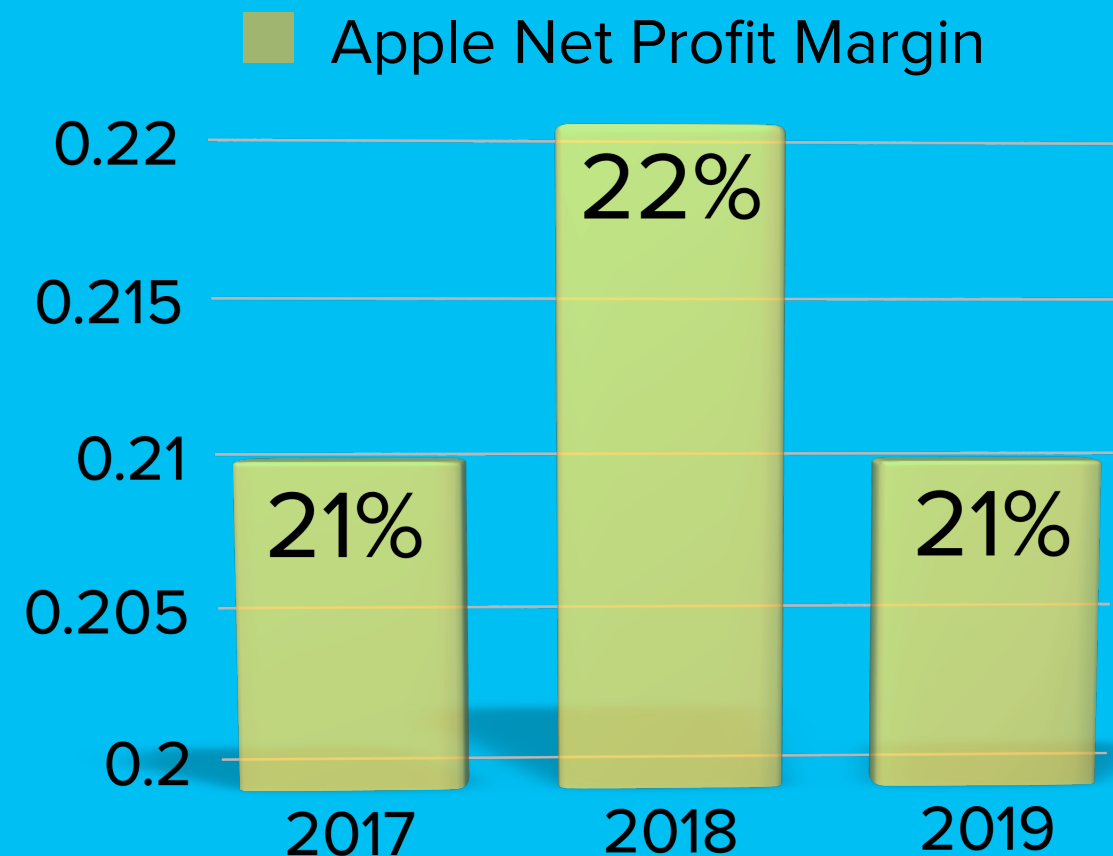
PROFITABILITY

— Net Profit Margin

While Apple has maintained an almost steady net profit margin during the past 3 years, Microsoft has more than doubled its net profit margin between 2018 and 2019.

Over the past 3 years, Apple had an average sales of \$251.67B and an average net income of \$54.38B, which kept their net profit margin around 22%.

The decline in Microsoft's net profit margin in 2018 was due to a decline in net income for that year; however, Microsoft increased their sales and net income between 2018 and 2019. Microsoft's net income went from \$16.571B to \$39.240B, which caused their net profit margin to increase. This shows that Microsoft is getting better at keeping more of the revenue they earn from sales.



