**Amazon Company ratio analysis (2020-2022)**

**Liquidity:**

The decreasing trend in the current ratio, quick ratio, and defensive interval suggests potential challenges in maintaining liquidity and covering short-term obligations. Furthermore, a quick ratio below 1 suggests potential challenges in meeting short-term obligations without relying on selling inventory. The decreasing trend indicates a potential liquidity risk. Inventory days represent the average number of days it takes for the company to sell its inventory. The increase in inventory days may suggest slower inventory turnover, tying up cash in unsold goods which is concerning as the quick ratio would suggest that the company would need to reduce its inventory days. Payable days have decreased meaning that the company is taking less days to pay its suppliers this is not favourable as the company is having liquidity problems as seen above as cash is needed to settle short term obligations. Receivable days represent the average number of days it takes for the company to collect payment from customers. The increase in receivable days suggests a lengthening collection period, potentially impacting cash flow. This will further contribute to the company’s liquidity problems. The net trading cycle represents the difference between the days it takes to sell inventory and the days it takes to collect receivables, minus the days to pay payables. A negative net trading cycle indicates that the company is collecting cash from customers before paying suppliers, which is favourable however these negative figures are reducing and may lead to positive Net trading Cycle which is a massive issue.

Working capital represents the difference between current assets and current liabilities. The increasing trend in working capital indicates growing liquidity needs or increased investment in current assets. Working capital as a percentage of sales measures the efficiency of working capital utilization relative to sales revenue. An increasing percentage suggests that the company is using a higher proportion of working capital relative to its sales, potentially indicating a need for additional funding. All together the ratios signal growing concern over liquidity risks. Efficient management of inventory, receivables, and payables will be crucial. The company should carefully balance its working capital needs with strategies to enhance cash flow and maintain financial stability.

The Current ratio is greater than 1 indicating the short-term asset’s ability to meet short term liabilities. Quick and Cash ratios above 0.5 which also indicates that the company can meet more than 50% of its short-term liabilities with its cash in hand. The decline in current ratio was mainly to be attributed to a reduction of marketable securities (following the sale of the company’s stake in Rivian).

As an online marketplace where thousands of vendors are hosted on site, Amazon’s payable days is typically higher than other companies as it is part of its 90-day credit policy. As a result of Amazon’s nature of business, its payable balances are higher than its inventories and receivables where it holds inventory on behalf of its vendors. Therefore, working capital is negative and so is the trading cycle. On a year over year basis the number has worsened, but can be supported with the argument that Amazon has started its own fulfilment services and is a fast growing company.

**Profitability:**

The gross margin represents the percentage of sales revenue that exceeds the cost of goods sold (COGS). An increasing gross margin indicates improved profitability at the gross profit level, possibly due to effective cost management, pricing strategies, or a favourable product mix. EBITDA represents earnings before interest, taxes, depreciation, and amortization decrease in EBITDA in 2022, despite a positive trend in previous years indicates a significant increase in either (Interest, Tax, Depreciation or Amortization). The fluctuation in EBITDA margin also suggests changes in operating efficiency and cost structures. The decrease in 2022 raises concerns about maintaining profitability at the operating level. EBIT represents Earnings Before Interest and Taxes, which is a measure of operating profit. The sharp decline in EBIT in 2022 suggests a substantial decrease in operating profitability and would reinstate concerns in the rise of taxes or Interest rates and the impact it has on profitability. The Net margin drastically fell in 2022 which also indicates challenges at the bottom line, possibly due to increased non-operating expenses or other exceptional items.

The impact of non-operating expenses is significant to the profitability of the company and can mostly be attributed to the rise of interest rates in the US and the rest of the world in the pursuit to combat rapidly growing inflation rates. On January 26th the interest rates in the US were 0.25% and ended the year on 4.5% a significant increase in rates which has inevitably contributed to the decline in the profitability of the company.

It is notable that Amazon’s Technology & content and Sales & marketing have seen sharp increases, indicating the heavy spend on AWS and Prime Video content. While the e-commerce segment is seen to be normalizing post the Covid-19 boom, sales reflect the increasing global inflation levels.

