BEHIND THE NUMBERS
Quality of Earnings Analysis

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Marvell Technology, Inc.
Earnings Quality Review (MRVL)

We are initiating earnings quality coverage of MRVL with a 3- (Minor Concern) rating

For an explanation of the EQ Review Rating scale, please refer to the end of this report.

Our review of MRVL revealed several areas where disclosure or discussions concerning expense items such as allowances for distributors, warranties, and inventories are weak to non-existent. There are positives and negatives for non-GAAP EPS related to these items. One of the risks is that MRVL is beating or missing earnings by 1-2 cents in most quarters and nearly all of these items are larger than that amount. Plus, MRVL talks up rapid growth from Artificial Intelligence sales, but has several other areas of the product portfolio seeing weak demand and poor pricing:

- Warranty accruals have been immaterial but suddenly jumped from $0 to $59 million in 2Q24 without explanation. This reduced 2Q24 non-GAAP EPS by 6.4 cents.

- Share compensation is rising in dollar terms and as a percentage of sales and is added back to non-GAAP EPS. We consider this low-quality earnings growth and the increase added 2.5 cents and 2.7 cents to 1Q24 and 2Q24. ***(See below for details)*.**

- MRVL adds back additional items to non-GAAP EPS related to inventory adjustments, legal fees, and gains/losses on investments. This helped 1Q24 and 2Q24 by 4.3 cents and 9.9 cents. These items are not added back by Broadcom (AVGO). ***(See below for details)***

- Accruals for returns, price discounts, price protection, and rebates rose considerably in the last four quarters which netted against sales to reduce sales and margins. This is helping or hurting quarterly EPS by about 7 cents in our view for the last several quarters. ***(See below for details)***

- Inventory levels have come down, but not finished goods. Several chips are in excess supply for weak markets. MRVL can slow production rates, but would still have to pay reservation fees to fabs, which could boost Cost of Goods Sold on fewer units produced. ***(See below for details)***

- Free cash flow is overstated because MRVL has payments to make on technology license agreements that appear in the financing section, not as an expense in operating cash flow or acquisition/capital spending in the investing section. ***(See below for details)***

- Goodwill and acquired intangible assets are the bulk of assets at $16.2 billion, which is larger than the equity balance. It does not expense the Goodwill and adds back the amortization of acquired intangibles. Non-GAAP EPS says these deals had zero cost.

- MRVL reports that deferred revenues (contract liabilities) are immaterial and does not disclose much information about them. It is also conservative in expensing sales commissions as they occur.

What to Watch:

- **Variable considerations are estimates for customer returns, price discounts, price protection, rebates, and stock rotation programs.** These often relate to sales to distributors where MRVL assumes the risk for price erosion. This is about half of MRVL's accrued liabilities. When this account is increased, it results in lower net sales for MRVL. We are not surprised that this accrual has been rising. We know that semiconductor demand exceeded supply for much of late 2021 and 2022. That should have made this type of reserve lower because there would be less risk of price erosion. However, we are surprised at the size of this accrual. It is over one-third of quarterly sales:

	Variable Consideration				Sales			
	4Q	3Q	2Q	1Q	4Q	3Q	2Q	1Q
fiscal 24			$501.5	$426.3			$1,340.9	$1,321.7
fiscal 23	$572.8	$519.3	$387.0	$349.4	$1,418.4	$1,537.3	$1,516.9	$1,446.9
fiscal 22	$258.6	$197.2	$190.5	$170.5	$1,343.0	$1,211.2	$1,075.9	$832.9

- MRVL does not show a full reconciliation here to know how much was utilized and how much was added to the reserve in each quarter. But, we can see some sizeable net movement such as the reserve rising by $75.2 million in 2Q24 or falling by $146.5 million in 1Q24. These moves raise or lower net sales while costs remain the same. This creates a sizeable swing in gross margin. Every $10 million here is worth 1 cent in quarterly EPS.

