BEHIND THE NUMBERS
Quality of Earnings Analysis
March 28, 2024

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Warning Signs at Johnson Controls (JCI)

A forensic accounting deep dive turns up several red flags

The JCI Bull Story

JCI uses third-party distributors for a large percentage of sales. It saw the problems many companies experienced during and after Covid from supply-chain bottlenecks and shortages. Low supply caused customers to place larger orders to ensure delivery which caused JCI to try to build inventory and order more from its suppliers. As bottlenecks broke, customers and distributors worked off excess inventories and JCI's sales volume faltered. This is expected to work itself out in 2024.

Meanwhile, JCI depends heavily on new construction or renovations for much of its demand. This includes commercial real estate in the US as well as around the world and apartments and other industrial real estate demand. All these areas are in various stages of recovery and decline.

Going forward, JCI is guiding to orders recovering causing volumes to turn positive and pricing to stick. However, guidance for the year is very back-loaded with mid-single-digit growth for the full year following -1% in 1Q24 and 0% in 2Q24.

Our Concerns

JCI normally hits earnings forecasts on the nose or beats by only one cent:

	1Q24	4Q23	3Q23	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22
Adj. EPS	$0.51	$1.05	$1.03	$0.75	$0.67	$0.99	$0.85	$0.63	$0.54
Beat/Miss	$0.00	-$0.02	$0.00	$0.01	$0.00	$0.01	$0.00	$0.00	$0.01

This by itself can be a warning sign and means almost any small tweak to reserves or discretionary spending can make the difference in meeting or missing forecasts. JCI cut its fiscal 2024 guidance by 5 cents when it reported 1Q24 results seeing weak China problems.

Our review turned up several concerning signs including:

- Inventory buildup is not improving and volume declines could delay that further

- Fading pricing power could lead to disappointment- a recent change in pricing disclosures heightens that concern

- Receivables and FX trends may be signaling weaker sales

- Acquisition activity is picking back up with large amounts being allocated to goodwill and regular severance charges added back to non-GAAP EPS.

- The dividend already consumes 90% of free cash flow which limits repurchases and acquisitions. Working capital also looks to turn into a headwind.

- Warranty provisions have artificially boosted recent earnings. These amounted to swings of -1.3 cents in 3Q and +1.4 cents in 4Q. For a company that often beats by 0-1 cents on quarterly earnings

- Bad debt reserves look historically low. A reversion to the mean could be a headwind of roughly 12 cps spread over the next few quarters.

Inventory Is Historically High and Is Not Improving as Fast as Some Peers

JCI uses third-party distributors for a significant amount of its sales but we have not seen that quantified. Like many of its peers, Covid-induced supply chain shortages led to over-ordering from distributors and end-users in the 2021-2023 time frame. When supply chain log-jams finally cleared up, it led to a massive build-up of product at all points of the channel as everyone received their multiple orders creating an oversupply of inventory. This caused orders to fall as the channel worked off the new inventories and inventory at companies like JCI backed up.

As a result, JCI's inventory has vaulted to higher than normal levels which can be seen in the table below showing inventory levels and DSIs for the last six fiscal years:

	FY 23	FY 22	FY 21	FY 20	FY 19	FY 18
Inventory	$2,776	$2,665	$2,057	$1,773	$1,814	$1,819
DSIs	56.9	57.4	48.1	43.5	40.7	42.2

Pre-Covid, JCI carried 40-42 days of inventory to the mid-to-high 50s range. While there is some seasonality to results, it appears obvious to us that inventory remains at record levels. However, unlike many of its peers, JCI's inventory has yet to show signs of normalizing while the company seems to keep delaying its expectation of when that will happen. Below are summaries of the company's outlook for inventory for the last seven quarters:

- In 2Q22 – JCI complained of rising inventory and slow backlog fulfillment.
- In 3Q22 - JCI said high inventory is needed to support customers.
- In 1Q23 – JCI noted weaker sales in residential causing higher inventory.
- In 2Q23 – JCI saw channel inventory being worked down hurting sales.
- In 3Q23 – JCI said more channel destocking was occurring.
- In 4Q23 – JCI believes channel inventory is in line with historical levels.
- In 1Q24 – JCI still expects its own inventory to come down as it sits at record levels.

We believe inventory at JCI is at least 15 days too high, which is $650-$700 million. It is not clear that the distributor channel has fully cleared.

Meanwhile, Volume Declines Could Further Delay the Inventory Correction

Until recently, JCI presented an organic growth figure for the full company in its press release defined as volume changes plus pricing impact which it touts as a sign that the business is growing. However, the problem we see is that volume growth is now negative which will make it much tougher to work down its inventories without crushing margins.