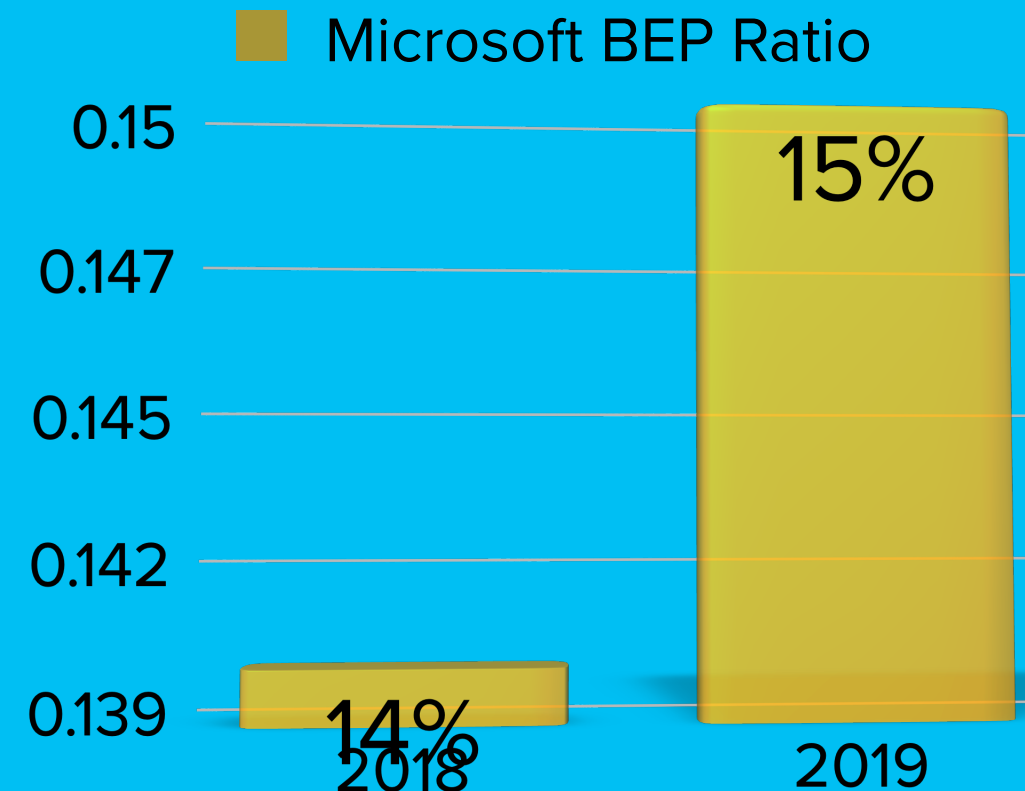
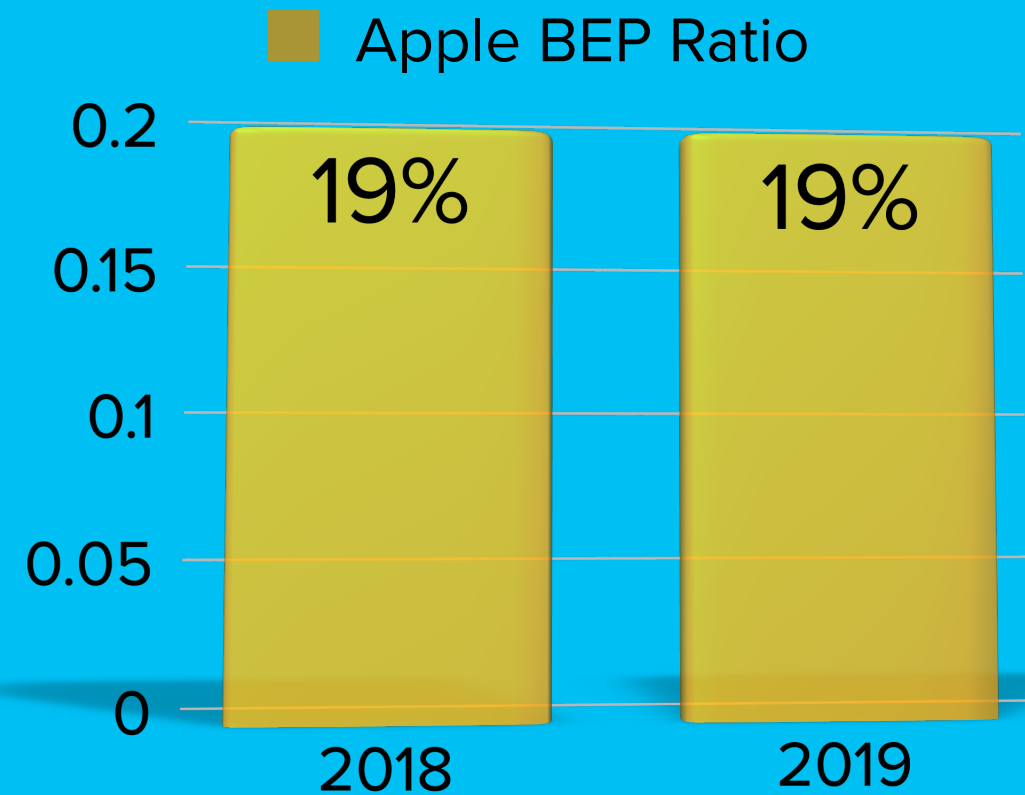
— Basic Earning Power (BEP)

The BEP ratio demonstrates how much operating income (EBIT) is produced for each dollar of total assets.

As stated previously, even though Apple has more debt than Microsoft, Apple has a higher operating income. Thus, leading to Apple having a higher basic earning power.

In 2019, Microsoft had \$286.556B in asset, but only produced \$42.959B in operating income. Apple, on the other hand, had \$338.516B in assets and produced \$63.930B in operating income.

Apple is better at earning revenue from their assets, which ties back to them having better asset management.