	7/29/2023	4/29/2023	1/28/2023	10/29/2022
Adjusted Gross Profit	$521,100.0	$557,200.0	$673,300.0	$777,300.0
Adjusted Gross Profit Margin	38.9%	42.2%	47.5%	50.6%

	7/30/2022	4/30/2022	1/29/2022	10/30/2021
Adjusted Gross Profit	$786,000.0	$750,900.0	$686,400.0	$587,800.0
Adjusted Gross Profit Margin	51.8%	51.9%	51.1%	48.5%

- **The AI sales are strong – but MRVL has been pointing to weakness in other sales. As supply chains have opened, this has been a common theme for several other semiconductor companies as well. This may indicate that this reserve account may need to rise further. Here is some of the discussion recently:**
  - 4Q24 revenue guidance of $1.4 billion +/- 5% for a $140 million band. Notice that sales fell sequentially by $119 million as the reserve increased by $53 million. On the call, MRVL noted, *"Sequentially, as our customers dealt with a broad-based inventory correction, revenue declined by 8%, with the majority of the reduction coming from storage products within our data center end market."*
  - 1Q24 revenue guidance was $1.3 billion +/- 5% for a $130 million band. Sales fell $97 million sequentially, and that may have been helped by the reserve declining

by $147 million. A declining reserve should help reported sales due to a lower accrual. On the call, MRVL noted that AI sales were much stronger at $200 million and accelerating. That should have required much lower return/pricing allowances. However, the largest unit is data centers at 40% of sales and it declined by 12% sequentially.

- 2Q24 revenue guidance was $1.33 billion +/- 5% so 2Q results were in line. However, the reserve rose by $75 million. That offset data center sales rising 6% sequentially against a flat forecast. MRVL noted that inventory for the storage area remains overstocked which is depressing demand. That likely contributed to the large jump in the reserve.

- 3Q24 revenue guidance is $1.4 billion +/- 5%. With the largest market oversupplied and a turn-around forecast to be delayed per the 2Q24 call – it is possible that the reserve could rise again this period and hurt sales and EPS. Every $10 million in higher reserve would cost EPS 1 cent.

- **Inventory growth in DSIs has turned down. However, the improvement is coming from work-in-process not finished goods.**

Inv DSI	7/29/2023	4/29/2023	1/28/2023	10/29/2022
WIP	70.2	79.5	92.4	87.9
Fin Goods	42.5	42.6	38.1	26.7

	7/30/2022	4/30/2022	1/29/2022	10/30/2021
WIP	88.1	86.5	80.2	75.4
Fin Goods	26.5	22.7	19.6	16.3

The potential risk is MRVL books space for foundries up to a year in advance. If it doesn't use the manufacturing capacity, it often still has to pay the fees it contracted. That should boost the Cost of Goods Sold and hurt gross margin. We also believe there may be some lingering impact of the semiconductor shortage in 2022 that boosted reservation fees at that time. This year, several markets are overstocked and pricing pressure may be occurring as seen in MRVL's higher accrual. Here is the note in the 10-K regarding manufacturing:

"The Company entered into manufacturing supply capacity reservation agreements with foundries and test & assembly suppliers during the current and prior fiscal year. *Under these arrangements, the Company agreed to pay capacity fees or refundable deposits to the suppliers in exchange for reserved manufacturing production capacity over the term of the agreements, which ranges from 4 to 10 years."*

- There has been a sizeable jump in prepaid shipping for products (much of the work is done in Asia, notably Taiwan). Also, prepayments for supply capacity have increased. Again this is at a time when several areas of MRVL's product line is in oversupply and demand is weaker – outside of AI of course. Again, some of these costs are set up as use-it or lose-it. It could result in MRVL recognizing higher costs over fewer units if it produces less in response to weaker demand in some areas and hurt margins:

Prepaid Ship	4Q	3Q	2Q	1Q
fiscal 24			$498.7	$416.8
fiscal 23	$481.3	$433.5	$342.3	$305.0
fiscal 22	$215.9	$139.8	$172.3	$149.1

Prepaid Capacity	4Q	3Q	2Q	1Q
fiscal 24			$291.3	$295.9
fiscal 23	$282.3	$226.9	$132.6	$116.1
fiscal 22	$54.6	$30.3	$0.0	$0.0

- **We also find it odd that MRVL lists inventory obsolescence as a key risk and critical audit matter and then does not quantify it. It's possible that cost has risen too if the market is oversupplied in several areas as MRVL notes on its conference calls.**

- **MRVL is boosting share compensation as a percentage of sales. This is not only a result of lower total sales in the last two quarters (likely due to the higher reserve for variable consideration), but also higher share compensation.** Because, MRVL adds back share compensation to non-GAAP EPS, this helped MRVL beat forecasts by 2 cents in 1Q24 and 1 cent in 2Q24. A higher amount of share compensation added 2.5 cents to 1Q24 and 2.7 cents to 2Q24.