The recent change in presenting results has JCI only showing a net organic growth figure and not the price and volume change.

	1Q24	4Q23	3Q23	2Q23	1Q23	4Q22	3Q22	2Q22
Price				10%	10%	9%	8%	6%
Volume				3%	-1%	1%	0%	3%
Organic Growth	-1%	2%	9%	13%	9%	10%	8%	9%
Next Q guide	0%	0%	4%	10%	10%	HSD		

There are several items to note in the above table:

- Until 2Q23, JCI broke out the price/volume components of organic growth, but it stopped in 3Q23 and now only reports organic growth without quantifying price or volume. Disclosure changes are always a red flag (more on that later). We do know that volume growth was already going negative:

- Notice that JCI has now missed its organic growth forecast for the last three quarters.

- We'll let readers judge what actual pricing and volume numbers make the up -1% and 2% organic growth figures in the last two quarters and 0% is forecast for the current quarter. The following management commentary from the last couple of conference calls touting its pricing strength makes us believe that volume growth is definitely negative:

George Oliver on the 3Q23 call:

> *"relative to just pure price when we're planning for '24,* ***we see continued pricing now certainly at a reduced level. But given the continued inflation and how we're***

booking that inflation into our backlog, we still see pricing playing out as we plan for '24."

Oliver Leonetti on 4Q23 call:

*"we believe we're going to be able to **keep the level of pricing we saw in the second half of the year."***

Marc Vandiepenbeeck on the 1Q24 call:

*"So as part of our Building Solutions operating system, **you can see a great improvement, both on the price we can command in the market but also the price realization we see in our backlog** and our executed margin."*

*Global Products, we've always tried to shy away from the more commoditized part of the market. For the parts where we actually have differentiated product, **we see tremendous momentum both on pricing…***

*As we've said previously **(on RESI), we've continued to lead pricing**, making sure that with all of the reinvestments that have been made to support these regulatory changes, that we're positioned to be able to get the proper price and that continues."*

Global Products

Global Products business does report data for organic growth and the news isn't great:

Global Products	1Q24	4Q23	3Q23	2Q23
Price	3%	5%	8%	9%
Volume	-4%	-5%	-2%	3%

Global Products has been a recent source of disappointing news. Backlog growth in the segment fell by 10% last quarter and JCI guided to lower EPS after 1Q results due to increasing weakness in China. In addition, JCI is guiding to a backloaded year after missing growth forecasts.

This could spell disappointing margins in 2024

The fact that organic growth was -1% for the full company in 1Q24 despite higher pricing is strong evidence that overall volume is declining. This will make reducing inventory without crushing margins very difficult as cutting prices is normally part of reducing inventory.

In addition, JCI uses FIFO accounting which expenses older inventory first. As we will explore more below, costs of key raw materials are coming down which will make it difficult to maintain pricing. Under FIFO, higher-cost products may have to flow through the income statement at the same time JCI is working down inventory levels with lower prices. That may be creating the perfect condition for an unexpected hit to margins.

Consider the following table showing EBITDA margins for the last 13 quarters:

EBITA Margin	4Q	3Q	2Q	1Q
fiscal 24				12.8%
fiscal 23	16.0%	16.4%	13.8%	13.7%
fiscal 22	16.5%	15.1%	12.6%	12.3%
fiscal 21	15.9%	16.2%	12.7%	12.0%

Despite the benefit of recent pricing, EBITDA margins have declined YOY for the last two periods. Losing another 25bp of margin would cost JCI 2 cents per quarter in EPS.

Inventory Conclusion:

The high inventory does not destroy JCI. Eventually, the inventory should correct. However, given the weak volume performance, we question if that will be done by the end of the current quarter as guidance is suggesting. We also expect JCI could see some unexpected margin pressure in the process.

Below we will examine our reasons for believing that pricing could be a bigger problem than many expect.

Weakening Pricing Could Lead to a Negative Surprise

Throughout the earnings calls, JCI still touts its ability to take pricing. However, in addition to the pressure to cut prices to move inventory, there are other reasons to expect that JCI may have difficulty maintaining positive pricing. The prices for steel, aluminum, and polypropylene are all down since 2022 levels. Also, semiconductors were in short supply in 2022 and that is no longer the case. Customers are not stupid. They can see the cost of commodities coming down too. As commodity costs fall, so does pricing. **Losing 1% on pricing is a big deal for JCI as would cost it about 8 cents in quarterly EPS.**

So where did the pricing disclosure go?