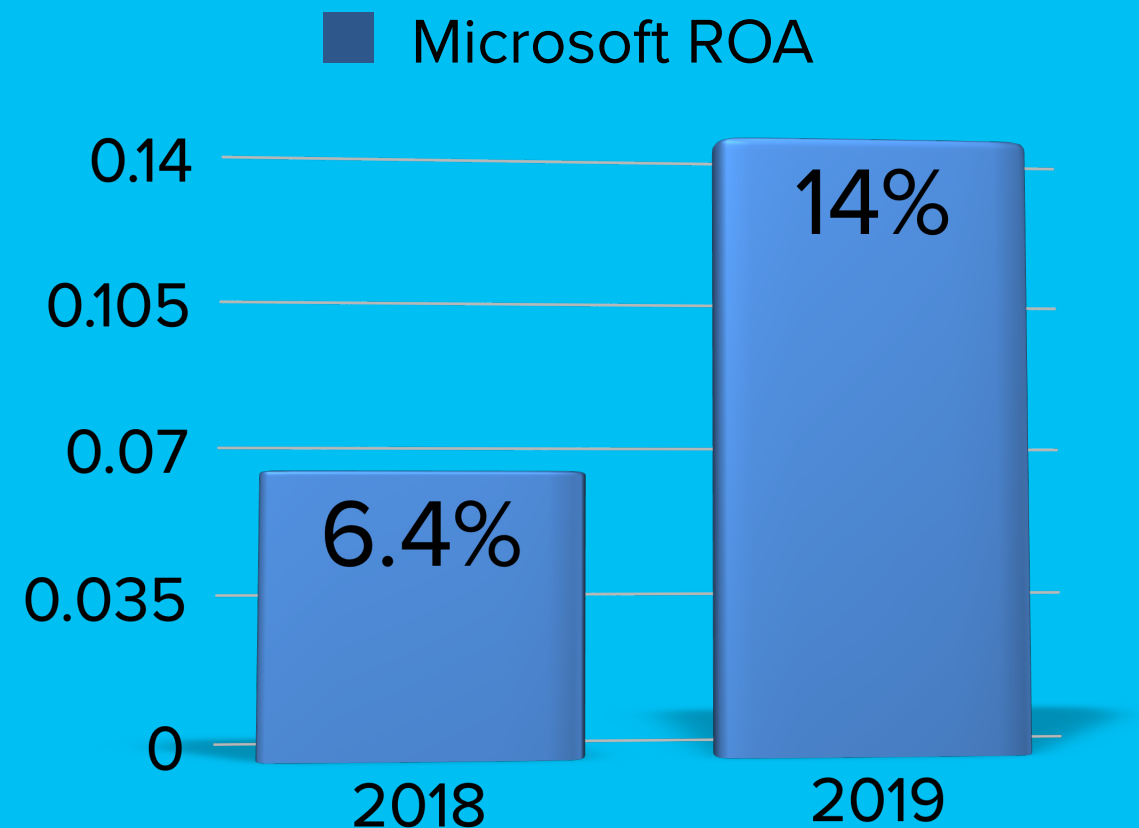
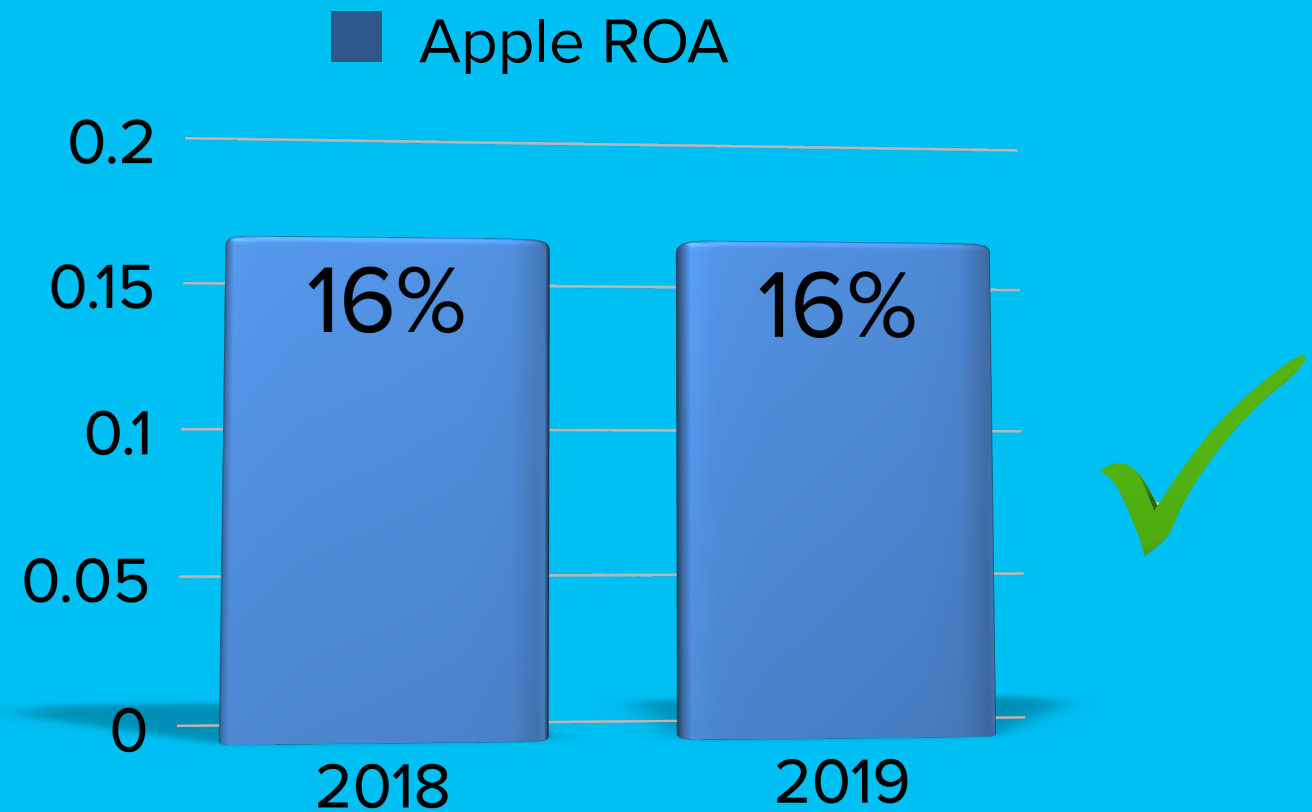
— Return on Assets (ROA)

BEP is a better measure for determining the profitability of a company with more debt financing as it considers EBIT (operating income). However, ROA considers the company's net income after interest and taxes have been paid.

Again, Apple shows that it is more profitable than Microsoft due to their higher net income and higher return on assets.

As with Microsoft's net profit margin increase, their increase in ROA is due to a jump from \$16.571B to \$39.240B in net income between 2018 and 2019.