Stock Comp.	4Q	3Q	2Q	1Q		4Q	3Q	2Q	1Q
fiscal 24			11.4%	10.8%				$152.8	$143.2
fiscal 23	9.2%	9.5%	9.5%	9.1%		$130.7	$146.1	$144.5	$131.1
fiscal 22	10.0%	9.8%	10.6%	11.1%		$134.8	$119.1	$114.1	$92.7

- MRVL is similar to Broadcom (AVGO) in that both are largely fabless semiconductor companies that are benefiting from artificial intelligence demand. **However, MRVL adds back more items to non-GAAP EPS than AVGO.** Both add back share compensation, acquired intangible asset amortization, restructuring charges, and acquisition-related charges. However, MRVL also adds back inventory obsolescence, fair market valuation adjustment amortization, legal costs, and gains/losses from investments. For 2Q24, additional add-backs were $90.7 million which amounted to 9.9-cents. For 1Q24, additional add-backs for $39.6 million for 4.3 cents.

- Free Cash Flow is overstated. We do not want to make this sound like MRVL lacks cash flow or liquidity. The issue is they report payments for technology licensing in the financing section. Here is traditional free cash flow vs. the full amount of cash payments being made:

	1H24	1H23		f23	f22	f21
Cash Ops	$321	$526		$1,289	$819	$817
CapEx	-$211	-$110		-$206	-$169	-$107
Free Cash	$110	$416		$1,083	$650	$710
Cash Ops	$321	$526		$1,289	$819	$817
CapEx	-$211	-$110		-$206	-$169	-$107
Purchase Tech	-$3	-$4		-$11	-$18	-$13
Acquisitions	-$6	-$99		-$112	-$3,555	$0
Tech Licenses	-$79	-$71		-$143	-$135	-$100
Adj. Free Cash	$22	$242		$817	-$3,058	$597

MRVL pays a dividend that is just over $200 million per year. It also likes to repurchase shares, but that is more sporadic. Free cash flow after all its ongoing cash payments can still support the dividend, but it is definitely a lower figure than the traditional definition of free cash flow. On top of that, MRVL already has $4.15 billion in debt and $423 million in cash (although $352 million of the cash is held overseas). MRVL still has $800 million on its credit line that it can access. The gross debt/EBITDA figure is 2.0x, but we would adjust the EBITDA down to reflect the tech purchases.

Explanation of EQ Rating Scale

6- (Exceptionally Strong)- Indicates uncommonly conservative accounting policies to the point that revenue and earnings are essentially understated relative to the company's peers. Higher possibility of reporting positive earnings surprises

5 (Strong)- Indicates the company has no areas of concern with its reported results and we see very little risk of the company disappointing due to recent results being overstated from aggressive reporting in recent periods.

4 (Acceptable)- Indicates the company may have exhibited a minor “red flag”, but the severity of the issue is not yet a concern. Minimal risk of an earnings disappointment resulting from previous earnings or cash flow overstatement

3 (Minor Concern)- Indicates the company has exhibited either a larger number of or more serious warning signs than companies receiving a 4. The likelihood of an immediate earnings or cash flow disappointment is not considered to be high, but the signs mentioned deserve a higher degree of attention in the future.

2 (Weak) Indicates the company’s recently reported results have benefitted materially from aggressive accounting. Follow up work should be performed to determine the nature and extent of the problem. There is a possibility that upcoming results could disappoint as the impact of unsustainable benefits disappears.

1 (Strong Concern)- Indicates that the company’s recent results are significantly overstated and that we view a disappointment in upcoming quarters is highly likely

In addition to the numerical rating, the EQ Review Rating also include either a minus or plus sign. A minus sign indicates that our analysis shows the overall earnings quality of the company has worsened since the last review and there is a possibility the numerical rating will fall should the problem continue into upcoming quarters. Likewise, a positive sign indicates that the overall earnings quality is improving, and the company may see an upgrade in its numerical rating should the trend continue.

Key Points to Understand About the EQ Score

The EQ Review Rating is much more than a blind, quantitative scoring method. While we utilize proprietary adjustments, ratios, and methods developed over decades of earnings quality analysis, the foundation of all of our analysis is reading recent SEC filings, press releases, conference call transcripts and in some cases, conversations with managements.

The EQ Review Rating is not comparable to a traditional buy/sell rating. The Rating is intended to specifically convey the extent to which reported earnings may be over/understated. Fundamental factors such as forecasts for future growth, increasing competition, and valuation are not reflected in the rating. Therefore, a high score does not in itself indicate a company is a buy but rather indicates that recent results are a good indication of the underlying earnings and cash generation capacity of the company. A low score (1-2) will likely result in us performing a more thorough review of fundamental factors to determine if the company warrants a full-blown sell recommendation.

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