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EARNINGS QUALITY & DIVIDEND SUSTAINABILITY RESEARCH

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National Instruments (NATI) EQ Review

Current EQ Rating*	Previous EQ Rating
5+	na

6- "Exceptionally Strong"
5- "Strong"
4- "Acceptable"
3- "Minor Concern"
2- "Weak"
1- "Strong Concerns"

Note that a "+" sign indicates the earnings quality improved in the most recent quarter while a "–" sign indicates deterioration

*For a more detailed explanation of the EQ Review Rating scale, please refer to the end of this report

We initiate earnings quality coverage of NATI with an EQ rating of 5+ (Strong)

The accounting is very clean for National Instruments (NATI) and disclosure in presentations is better than many other companies we follow. The company rarely borrows money, with its largest liability being deferred revenue and it has a net positive cash position against that. It makes some acquisitions, but not every year and not as its primary source of growth. Amortization lives do not differ materially from internally developed assets. With a ROE of 18% and intangibles at 22% of total assets (some of which were developed internally) we see a low risk of an impairment in that area. Its restructuring plans and expenses are very modest compared to many companies we follow and have produced some positive results. The largest issue to monitor is inventory levels. The company maintains a large inventory balance by design as some parts are only available from a couple suppliers and its manufacturing is in Malaysia and Hungary. The DSIs are over 200 days with about half being finished goods and can change by 10-20 days in any given quarter.

Even with the high level of working capital, cash flow is solid and covers the dividend – but the ratio on the current dividend is 60% payout on 2018 free cash flow and 70% on trailing 12-month basis. That looks tighter than most investors would want, but the balance sheet is very liquid. It also has $160 million coming from the sale of its AWR unit to Cadence Design. NATI has started to repurchase some stock as well. The only issue we have with the repurchase is the stock isn't particularly cheap on a trailing basis at 23x adjusted EPS of $1.71 (and subtracting the $3.30 per share in cash) and it has been missing forecasts by 1-2 cents. The company has added to some discretionary accounts of late, which has been a few pennies of headwind for EPS. NATI likely needs some revenue growth to boost EPS at this point.

- **Inventory levels are very high at 224 DSIs. This is by design** given the need to fill-orders and service accounts rapidly. NATI also faces limited sources of supply at times needs to ensure it has inventories available. The company has proven it can support high levels of inventory with minimal impacts on gross margin.

- **The gross margin range has only been about 30-50bp plus or minus in any given quarter**. This can be the result of weaker than forecast sales, large contracts that may involve discounting, or lower software sales. When the reverse is true, the margins tend to be a little stronger. **With EPS of $1.71 – the normal 30-50bp move in gross margin is basically a 4-cent change in EPS or 1-cent per quarter.**

- **Obsolete inventory is a risk that NATI acknowledges. The expense level has been rising recently and the write-off level jumped in 2018.** Recent trends have been headwinds for EPS and the current allowance is up about $3 million in the last two years. **The reserve percentage is higher than 2008 and 2009. It is possible NATI could gain or lose 2-cents in a given year from this source.**

- **Accounts Receivables are down about 6 days in DSOs, despite the accounting change to Revenues for Contracts in 2018 adding about $2.4 million to receivables. Also, NATI has boosted bad debt reserves from 0.8% to 1.4% since 2016. In 2008, the reserve peaked at 3.1%. A 100bp change in bad debt reserves is about 1.5 cents in EPS. NATI may be more likely to see this headwind level off than continue.**

- **Deferred Revenues have held steady despite the rules for Revenues for Contracts in 2018 reducing the figure about $9 million.** The majority of deferred revenues are realized in under one year. We do not see a problem here.