**Solvency/Debt management:**

Debt to Equity ratio measures the proportion of a company's financing that comes from debt compared to equity. The increasing trend in D/E ratio suggests a higher reliance on debt for financing, which could increase financial risk. The increasing Debt to Assets ratio also suggests higher level of leverage and potential financial risk. The Long-term Debt to Capital ratio assesses the percentage of a company's capital structure that is comprised of long-term debt. The trend mirrors the Debt-to-Equity ratio, indicating a growing reliance on long-term debt. Times Interest Earned measures the company's ability to cover its interest expenses with its operating income and although the values suggest a healthy ability to cover interest expenses, a decrease in 2022 requires careful attention and may elicit cause for concern if it follows the falling momentum. The Debt Coverage ratio assesses the company's ability to cover its debt obligations with its free cash flow. The drastic decrease in 2022 indicates potential challenges in generating enough free cash flow to cover debt obligations and further raises worry to the company’s growing liquidity problems. Free Cash Flow to Equity represents the cash available to equity holders after accounting for capital expenditures. The decrease in FCFE indicates potential challenges in generating sufficient cash flow for equity holders. Free Cash Flow per Share represents the amount of cash generated per share after accounting for capital expenditures. The decreasing trend in FCFE per share suggests potential challenges in maintaining or growing free cash flow.

The increasing debt ratios and the drastic decrease in Debt Coverage raise concerns about the company's financial risk and its ability to generate sufficient free cash flow to cover debt obligations. It is crucial for the company to carefully manage its debt levels, monitor interest coverage, and implement strategies to improve free cash flow.

Amazon’s long-term liabilities have been increasing over the years as the company has increased its Financial lease commitments to facilitate the number of new fulfilment centres opened over the last year. Although the long-term debt remain rather steady, financial lease commitments have dramatically increased which has increased the debt service burden as well. However, the company has adequate levels of interest coverage and free cash flow indicating its financial health. However, the increase in the debt level would also mean that the company’s borrowing capacity in future is strained where it might have to pay higher interests to secure more debt.

**Asset Utilisation:**

Total Asset Turnover measures how efficiently the company generates revenue from its total assets. The decreasing trend suggests potential challenges in efficiently utilizing total assets to generate sales. Similarly, the decreasing trend in Fixed asset turnover indicates challenges in efficiently using fixed assets to generate sales. Inventory Turnover measures how many times the company's inventory is sold and replaced over a period. The decreasing trend suggests a lengthening inventory turnover period, potentially tying up capital in unsold goods. This is highly disadvantageous as the company also has free cash flow issues which is necessary to address the liquidity issues and rising financial obligations. The following metric in Return on assets add to the previous issues as the significant drop in ROA in 2022 indicates challenges in generating profit relative to total assets.

The decreasing trends in asset utilization metrics, particularly Total Asset Turnover, Fixed Asset Turnover, and Inventory Turnover, indicate potential challenges in efficiently using assets to generate revenue and manage inventory. The significant drop in Return on Assets (ROA) in 2022 raises concerns about the company's overall profitability relative to its total assets. Addressing operational inefficiencies, optimizing inventory management, and identifying opportunities to enhance asset utilization will be critical for improving financial performance and overall business efficiency.

Amazon has a large portion of goodwill in its asset base, where the Fixed asset turnover is almost three times higher than the total asset turnover. The goodwill and intangibles are manly as a result of acquisitions in addition to the increased R&D spending on AWS which we will have to closely watch for future profitability.

**Investor/Market ratios:**

EPS represents the portion of a company's profit allocated to each outstanding share of common stock. The positive trend in EPS from 2020 to 2021 indicates an increase in earnings per share, suggesting improved profitability during this period. However, the negative EPS in 2022 is concerning and requires a detailed investigation. Negative EPS implies that the company incurred a loss on a per-share basis. This could be due to increased expenses, decreased revenue, or exceptional items affecting the bottom line. Furthermore, a negative EPS may impact investor confidence, and the company needs to communicate the reasons behind the loss and the strategies in place for recovery or else the share price and market value of the company may decline. Investors may scrutinize the company's financial health, operational efficiency, and management's ability to navigate challenges and restore profitability. Despite this the increasing trend in BV per share from 2020 to 2022 indicates growth in the net asset value per share. This can be attributed to factors such as retained earnings, capital injections, or a positive revaluation of assets. BV per share reflects the company's net worth from an accounting perspective. It provides insight into the value of the company's assets after liabilities are subtracted. Investors often use BV per share as a measure of intrinsic value. The increasing trend may be viewed positively, signalling growth in the company's net worth.

The investor/market ratios further underscore a declining trend in profitability metrics, including Return on Equity (ROE), Return on Capital Employed (ROCE), and Return on Assets (ROA). This trend signals challenges in generating satisfactory returns for investors and necessitates a deeper exploration into operational inefficiencies or external factors impacting the company's financial performance. Addressing the operational inefficiencies or external factors contributing to the decline in profitability is paramount for restoring investor confidence.