While Microsoft is able to keep more income from sales, they are not as good at keeping more income from their assets. In other words, Microsoft could increase their profitability by utilizing their assets more efficiently.

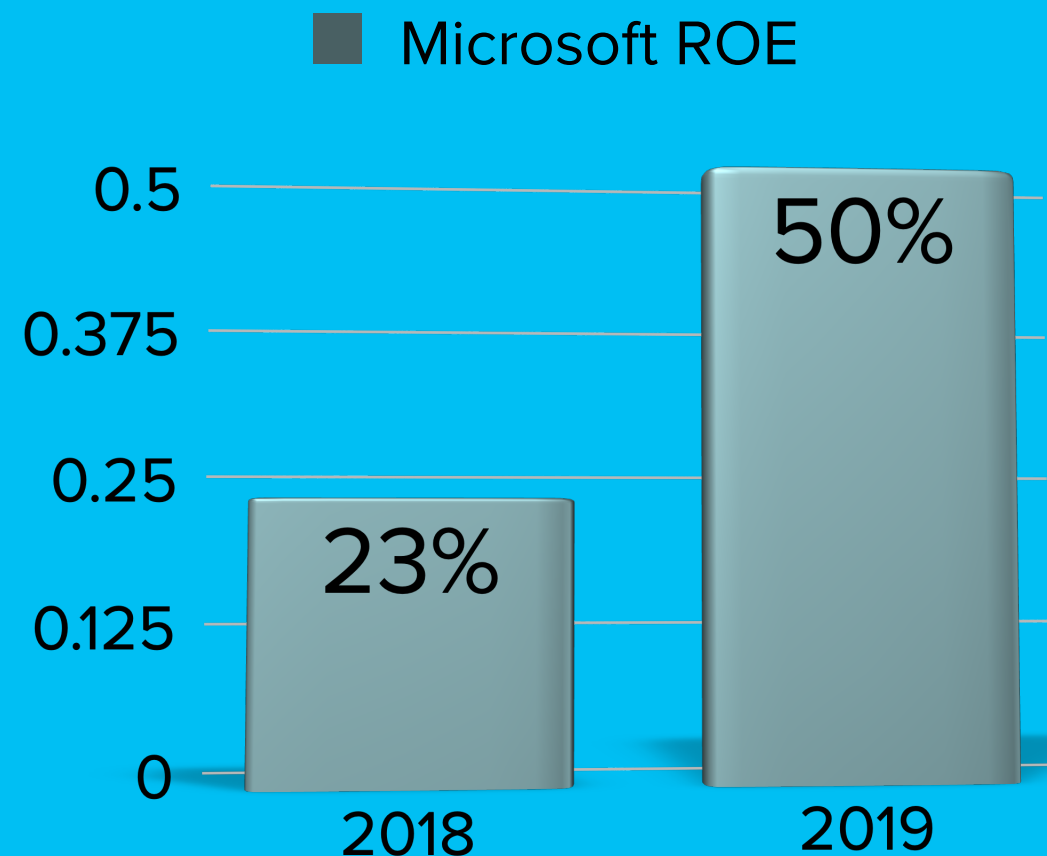
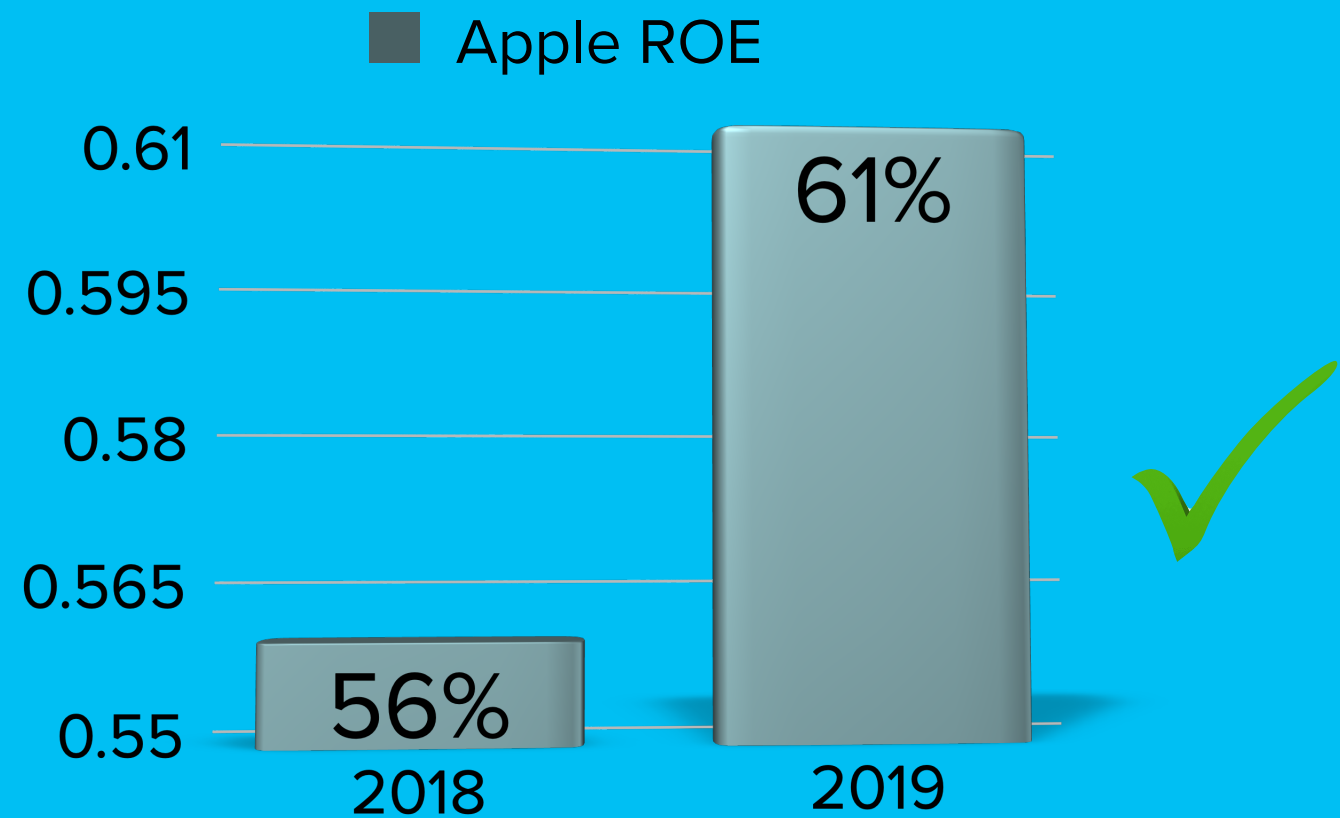