As we noted above, we consider it a red flag that JCI stopped disclosing the impact of pricing/volume on the organic sales growth for the company as a whole in 2Q 24. However, at the same time, it also stopped quantifying the price/cost impact on the company's EBITA margin. This is the difference between pricing changes vs. changes in raw material costs. When we have seen this in the past for other companies – there are disclosures that this tends to net out to zero over time. In the recent past, JCI has touted its price/cost gains as proof it can take pricing.

We loved this exchange on the 3Q23 earnings calls as the analyst makes a great point:

> ***Analyst****: Yes, okay. Then sorry, one last quick one. How much price did you get in the field business in the quarter?*
>
> ***Olivier Leonetti****: We don't talk about price anymore for the building solution business, because we sell a solution. It's difficult to differentiate price from volume anymore, and we have discussed about this. But you know overall, pricing and value proposition is resonating with our customers.*

> ***Analyst:*** *So then – sorry, so I guess how do you calculate – **if you don't calculate price, how do you calculate price cost then in your slides,** on slide 12 for the solutions business?*
>
> ***Olivier Leonetti:*** *It's mainly going to impact our global business and to an extent also the field.*
>
> ***George Oliver:*** *And Steve, just a comment on that. As we've discussed, we've been building models, robust models from a COGS to value proposition standpoint, and it's calculated on, based on the inflation that we've built into our long cycle businesses and then how that plays out, to then the value proposition that we bring to our customers with the differentiated install, then ultimately which then leads to our service growth, and that's what's in the overall equation there as far as price.*

When it was a smaller item, it was not quantified – just a quick note if it had a positive or negative impact on various divisions. We would have expected it to be negative in 2021 and it was. Many raw materials were in short supply. It bounced back in 2022 with price increases kicking in and the commodity prices peaking and starting to decline. JCI quantified the size of Price/Cost for a few quarters in 2023:

Price/Cost	4Q	3Q	2Q	1Q
fiscal 24				Pos
fiscal 23	$100	$140	$170	Pos
fiscal 22	Pos	Pos	Neg	Neg
fiscal 21	Neg	Neg	Neg	Pos

We would expect price/cost impact to get back to neutral over time. Some of the $100-$170 million boost to EBITA during FY 2023 would have offset some of the negatives in 2021 and 2022. Thus, it is unlikely this will become a $100 million headwind immediately. **But every $10 million lost is 1 cent in quarterly EPS for JCI.**

Receivables Trends and FX May Also Be Signaling Weaker Sales

Along with inventory looking too high and likely to pressure pricing, receivable DSOs are also very high. This could lead to weaker sales – as guidance already points to price reductions:

	1Q24	4Q23	3Q23	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22	4Q21
DSOs	104.3	90.3	90.6	89.4	93.7	85.8	85.1	90.6	92.5	82.4
Sold DSOs	11.5	9.1	5.1	5.5	5.8	6.5	2.7	3.5	2.1	0.0

There is some seasonality here as 1Q sales are lower than other quarters. This makes it necessary to examine the trends YOY.

Notice though that JCI is selling more receivables, which removes them from the balance sheet. The level of sold receivables is up considerably from 2 days of sales in 1Q22 to over 11 in the most recent quarter. Total DSOs in 1Q24 at 115.8 days jumped from 99.5 days in 1Q23 and 94.6 in 1Q22. The high level of receivables could be a sign that the company has pulled sales from future quarters by offering more generous credit terms. Such a situation could lead to an unexpected slowdown in revenue.

Another potential source of revenue disappointment may be exchange rates. FX losses are another justification to take more pricing. However, as shown below, JCI has seen FX losses decline of late and we think that could also put pressure on pricing:

	1Q24	4Q23	3Q23	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22	4Q21
FX $	-$28	-$18	-$100	-$198	-$300	-$328	-$258	-$110	-$45	$57
FX % sales	-0.5%	-0.3%	-1.5%	-3.2%	-5.1%	-5.1%	-4.1%	-2.0%	-0.8%	1.0%

Acquisitions Are Returning

Acquisitions-related reserves were one of the sources of Tyco's infamous accounting problems. Again, we do not believe any of Tyco's past management problems have translated to JCI in any way and JCI's acquisition activity does not compare to Tyco's. However, it is worth noting that JCI is beginning to tout acquisitions as being essential to its business model.

From the 10-K:

> *"Our future success depends on our ability to develop or acquire, manufacture and bring competitive, and increasingly complex, products and services to market quickly and cost-*

effectively. Our ability to develop or acquire new products, services and technologies requires the investment of significant resources."