ROE, ROA and ROCE all are within the health territory, however, have declined slightly compared to previous year. Furthermore, given Amazon’s valuations, one would expect the ratios to be better as there are many other smaller companies with better returns than Amazon, however, it is notable that these valuations are backed by Amazon’s expansion.

**Growth rates:**

The growth rate in sales reflects the percentage increase in a company's revenue over a specific period. In this case, the company experienced a 22% growth in sales in 2021 and a 9% growth in 2022, resulting in an average annual growth rate of 16%. This positive trend indicates an increasing demand for the company's products or services, successful market penetration, or effective sales and marketing strategies. A growth in sales implies that there is a sustained or expanding demand for the company's offerings. This could be attributed to a strong market position, effective product differentiation, or successful targeting of customer needs. Sales growth could be driven by geographic expansion or entry into new markets. This strategy suggests the company's ability to identify and capitalize on untapped opportunities.

The growth rate in gross profits reflects the percentage increase in the company's profit after deducting the cost of goods sold (COGS). A growth in gross profits is a positive indicator of operational efficiency and effective cost management. In this case, the company experienced a 29% growth in gross profits in 2021 and a 14% growth in 2022, resulting in an average annual growth rate of 22%. An increase in gross profits indicates that the company is effectively managing its production and distribution costs. This could result from negotiating better supplier deals, optimizing manufacturing processes, or implementing cost-saving measures. Changes in gross profits can be linked to operational efficiency. Continuous improvement in efficiency often leads to a reduction in production costs and an increase in gross profits.

Consistent growth in both metrics suggests a well-rounded business strategy, encompassing effective market presence, demand generation, and cost management. Growth rates in sales and gross profits signify a healthy business trajectory, showcasing the company's ability to generate revenue and manage costs effectively.

The cost of sales increased by 17% in 2021 and 6% in 2022, resulting in an average annual growth rate of 11%. A moderate growth rate in the cost of sales suggests that the company has been able to manage its production costs effectively. Fulfilment costs grew by 28% in 2021 and 12% in 2022, averaging a growth rate of 20%. The substantial growth in fulfilment costs may be indicative of increased demand, expansion of distribution networks, or changes in logistics strategies. Technology and content costs showed a consistent growth rate of 31% each year. The sustained growth in technology and content expenses suggests ongoing investments in digital infrastructure, software development, or content creation. Sales and marketing expenses experienced a significant increase of 48% in 2021 and a 30% increase in 2022, resulting in an average annual growth rate of 39%. The high growth in sales and marketing expenses indicates an aggressive approach to market expansion or increased promotional activities. General and administrative expenses grew by 32% in 2021 and 35% in 2022, averaging a growth rate of 34%. The growth in general and administrative costs may be attributed to investments in administrative infrastructure, personnel, or operational support. This category showed a substantial decrease of -183% in 2021 and a significant increase of 1937% in 2022, resulting in an average annual growth rate of 877%. The extreme fluctuations in this category require thorough investigation. A negative growth rate followed by an exceptionally high growth rate may be indicative of one-time events, accounting adjustments, or changes in the business structure.

The growth rate for total current assets was 22% in 2021 but decreased by -9% in 2022, resulting in an average annual growth rate of 6%. The decrease in total current assets in 2022 may suggest challenges in managing short-term liquidity or a strategic decision to reduce current assets. Non-current assets exhibited a growth rate of 37% in 2021 and 22% in 2022, averaging a growth rate of 30%. The consistent growth in non-current assets indicates a focus on long-term investments or expansion strategies. This could involve acquisitions, capital expenditures, or investments in technology and infrastructure. Total assets increased by 31% in 2021 and 10% in 2022, averaging a growth rate of 20%. The overall growth in total assets reflects the company's commitment to expanding its asset base. This growth could contribute to increased operational capacity, improved competitiveness, or strategic positioning for future opportunities.

Total current liabilities increased by 13% in 2021 and 9% in 2022, averaging a growth rate of 11%. The growth in current liabilities may indicate increased short-term obligations, such as accounts payable or short-term debt. Non-current liabilities grew by 38% in 2021 and 15% in 2022, resulting in an average annual growth rate of 27%. The growth in non-current liabilities suggests the company has taken on long-term obligations, potentially to fund expansion or strategic initiatives. Total liabilities increased by 24% in 2021 and 12% in 2022, averaging a growth rate of 18%. The overall growth in liabilities indicates the company's reliance on both short-term and long-term financing. The substantial growth in non-current assets and liabilities suggests the company is making significant investments, potentially for future growth or strategic positioning.