Return on Common Equity (ROE)

The ROE indicates the rate of return on common stockholders' investment.

Common equity is the value all common shareholders have invested in a company plus retained earnings and additional paid-in capital. Not only does Apple have higher common equity, but they have higher net income as stated previously. Apple's high net income in relation to their common equity is the reason why they have such a high ROE.

Apple's ability to produce income and provide a great return for investors makes them a much more profitable company than Microsoft.



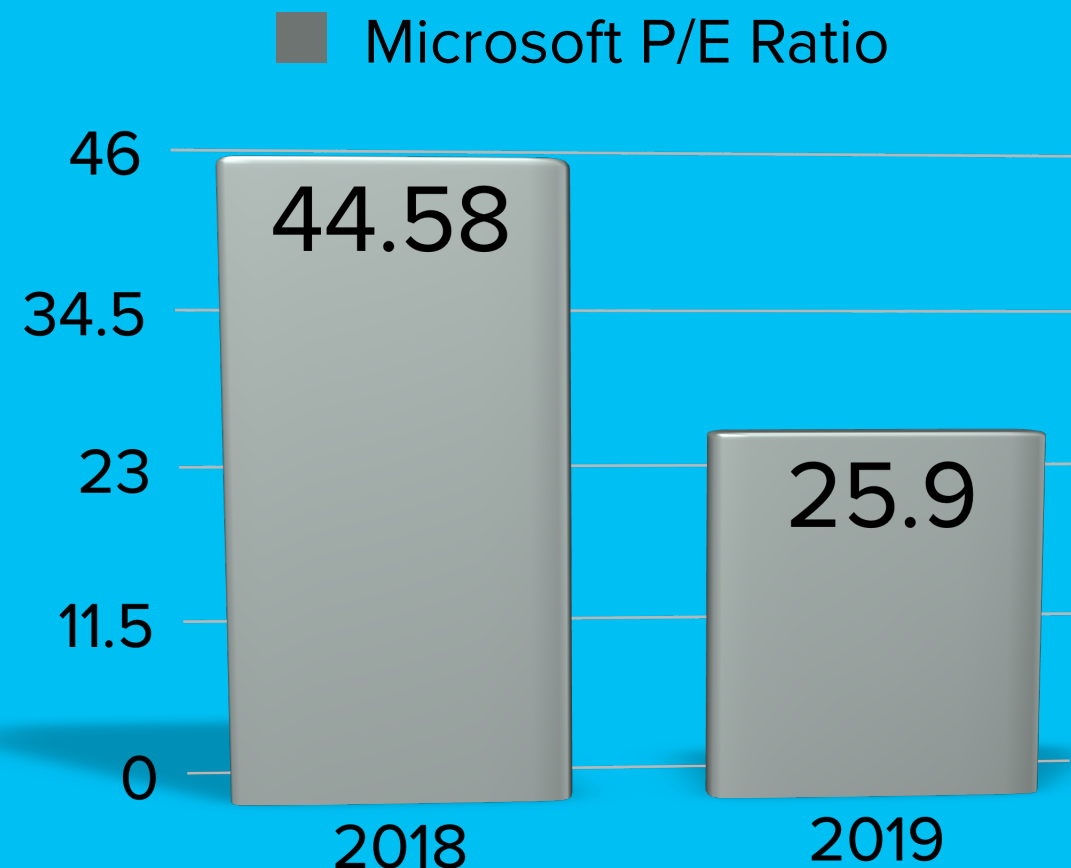
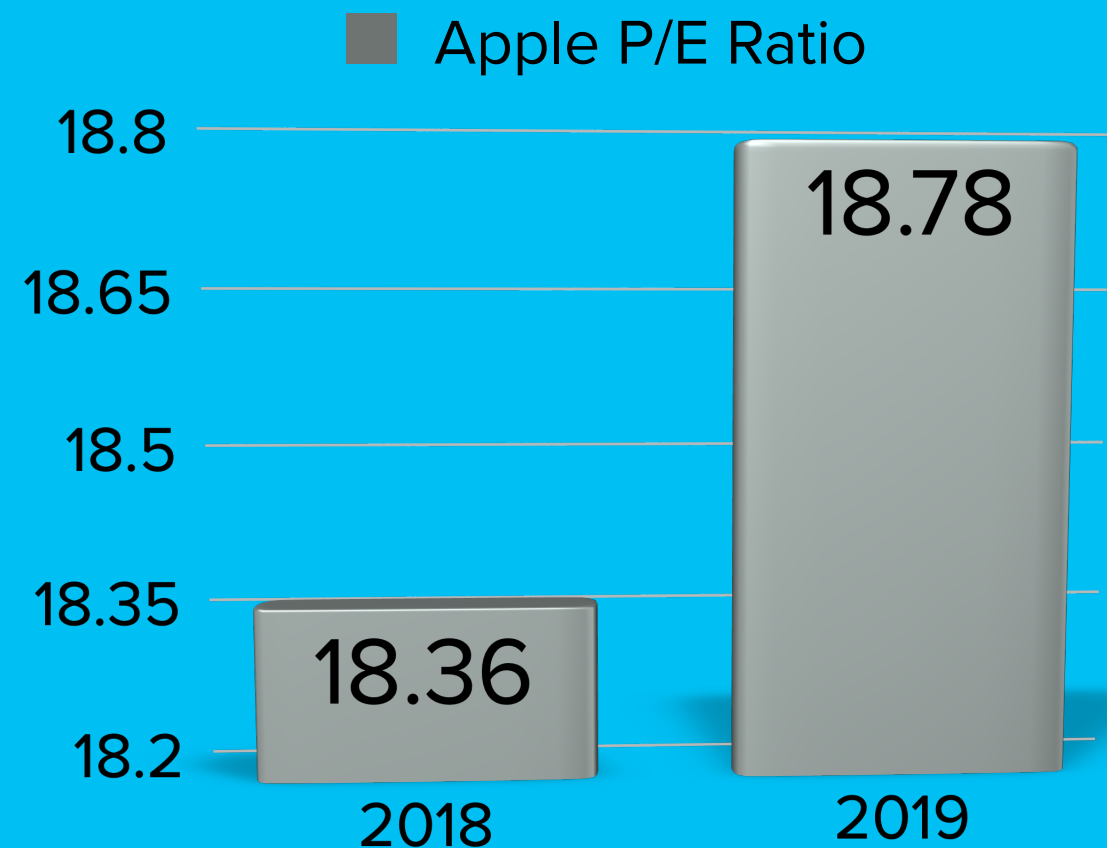
MARKET VALUE