It further noted the importance of newer products still under patent as generating much more revenue:

"Finally, for those products in our portfolio that rely on patent protection, once a patent has expired, the product is generally open to competition. Products under patent protection usually generate significantly higher revenues than those not protected by patents. If we fail to successfully enforce our intellectual property rights, our competitive position could suffer, which could harm our business, financial condition, results of operations and cash flows."

Another clue that JCI plans to do more deals is that R&D has remained very flat for several years now despite inflation:

	Fisc 23	Fisc 22	Fisc 21	Fisc 20	Fisc 19	Fisc 18
R&D spending	$320	$295	$275	$274	$319	$310
% of Sales	1.2%	1.2%	1.2%	1.2%	1.3%	1.3%

In recent years there have been two material acquisitions: Silent-Aire in 2021 and FM Systems in 2023. If we look at the allocation of payment here, a considerable amount is going to Goodwill that is not expensed:

- Silent-Aire cost $760 million. $244 million went to Goodwill and $67 million to indefinite-lived intangibles that will not be expensed. That's 32% and 9% respectively. Another $430 million went to other intangibles that will be amortized.

- FM Systems cost $548 million. $399 million went to Goodwill or 73%. Another $194 million went to other intangibles.

- In 2022, some smaller deals cost $323 million with $194 million going to Goodwill.

- On the positive side - JCI's adjusted EPS does not add back the amortization of other intangibles. Based on the projection for 2024 amortization – this is 13 cents in EPS.

- On the negative side – JCI doesn't expense its $18.1 billion in Goodwill – which is adding 17 cents to EPS every quarter. Note that it is not JCI's decision to not amortize its goodwill as GAAP does not allow it to. However, it does have a say in how much is allocated to goodwill versus intangibles which are amortized.

- On the negative side – JCI has already taken goodwill impairments on the Silent-Aire deal with $75 million in 2022 and $184 million in 2023. There was also $106 million in impairments on long-lived assets in 2023. These were all added back to EPS and EBITA.

While not fully related to acquisitions – JCI continues to take large charges for severance, nearly every year. These are cash costs that are added back to both adjusted EPS and EBITA:

	Fisc 23	Fisc 22	Fisc 21	Fisc 20	Fisc 19	Fisc 18
Severance	$276	$182	$68	$196	$0	$209

Free Cash Flow Has Some Question Marks Too

JCI reports a fairly standard definition of free cash flow other than adding back the cash consumed by its JC Capital unit which we will let stand for now. However, given that the company has stated that acquisitions are important and have become a recurring use of cash flow for three years now, we believe that cash acquisition spending should be removed from free cash flow for the purpose of evaluating dividend coverage. The following table shows cash flow details for the last three years:

Free Cash Flow	2023	2022	2021
Cash Ops	$2,221	$1,990	$2,551
JC Capital	$137	$0	$0
Adj. Cash Ops	$2,358	$1,990	$2,551
CapX	$539	$592	$552
JCI FCF	$1,819	$1,398	$1,999
Acquisitions	$726	$269	$725
Real FCF	$1,093	$1,129	$1,274
Dividends	$980	$916	$762
Shr Repos	$625	$1,441	$1,307

Points to note:

- JCI's dividend is already consuming almost 90% of free cash flow after taking cash acquisition spending into account.

- Share repurchases have also helped EPS growth and JCI is not producing the cash flow to pay for that and its dividends. Also, consider that for a company meeting estimates or beating by 1 cent, JCI picked up 6 cents from the lower share count in 2023 and 9 cents in 2022. Reducing the share count is a key part of EPS growth.

Working capital could drain cash flow in the near term as well.

According to JCI, working capital has been a big headwind with inflation. But notice that's not really the case overall – even though it was for inventory:

Wrk Cap Chg	2023	2022	2021
Inv. y/y	-$111	-$608	-$284
A/R sold	$205	$349	$127
A/R y/y	-$279	-$114	-$319
A/P y/y	-$100	$622	$626
	-$285	$249	$150

- Payables have grown faster than inventories. Also in 2023, JCI set up a system for its suppliers to sell the receivables they have from JCI (which are payables for JCI) and the amount of payables sold was $559 million at the end of 2023. If that program was not in place, JCI may have needed to reduce payables by an amount greater than $100 million last year.

- The gross amount of receivables sold has been a positive for cash from operations in each of the last three years. That is offsetting much of the total receivable growth on a y/y basis.