- **The higher R&D figures are due to speeding up software releases.** That means, NATI cannot capitalize as much of its software spending to amortize over time. On the surface, it looks like the company's R&D has moved from about 18% of sales to 20%. **Adjusting for the changes in capitalization and amortization – the spending is actually flat.**

- **Amortization and Capitalization policies are conservative in our view.** The company uses very similar time frames to amortize internally developed software, purchased software, purchased tech, and equipment. NATI is not an acquisition machine, so the intangible assets are actually very small too. We like that management does not have an incentive to boost earnings with mergers as the expense recognition is very similar to internally developed assets.

- **Streamlining and Restructuring has helped margins and not been an absurd cost.** NATI has sought to reduce headcount and eliminate some overhead in recent years. This program over 3-years has cost less than 3% of one-year's sales. Adjusting the results for the costs of this program at the sales & marketing and general & administrative units – shows that NATI may have realized about 200bp in higher margins. That is with stock compensation rising too. There may be more tailwind coming from this program. A 50bp improvement in margin is essentially 4-cents in EPS or 1-cent per quarter.

- **Warranty allowances are down in 2019, but we see this as immaterial.** To have a 1-cent headwind for EPS, it would need to rise $1.5 million and that would put it higher than historic levels. We do not see much of an issue here.

Inventory Is the Largest Moving Part – Risks on Margin Have Been Minor

NATI discusses inventories in numerous risk factors for the business model. Primarily, customers need rapid delivery of product so NATI needs to keep more on-hand. Also, customers can delay or speed up delivery without penalty so NATI bears that risk of having inventory stack up. Larger contracts may require NATI to order more inventory to have on hand specifically for a particular customer. Further, it gets some supplies from only one or two sources and availability is not always assured. Finally, by doing manufacturing in Hungary and Malaysia, NATI can have additional lead times to supply inventory to other areas of the world. All of this means that winning business and maintaining client needs, the company needs to carry higher levels of inventories than many would expect and thus inventory turnover is only about 1.5-1.7x per year.

At the same time, finished goods are often less than half of total inventories:

Inventory	Sept. 19	Dec. 18
Raw Materials	$107.3	$98.3
Work in Progress	$11.6	$9.3
Finished Goods	$87.9	$86.5
Total Inventory	$206.7	$194.1

Inventory	3Q19	2Q19	1Q19	4Q18
Total DSIs	224.3	231.1	251.7	206.0
Finished Goods DSIs	95.2	104.7	114.1	91.8

Inventory	3Q18	2Q18	1Q18	4Q17
Total DSIs	201.1	221.2	244.0	203.2
Finished Goods DSIs	85.2	97.0	107.7	92.6

While it moves within a wide range, it often moves up or down based on the timing of a few sales. Here are some examples:

- 3Q19 – "The increase in inventory was primarily attributable to lower sales than expected."
- 2Q19 – "The increase in inventory was primarily attributable to an increase in raw materials due to increased lead times and higher global demand for certain electronic components."
- 1Q19 – "The increase in inventory was primarily attributable to an increase in raw materials and finished goods, related to lower sales volume than anticipated during the first quarter of 2019."
- 4Q18 – "The increase in inventory is primarily attributable to lower than expected demand, primarily in the APAC region, during the fourth quarter of 2018."

What is worth noting is that the gross margin has been fairly consistent despite some large rises and falls in inventory levels. Some of this is due to adding more software sales with higher margin. It can also be due to fewer very large sales, which can include more discounting. Even with the change to revenue recognition in 2018 from ASU 2014-09 "Revenue from Contracts" – the impact on Cost of Sales was essentially nothing.

	3Q19	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17
Reported Gross Margin	74.8%	74.9%	75.5%	75.6%	74.3%	75.9%	76.1%	75.5%
Adj. Gross Margin	77.3%	77.4%	78.2%	77.9%	77.6%	78.3%	78.5%	77.6%

The company reports a non-GAAP gross margin that adds back stock compensation, amortization of intangibles, any restructuring costs, and the amortization of capitalized software costs.

