T**ask 2: Amazon Ratio Analysis Report**

**Summary (TL/DR):**

In the fiscal years ending September 2020-2022, Amazon experienced liquidity challenges with fluctuating ratios. Positive trends in gross margin were offset by concerns in fluctuating EBITDA, declining EBIT, and net margins. The company's solvency is increasingly leveraged, reflected in rising debt ratios. Despite improved total asset turnover, negative fixed asset turnover and return on assets in 2022 raise efficiency and profitability concerns. External challenges, including a cooling e-commerce boom and AWS slowdown, highlight the impact of macroeconomic difficulties. Amazon requires strategic adjustments for sustained growth and resilience in a changing market.

**Liquidity Analysis:**

In the fiscal years ending September 2020, 2021, and 2022, Amazon’s liquidity position exhibited notable fluctuations.

The current ratio, reflecting Amazon’s ability to cover short-term obligations with current assets, increased from 1.05 in 2020 to 1.14 in 2021 but subsequently decreased to 0.94 in 2022. Similarly, the quick ratio, which considers the most liquid assets, declined from 0.53 in 2020 to 0.49 in 2021 before recovering slightly to 0.62 in 2022. The cash ratio remained constant at 0.00 across all three years, suggesting limited cash availability relative to current liabilities.

Inventory days remained relatively stable, ranging from 37.23 to 43.74, indicating consistent inventory management across Amazon as a whole. This is unsurprising given Amazon’s consistent operational management from this perspective. Payable days decreased from 68.58 in 2020 to 56.53 in 2022, suggesting a potential improvement in Amazon's ability to settle its obligations promptly.

The net trading cycle, representing the time it takes to convert inventory into cash, displayed a significant fluctuation, shifting from -8.15 in 2020 to 17.03 in 2022. This indicates a steady decline over the 3 year period in Amazon's operational efficiency (specifcally regarding their predictive ability of inventory stocking).

Working capital as a percentage of sales exhibited volatility, moving from 1.64% in 2020 to 4.11% in 2021 before turning negative at -1.67% in 2022. This negative figure suggests that, in 2022, Amazon’s current liabilities exceeded its current assets. The absolute working capital value also reflected this trend, with a notable decrease from $19,314.00M in 2021 to -$8,602.00M in 2022. Overall, these financial indicators highlight the dynamic nature of Amazon’s liquidity and working capital management during the specified period, but do not indicate an improvement

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.

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.

Operating with a negative Trading Cycle became a source of cash for the company, instead of being a cost for it. However, it can be observed that the Trading Cycle days have reduced over the years indicating that the number of days that they can hold on to the cash has reduced.

**Profitability:**

The profitability metrics for the specified periods indicate both positive and negative trends for Amazon. Gross margin increased from 0.40 in 2020 to 0.44 in 2022, showcasing an improvement in the company's ability to generate profit from its core operations. This suggests effective cost management or potentially increased pricing power.

However, the EBITDA margin experienced fluctuations, starting at 0.12 in 2020, peaking at 0.13 in 2021, and then declining to 0.11 in 2022. Despite the decrease in the margin, the actual EBITDA figures show an upward trajectory, reaching $54,169.00 in 2022. This indicates that, while the margin percentage decreased, Amazon’s absolute EBITDA value increased over the years.

The EBIT margin displays a concerning trend, dropping from (210,408.00) in 2020 to (276,583.00) in 2022. This negative trend suggests that **Amazon’s operating expenses and non-operating costs may be outweighing its operating income, leading to operating losses.**

Net margin, representing the overall profitability after accounting for all expenses, declined from 0.06 in 2020 and 0.07 in 2021 to -0.01 in 2022. A negative net margin implies that Amazon's total expenses, including interest and taxes, exceeded its total revenue in 2022, resulting in a net loss.

In summary, while there are positive signals in terms of gross margin improvement and EBITDA growth, the declining EBIT and net margins indicate Amazon has faced challenges during this period in managing operating and overall expenses. Further analysis of cost structures and revenue streams may provide insights into addressing these profitability concerns.

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:**

The solvency and debt management metrics for the specified periods reveal a mixed picture:

The company's solvency position is becoming more leveraged, as evidenced by increasing debt ratios:

* The Debt to Equity ratio increased from 0.34 in 2020 to 0.46 in 2022, indicating a rise in financial leverage.
* Similarly, the Debt to Total Assets ratio increased from 0.24 in 2020 to 0.46 in 2022, reflecting a higher proportion of debt relative to total assets.

The declining times interest earned (Times Interest Earned ratio decreased from -13.90M in 2020 to -5.17M in 2022) and debt coverage ratios indicate potential challenges in meeting debt obligations. The negative FCFE per share in 2022 (approx. -1.5M) signals a potential strain on the company's ability to generate cash to cover financial needs, emphasizing the importance of effective debt management strategies.

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 Utilization:**

Asset utilization metrics for Amzon provide specific insight into the efficiency of the company's resource management:

In summary the Total Asset Turnover improved over the three year period, maintaining a level of 2.91 in 2020 and 2021, before showing an increase to 3.50 in 2022. This reflects increased efficiency in generating revenue from total assets. However, negative Fixed Asset Turnover and Return on Assets in 2022 (-0.01M and -0.01M respectively) raise concerns about the effectiveness of utilizing fixed assets and the overall profitability of the company. The decline in Inventory Turnover may also warrant attention to optimize inventory management for improved liquidity.

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.

**External Context:**

In the 2022 annual report Amazon did cite wider macroeconomic difficulties in [Andy Jassy’s 2022 letter to Shareholders](https://www.aboutamazon.eu/news/company-news/amazon-ceo-andy-jassy-2022-letter-to-shareholders), but it was not a good sign that they referenced Amazon’s resilience during previous economic downturns (2001 .com bubble, 2008 GFC etc). While global macroeconomic instability has affected the majority of the market in 2022, Amazon was particularly affected as the pandemic fuelled e-commerce boom started to cool off at the end of 2021. Amazon [doubled the size of their warehouse network during the 24 month period](https://www.investors.com/news/technology/amazon-stock-climbs-as-company-seeks-to-rekindle-growth-improve-profits/#:~:text=AWS%20has%20been%20considered%20a,sales%20slowed%20and%20costs%20ballooned.), but expected growth targets were not met, meaning they needed a complete rethink of operations. Amazon’s AWS cloud computing business (a significant driver of growth for an extended period) experienced a [considerable slow down at the same time](https://www.theregister.com/2022/10/28/aws_q3_2022/).

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.