- Inventory costs are already coming down via lower commodity costs. That source of future cash flow should be offset by reducing payables more too. If pricing growth falters and turns negative as well – JCI should get less from selling receivables but have A/R on the books fall with lower selling prices too.

- Examine the tables below. We simply do not see a huge amount of working capital that on a net basis will turn back into cash and fix the problem that JCI will have a tough time paying for deals, its dividend, and share repurchases going forward.

	Fisc 23	Fisc 22	Fisc 21	Fisc 20	Fisc 19	Fisc 18
Inventory	$2,776	$2,665	$2,057	$1,773	$1,814	$1,819
DSIs	56.9	57.4	48.1	43.5	40.7	42.2
Payables	$4,268	$4,368	$3,746	$3,120	$3,582	$3,407
DPOs	87.4	94.0	87.6	76.6	80.3	79.0
Factored	11.4	0.0	0.0	0.0	0.0	0.0
Gross A/R	$6,777	$6,269	$5,850	$5,467	$5,943	$5,841
Bad Debt	$90	$66	$110	$173	$173	$169
Bad Debt %	1.33%	1.05%	1.88%	3.16%	2.91%	2.89%
DSOs	92.3	90.4	90.2	89.7	90.5	91.1
Sold DSOs	9.3	6.9	2.0	0.0	0.0	0.0

	1Q24	4Q23	3Q23	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22	4Q21
Inventory	$3,006	$2,776	$3,092	$3,048	$2,895	$2,665	$2,574	$2,515	$2,425	$2,057
DSIs	67.4	62.3	59.8	61.7	67.0	55.3	53.1	54.7	56.2	45.0
Payables	$3,976	$4,268	$4,296	$4,348	$4,138	$4,368	$4,125	$4,101	$4,083	$3,746
DPOs	89.2	95.7	83.1	88.0	95.7	90.7	85.0	89.1	94.6	82.0
Factored	12.5	12.7								
	1Q24	**4Q23**	**3Q23**	**2Q23**	**1Q23**	**4Q22**	**3Q22**	**2Q22**	**1Q22**	**4Q21**
Gross A/R	$6,908	$6,777	$7,026	$6,498	$6,180	$6,270	$6,117	$6,002	$5,897	$5,723
Bad Debt	$102	$90	$89	$94	$74	$66	$72	$79	$91	$110
Bad Debt %	1.48%	1.33%	1.27%	1.45%	1.20%	1.05%	1.18%	1.32%	1.54%	1.92%
Gross DSOs	104.3	90.3	90.6	89.4	93.7	85.8	85.1	90.6	92.5	82.4
Sold DSOs	11.5	9.1	5.1	5.5	5.8	6.5	2.7	3.5	2.1	0.0

Other Earnings Quality Concerns- Warranties and Reserves

Warranties

We noticed that JCI took an unusually large charge in 3Q23 to build up its accruals for existing warranties It then reversed this back into earnings in 4Q23:

	1Q24	4Q23	3Q23	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22
Warranty Accrual	$30	$35	$30	$40	$29	$37	$37	$22	$22
Settlements	-$27	-$33	-$22	-$28	-$29	-$35	-$40	-$10	-$29
Chg in Estimates for Existing Warranties	$0	-$11	$10	$2	$0	$3	-$1	-$8	$0

These amounted to swings of -1.3 cents in 3Q and +1.4 cents in 4Q. For a company that often beats by 0-1 cents on quarterly earnings, it is worth watching warranties.

Allowance for Bad Debts

Pre-Covid, JCI's allowance for doubtful accounts was 2.9% of gross receivables and its DSOs were 90 days:

	1Q24	4Q23	3Q23	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22	4Q21
Gross A/R	$6,908	$6,777	$7,026	$6,498	$6,180	$6,270	$6,117	$6,002	$5,897	$5,723
Bad Debt	$102	$90	$89	$94	$74	$66	$72	$79	$91	$110
Bad Debt %	1.48%	1.33%	1.27%	1.45%	1.20%	1.05%	1.18%	1.32%	1.54%	1.92%
Gross DSOs	104.3	90.3	90.6	89.4	93.7	85.8	85.1	90.6	92.5	82.4
Sold DSOs	11.5	9.1	5.1	5.5	5.8	6.5	2.7	3.5	2.1	0.0

Now, JCI is only reserving 1.5% and DSOs have climbed to 104 days. It is also selling almost 12 days of receivables now. If the company had to rebuild the allowance percentage to 2.9%, it would cost about $97 million or about 12 cents of EPS. This would not all hit earnings in a single quarter, but could easily be a headwind of a few cents per quarter for a company that is meeting or barely beating EPS.

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