— Price/Earnings (P/E)

The average P/E ratio for companies tracked in the S&P 500 is 13-15, which means most large company stocks trade at a stock price per share that is 13-15 times higher than its earning per share.

Apple has an above average P/E ratio with 18.78, which shows that Apple is a valued stock on the market.

Surprisingly, Microsoft's P/E was 25.9 in 2019. Although it is favorable to have a high P/E ratio, Microsoft's large decline between 2018 and 2019 shows a possible market valuation correction. Having a much higher stock price per share (\$132.33 at the end of the 2019 fiscal year) with a very low earnings per share (\$5.11 in 2019) indicates that the market is valuing Microsoft's stock much higher than their earnings show their shares should be valued. Thus, either Microsoft will continue to increase their earnings per share to keep up with their stock price per share, or the market will correct their value by lowering their stock price.



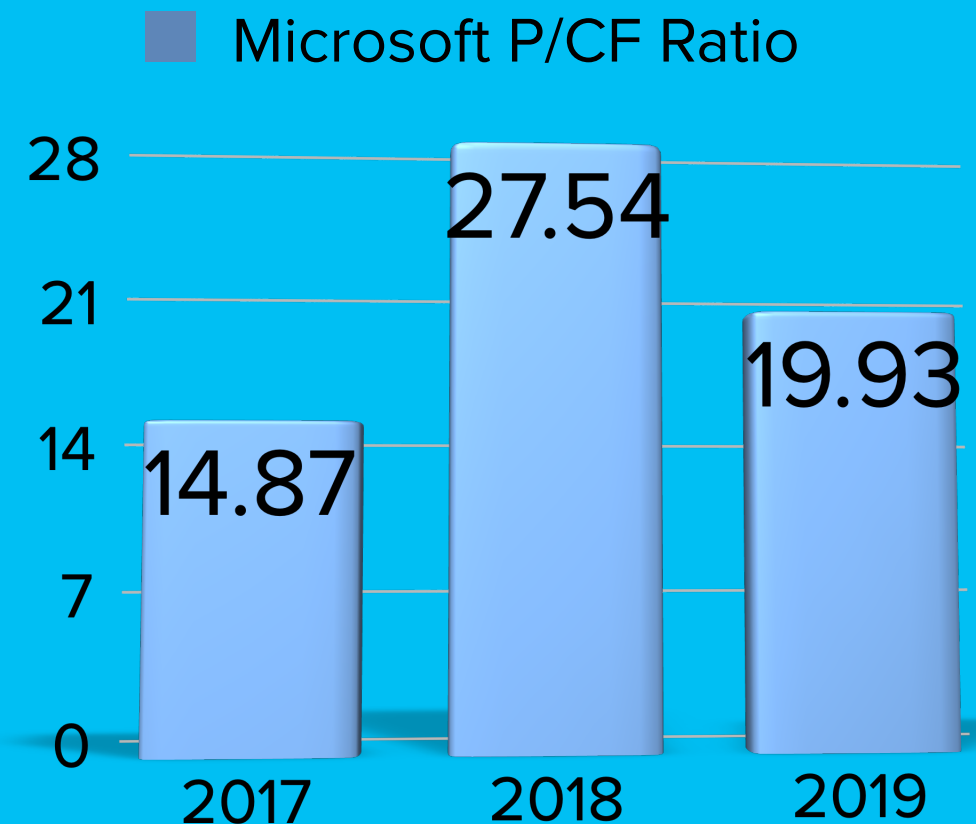
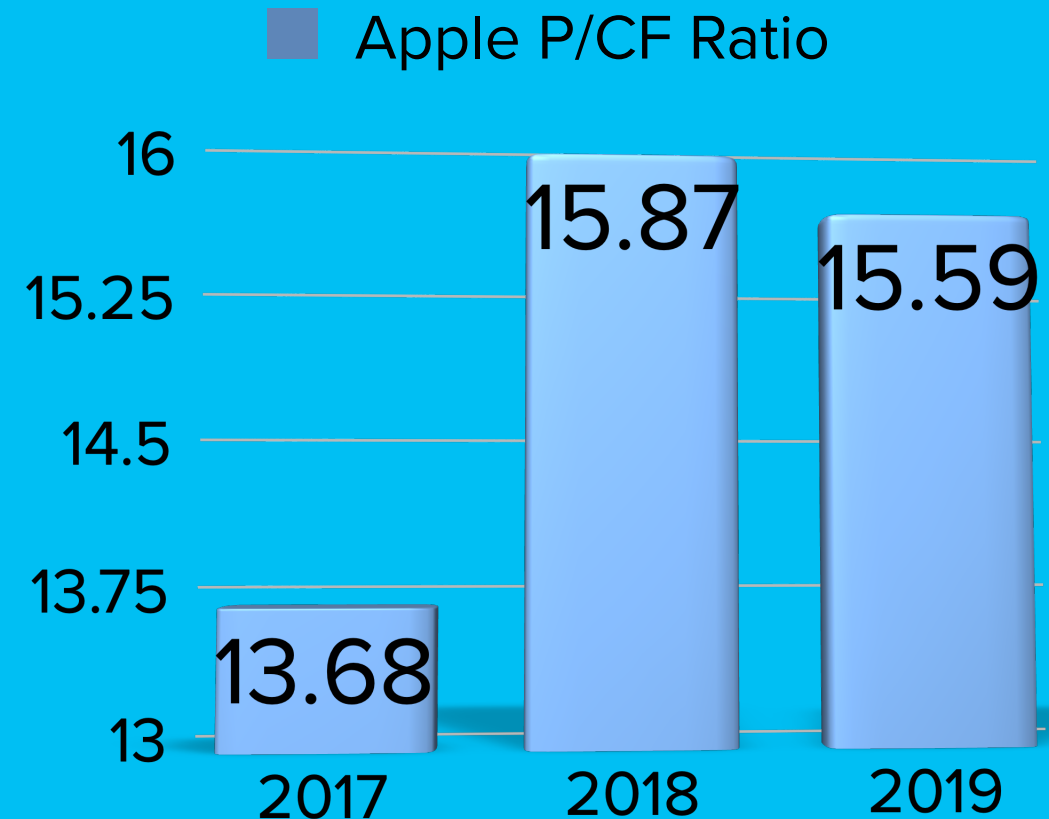
— Price/Cash Flow (P/CF)

Apple and Microsoft seem to mirror each other with how their price-to-cash flow ratios increase and decrease over the past 3 years.

As with the P/E ratio, Microsoft displays a possible market valuation correction with a sharp decline in their P/CF ratio between 2018 and 2019.

Although Apple has a higher stock price per share, the gap between their earnings per share and their cash flow per share is much smaller. This means that the market is evaluating Apple more closely to their earnings and cash flow.

Again, having a high P/CF ratio is favorable, but the market might be evaluating Microsoft based on previous earnings or potential future earnings instead of current earnings and cash flow. Either the market will correct its valuation of Microsoft or Microsoft will continue to increase their earnings and cash flow to better match their value on the market.