The COGS as a percentage of sales decreased from 60% in 2020 to 58% in 2021 and further to 56% in 2022. A declining COGS percentage indicates that the company has been able to manage and reduce the direct costs associated with producing goods or services. This could be a result of negotiating better deals with suppliers, improving production efficiency, or implementing cost-saving measures. A lower COGS percentage contributes to higher gross profits and reflects positively on the company's ability to control the costs directly related to its core business operations. Gross profits as a percentage of sales increased from 40% in 2020 to 42% in 2021 and further to 44% in 2022. The increasing trend in gross profits as a percentage of sales demonstrates improving profitability. This may be attributed to a combination of factors such as effective cost management, pricing strategies, or changes in the product mix. A rising gross profit margin suggests that the company can retain a larger portion of its sales revenue after accounting for the direct costs of production.

The decreasing COGS percentage indicates improved operational efficiency in producing goods or services. This could be a result of streamlining processes, adopting technology, or optimizing the supply chain. The increasing gross profit margin suggests that the company may have successfully implemented pricing strategies or positioned its products or services in a way that allows for higher profitability. A consistently improving gross profit margin may indicate a competitive advantage in terms of cost structure or product differentiation. The positive trend in both COGS and gross profit margins bodes well for the company's financial health. It suggests that the company is effectively managing its costs and translating a larger portion of its sales into profits.

The operating income as a percentage of sales decreased from 6% in 2020 to 5% in 2021 and further to 2% in 2022. The declining trend in operating income margin suggests challenges in maintaining profitability after accounting for both the direct and indirect costs associated with operations. A decrease in operating income margin may indicate increased operating expenses, reduced efficiency, or pricing pressures that impact the overall profitability of the core business. The net profit as a percentage of sales decreased from 6% in 2020 to 7% in 2021 and further to 1% in 2022. The declining net profit margin reflects challenges in generating profits after accounting for all expenses, including operating costs, interest, taxes, and other non-operating items. The decrease in net profit margin may result from increased expenses, changes in tax liabilities, or other factors affecting the company's bottom line. The declining operating income and net profit margins suggest operational challenges or increased costs that are impacting overall profitability.

Let's analyse the provided figures for Technology and Content as well as Sales and Marketing expenses as a percentage of sales over the years 2020, 2021, and 2022. Technology and content expenses as a percentage of sales increased from 11% in 2020 to 12% in 2021 and further to 14% in 2022. The increasing trend in technology and content expenses suggests that the company is allocating a larger portion of its sales revenue to investments in digital infrastructure, software development, or content creation. Sales and marketing expenses as a percentage of sales increased from 6% in 2020 to 7% in 2021 and further to 8% in 2022. The rising trend in sales and marketing expenses indicates that the company is dedicating a larger share of its sales revenue to activities such as advertising, promotion, and sales team expansion. While increased sales and marketing spending can be essential for growth, it needs to be carefully managed to ensure that the return on investment justifies the additional costs. A balance between effective marketing strategies and cost control is crucial.

The income tax rate increased from 12% in 2020 to 13% in 2021 and significantly jumped to 54% in 2022. The substantial increase in the income tax rate in 2022 is noteworthy and could indicate various factors, such as changes in tax laws, adjustments in the company's tax strategy, or exceptional items impacting tax liabilities. A sudden spike in the income tax rate may significantly impact the company's net profit margin, and it would be crucial to understand the specific reasons behind this increase. CAPEX as a percentage of sales remained consistent at 17% in both 2020 and 2021 and decreased to 13% in 2022. The decrease in CAPEX as a percentage of sales in 2022 suggests a potential reduction in the company's capital investment relative to its sales. This could be a strategic decision to allocate resources differently or a response to changes in market conditions. While reducing CAPEX as a percentage of sales can positively impact short-term profitability, it's essential to evaluate the long-term implications for the company's competitiveness and operational capabilities. CAPEX as a percentage of fixed assets decreased from 35% in 2020 to 32% in 2021 and further to 22% in 2022. The declining trend in CAPEX as a percentage of fixed assets indicates that the company is spending a smaller proportion of its fixed assets on capital expenditures. This may suggest more efficient utilization of existing assets or a reduced need for significant capital investments.