Even looking at results over five years, the margins improved in 2018 with the change in accounting policy adding about $8 million to Sales and Gross Profit. Margins leveled off in 2019, but seldom changed more than 20-30bp in any given year.

	YTD 19	2018	2017	2016	2015	2014
Reported Gross Margin	75.1%	75.4%	74.5%	74.5%	74.1%	74.4%
Adj. Gross Margin	77.6%	77.9%	76.9%	75.6%	75.3%	75.5%

To us, the company has solid reasons for holding such a large inventory balance. NATI would probably lose sales due to out-of-stock situations if it pared the inventory balance back. The company has sought to pull some costs out of the business model and it appears that may have worked. We estimate that in 2018, the $7.9 million in incremental sales and gross profit from the change to ASU 2014-09 added about 10bp to gross margin. **In any given year there appears to be a risk of 30-50bp of margin. That appears to be no more than 4-cents in EPS at risk for a given year or 1-cent per quarter. We consider that a mild risk.**

Inventory Obsolescence Remains a Risk but NATI has Boosted Reserves

Given the high inventory balances and the fact that the inventory is technology-based, we think the bigger risk is product advancements make some of the current inventory obsolete. NATI believes that much of its inventory has interchangeable parts and longer lives. However, it also notes that there is exposure to obsolescence:

*"The **markets for our products dictate that many of our products be shipped very quickly after an order is received. As a result, we are required to maintain significant inventories**. **Therefore, inventory obsolescence is a risk for us due to frequent engineering changes, shifting customer demand, the emergence of new industry standards and rapid technological advances** including the introduction by us or our competitors of products embodying new technology. However, **our risk of obsolescence may be mitigated as many of our products have interchangeable parts and many have long lives**. While we adjust for excess and obsolete inventories and we monitor the valuation of our inventories, there can be no assurance that our valuation adjustments will be sufficient. In recent years, we have made a concentrated effort to increase our revenue through the pursuit of orders with a value greater than $1.0 million. Fulfillment of these contracts can severely challenge our supply chain capabilities at the component acquisition, assembly and delivery stages. These contracts can also require us to develop specific product mitigation plans for product delivery constraints caused by unexpected or catastrophic situations to help assure timely production recovery and to comply with critical delivery commitments where severe contractual liabilities can be imposed on us if we fail to provide the quantity of products at the required delivery times. In order to help mitigate the risks associated with these contractual requirements, we may build inventory levels for certain parts or systems. **Because our contracts with such customers may allow the customer to cancel or delay orders without liability, such actions expose our business to increased risk of inventory obsolescence."***

The company maintains an allowance for obsolescence on inventories and saw a surge in write-offs in 2018. At this point, the expense as a percentage of sales has been a consistently minor expense:

	2018	2017	2016	2015	2014
Begin Allowance	$16.4	$12.6	$10.1	$9.6	$5.5
Expense	$7.9	$7.1	$5.8	$3.1	$5.8
Write-offs	-$8.9	-$3.3	-$3.2	-$2.6	-$1.7
Ending Allowance	$15.4	$16.4	$12.6	$10.1	$9.6
Net Inventories	$194.1	$184.6	$193.6	$185.2	$173.1
Allowance % Inv.	7.4%	8.2%	6.1%	5.2%	5.3%
Expense % Sales	0.6%	0.6%	0.6%	0.3%	0.6%

In our view, the company has become more conservative in this area by boosting the reserves. It is possible that a large percentage of the high inventory levels could be at risk for a write-down, but history is not showing that. Even going back to 2008 and 2009, the inventory reserve was $4.4 million for both years or 3.9% and 4.8% of inventory. NATI is above those levels now.

If obsolescence becomes a larger item going forward from current expense levels, it could hurt EPS. However, compared to $7-$8 million in 2017 and 2018, adding another $5 million would only cost NATI about 3-cents in EPS. Looking at this in reverse, if the allowance can decline to 6%, it would lower costs by about $3 million and be a 2-cent tailwind for annual EPS.