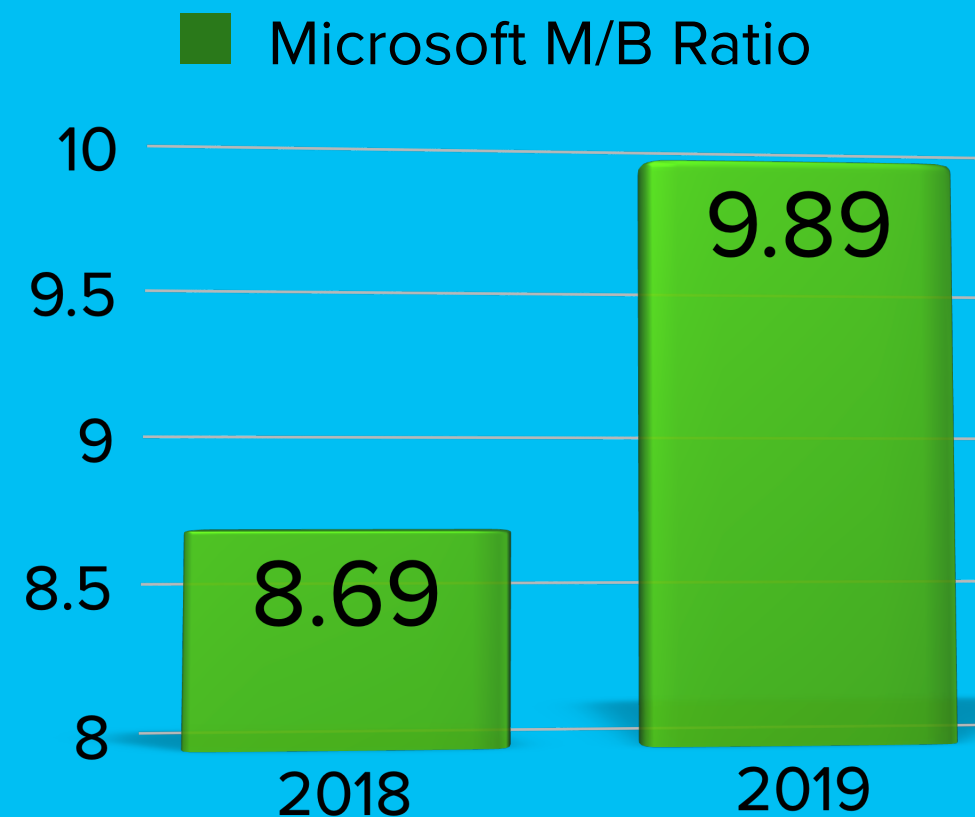
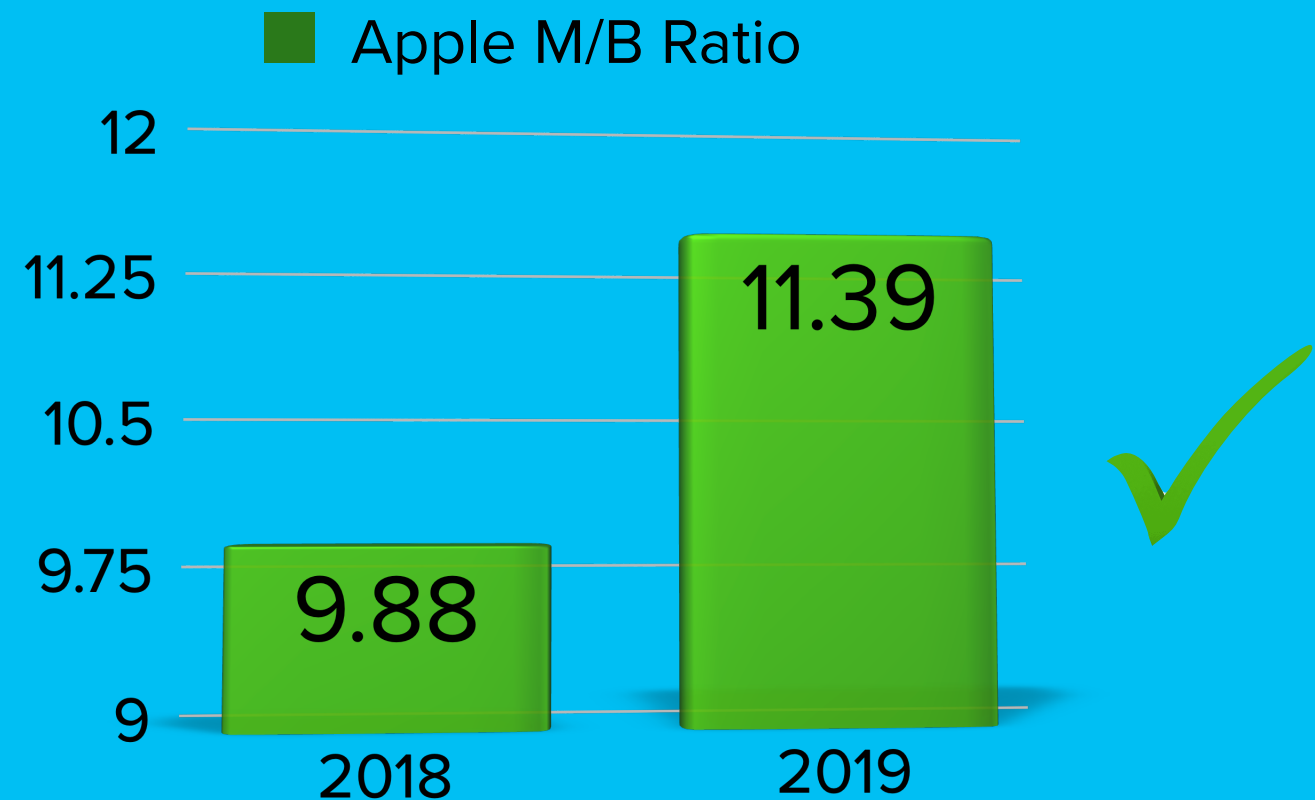


— **Market/Book (M/B) or Price per Book Value per Share (P/BVPS)**

The market-to-book ratio measures a company's market value based on their book value of equity, which comes from their balance sheet and includes total common equity.

Apple's higher M/B ratio shows the market has a higher opinion of Apple based on their company operations and is also an indicator of higher shareholder wealth. This ties into Apple's higher ROA and ROE; making Apple an overall better investment choice for potential returns.

Although lower than Apple, Microsoft's stock price was 9.89 times their book value per share at the end of their 2019 fiscal year. This indicates Microsoft is also a potentially good investment for shareholders, but not as good as Apple with all things considered.



CONCLUSION

With a total of 18 ratios, Apple vs. Microsoft ended in a tie (9/9).

Both companies have good liquidity, with Microsoft being a little more liquid than Apple due to better current and quick ratios. However, Apple manages their assets better and is more profitable. Microsoft has less debt and manages their current debt better, while also having a higher market value based on their earnings and cash flow. It should be noted that sharp declines in Microsoft's price-to-earnings and price-to-cash flow show a possible market valuation correction that could lead to further correction and a possible decrease in stock price unless they continue to show an increase in earnings and cash flow.

Overall, both companies are a good investment for shareholders, but Apple comes out on top due to their higher profitability and return on equity.