Accounts Receivable Showing Improving Trends

Receivable balances are declining in terms of DSOs. We think that is a positive by itself. Also, the change in accounting to ASU-2014-09 in 2018 added about $2.4 million in receivables or about 0.6 to DSOs. Yet, DSOs are still dropping:

	3Q19	2Q19	1Q19	4Q18
Total DSOs	60.1	60.8	63.1	61.6
Receivables	$224.3	$222.6	$215.0	$243.0

	3Q18	2Q18	1Q18	4Q17
Total DSOs	63.1	66.9	70.9	64.9
Receivables	$239.5	$249.9	$242.3	$248.8

DSOs in 2017 were essentially 66 days so NATI has cut these figures about 10% since then.

Bad debt allowances have also been increased of late and may not prove to be a headwind for EPS in the near-term:

	2018	2017	2016	2015	2014
Bad Debt Allowance	$3.5	$2.9	$1.9	$2.5	$3.0
% of Receivables	1.4%	1.2%	0.8%	1.1%	1.5%

Historically, bad debt reserves were 3.1% and 2.5% of total receivables in 2008 and 2009. If the company had to add 100bp to bad debt reserves, it would only cost it about 1.5 cents in

EPS. We see a low risk here. In fact, if the allowance holds a flat level, the expense may decline going forward and add 1-cent to EPS.

Deferred Revenues Have Also Remained Stable

As part of the accounting change, deferred revenues declined about $9 million and cut 2-3 days of DSOs in that area in 2018. The company does not have much in the way of long-term deferred revenues and essentially has about half a quarter of sales at any time listed as deferred revenue.

Def. Revenue	3Q	2Q	1Q	4Q
2019	41.9	44.2	47.7	40.5
2018	40.1	42.0	46.5	40.3
2017	43.1	43.5	46.2	40.4

At this point, the accounting change should have run its course and NATI is not showing problems here in our view.

Increase in R&D Spending Is Due to Accounting Change

R&D has risen in the last two years as a percentage of sales to over 20%. This is not due to more investment. Instead, the company has sped up the frequency of new software releases. That in turn, reduced the amount of software investment that could be capitalized and amortized over time. In fact, the entire increase in R&D in dollar terms is coming from lower capitalization of software:

R&D Spending	3Q19 YTD	3Q18 YTD	2018	2017	2016	2015	2014
Research & Dev.	$201.0	$194.9	$261.1	$231.8	$235.7	$225.1	$227.4
Restructuring	$0.7	$1.6	$2.1	$3.5	$0.8	$0.2	$0.4
Adj. R&D	$200.3	$193.3	$259.0	$228.3	$234.9	$224.9	$227.0
R&D % Sales	20.3%	19.4%	19.1%	17.7%	19.1%	18.4%	18.2%

For 2019, the company pointed to lower capitalization for the bulk of the increase in spending. In 2018, that was $28 million of the higher R&D spending.

R&D Spending	3Q19 YTD	3Q18 YTD	2018	2017
Amortization of Cap. Software	$7.2	$13.2	$14.2	$41.7

This is something else that will continue to transition to a lower level as noted in the 10-K:

> "*Due to the shorter development cycle and focus on rapid production associated with agile development, we expect that for a significant majority of our software development projects the costs incurred subsequent to the achievement of technological feasibility will be immaterial in future periods and **we expect to record significantly less capitalized software development costs** than under our historical software development approaches. Consequently, a larger portion of our software development expenditures will be recognized as operating expenses in the future. **We also expect amortization of previously capitalized software development costs to steadily decline as previously capitalized software development costs become fully amortized over the next four years**.*"

But it is important to not see the rising R&D as increased investment. In fact, without this change, R&D spending would be essentially flat:

R&D Spending	3Q19 YTD	3Q18 YTD	2018	2017
Adj. R&D	$200.3	$193.3	$259.0	$228.3
Adj for Cap SW	$6.0	$0.0	$28.0	$0.0
Adj. R&D	$194.3	$193.3	$231.0	$228.3
R&D % Sales	19.7%	19.4%	17.0%	17.7%

Amortization and Capitalization Policies are Conservative

One of our biggest pet peeves is when a company amortizes internally developed assets over a much shorter time than acquired assets. It essentially inflates margins and gives a strong incentive to acquire another company rather than grow internally. In the case of NATI – this is not happening. It does not do a huge number of deals to begin with. It amortizes its own capitalized software over 3-6 years. Acquired technology is amortized over 3-8 years. Purchased software and equipment are depreciated over 3-7 years. All patents are amortized over 10-17 years.

On top of that, these are small total asset values:

Net Intangibles	3Q19
Capitalized Software	$61.1
Acquired Tech	$4.8
Patents	$12.3
Other	$13.0
Total Intangibles	$91.2
Total Assets	$1,628.3

The Goodwill is $259.4 million or 16% of total assets and does not look likely to generate an impairment anytime soon as ROI is over 20%.

The Streamlining Restructuring Has Helped Margins

NATI has been focused on reducing headcount in a few areas of the company and streamlining tasks. What is refreshing for us is the company has spent less than $40 million in this area, which is less than 3% of one-year's sales. It does not look like a big-bath write-off with impairments and reductions in costs by reducing depreciation and amortization with write-downs. We view the small size as a positive.

Also, NATI fully expenses these charges and calls them out by unit. We listed the restructurings for R&D above, but the bulk have focused on the Sales & Marketing along with General & Administrative departments. The company adds them back for adjusted EPS, so it's not a case that EPS followed by analysts will increase without the charges.

R&D Spending	3Q19 YTD	3Q18 YTD	2018	2017	2016
Total Restructuring	$8.7	$10.2	$13.6	$12.2	$2.8
EPS Impact	$0.07	$0.08	$0.10	$0.09	$0.02
Sales & Marketing	$8.3	$8.4	$10.7	$11.0	$0.2
Gen & Admin	$2.5	$1.5	$1.9	$1.9	$0.4

	3Q19 YTD	3Q18 YTD	2018	2017	2016
Sales & Marketing %	35.7%	36.6%	35.5%	37.1%	37.6%
Adj. S&M %	34.9%	35.7%	34.7%	36.2%	37.5%
Gen & Admin %	8.7%	8.2%	7.8%	7.6%	8.0%
Adj. G&A %	8.4%	8.0%	7.6%	7.5%	8.0%

The first line is reported expenses with restructuring charges and the adjusted figure subtracts the restructuring cost. We know that advertising costs used to be $12-$14 million per year and were only $8 million in 2018. However, NATI looks like it pulled over 200bp out of margins in this area even with higher stock compensation offsetting the savings:

	3Q19 YTD	3Q18 YTD	2018	2017	2016
Stock Comp	$38.1	$27.5	$37.6	$29.1	$25.8
Stock Comp % Sales	3.9%	2.8%	2.8%	2.3%	2.1%

There may be some additional tailwind for EPS in the cost savings program. 50bp of margin gain is about 4-cents of EPS. This may be where NATI can still see some EPS gains.

Warranty Issues Look Immaterial to EPS

Warranty reserves have steadily risen in recent years until 2019. The Allowance fell slightly this year, but only about $700,000 and may have added 0.5 cents to EPS. To reach 1-cent in EPS impact, it would need to change by $1.5 million. It looks unlikely to move that high based on historical experience.

Net Intangibles	3Q19 YTD	3Q18 YTD	2018	2017	2016
Warranty Exp.	$1.2	$2.6	$3.4	$2.9	$3.7
Warranty Allowance	$2.5	$3.2	$3.2	$2.9	$2.7

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 Concerns"	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 may 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 the next quarter. 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.

Disclosure

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