BEHIND THE NUMBERS
EARNINGS QUALITY & DIVIDEND SUSTAINABILITY RESEARCH

BTN Research

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Dentsply Sirona (XRAY) EQ Review

Current EQ Rating*	Previous EQ Rating
3-	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 XRAY with an EQ rating of 3- (Minor Concern)

The company has made a significant recovery in operating margins since writing off a huge amount of the Sirona acquisition in the two years following the deal and it started a restructuring in 2018 that likely can achieve some of the goals for margin improvement. We say that because laying off employees and divesting some lower-margin units are key components, which should lower the overall cost structure quickly.

However, there is still an SEC investigation into its accounting and disclosure following the fireworks of 2017 and 2018. Moreover, we believe inventory issues remain a significant risk factor that may impact sales and margins in greater amounts than the company's restructuring plans can consistently offset. The inventory at 123 days along with distributor inventory of another 70 days is down from the peaks but remains the largest moving part of this operating model. When inventory issues arise – XRAY has seen margins fall by as much as 500bp. Plus, plans to emphasize even faster rollout of newer technology equipment may create earnings headwinds in the form of higher R&D, higher inventory impairments of older products, lower inventories held by distributors, and pricing pressure impacting existing products more quickly. Inventory problems of this nature caused much of the 2017 and 2018 problems. If nothing else, volatility of sales, margins and EPS may increase.

The potential for more volatility to inventory and earnings also removes some of the big picture story on this being a steady growth company benefitting from older people keeping teeth longer and more middle-class people in emerging markets visiting dentists. Sales have been basically flat for four years despite forecasts of mid-single-digit growth in the industry that will continue to drive sales going forward from $4 billion in 2017, 2018, 2019 to about $4.4 billion in 2022.

We also think much of the cost savings have already been seen in the margin recovery of 2019, but the company's profitability remains below 2016 levels and its forecasts only call to match 2016 margins by 2022. Investors did not see much evidence of the cost savings from the Sirona deal that were estimated at $125 million or about 300bp of margin improvement. EPS moves between $2.00 and $3.00 now and we wonder if investors are factoring in the potential of greater volatility to earnings going forward.

- **XRAY is working to establish more direct sales with end users but still does about 60% of its total sales with third-party distributors.** Also, the company wants to increase the speed at which new technology products are introduced. Initial stocking in the distributor channel of new products is a quick way to help sales and margins.

- **Technology products have a more uneven sales flow and distributors can change their inventory levels quickly, which effectively stops sales at XRAY for particular products and leads to price-cutting. In the last 19 quarters, adjusted quarterly EPS has ranged from $0.38 to $0.82 and the biggest variables for those big swings are distributors building or shrinking inventory levels and the severity of pricing pressure.**

- **XRAY has about $600 million in inventory and it turns slowly as that represents 123 days of sales. In 2018, the company estimated that distributors cut their inventory levels by about $100 million. That cut operating margins from 21.8% in 2016 to 15.5% in 2018.**

- **At this point, XRAY's 123 days of inventory is down from peaks of 135 and 143 days. Distributors are about 70 days too down about 4-5 days from 2018.** It still seems there is pressure to reduce that figure at the distributors. This bears watching because of how much it can reduce margins. 100bp hit to margins is about 14-cents in EPS for a company that is estimated to earn $2.45.

- **New technology also leads to lower pricing on older equipment and impairments on inventory. This is a significant cost too. Against a net inventory of $600 million, XRAY has a reserve of $86 million. O**nly 64% of inventory is finished goods and the company still does about 45% of its sales in consumable products. We think XRAY is holding the bulk of that reserve against what may only be $250-$300 million of inventory – that's basically one-third. Changes to this assumption also impact EPS. A small cut in the percentage added 2.4 cents ytd to 2019 EPS.

- **If the company is going to introduce more new products, we believe that increases the risks that older products get marked down more quickly too and increases the risks that distributors lower their inventory levels.** That may create some periods of very strong earnings at the tech unit followed by periods of rapid decline. There are recent quarters where the tech side did over $100 million in quarterly operating earnings when things are working as planned. There are also recent quarters where the tech unit noted $8-$12 million in inventory destocking and pricing pressure on older equipment caused tech operating earnings to fall below $50 million.

- **We don't have to warn about growth through acquisition risks as that bomb already went off at XRAY causing it to write-off one-third of intangible assets. We still think investors should be concerned that the company sees more acquisitions as a likely source of growth.** Also, the amount of cash flow going to offset the share dilution via repurchases and the dividend is already consuming essentially all of free cash flow.

- **Investors should also be skeptical about lots of synergies and cost-cutting beyond layoffs in our view.** XRAY promised $125 million in synergies in 2015 with the Sirona deal – that's over 300bp of margin. They also are promising $200 million of savings by 2022 compared to 2018 or 450bp. Yet, the margin before Sirona was 20.2% in

2015, Sirona was a higher margin company added to the mix in 2016, and **the forecast is for 2022 to see a 22% margin. The margin in 2016 was 21.8%. Seven years of work to get back to even?**

Inventory Issues Remain at XRAY and Can Quickly Impact Margins

About 60% of total sales are down through third-party distributors such as Henry Schein and Patterson Dental. That means there are two levels of channel stocking for new products and when the distributors have slow sell-through of particular products their replacement orders may go to zero for a while as they opt to carry fewer inventory units. Older products may see sales cannibalized by new products as orders vanish unless prices are cut and that acts as an offset to sales growth from new product channel stocking. Also, XRAY can often spur distributors to take on extra inventory ahead of a price increase, which helps sales in the short-term and hurts sales shortly after the price increase.

The result is XRAY can see gross margins change by 200-300bp and operating margins by 500-700bp when high inventories are being worked down and new orders from the distributors weaken. Here are the adjusted figures – adding back amortization for purchased intangibles, restructuring charges, and various cost for business combinations:

XRAY Adj. Gross Margin	4Q	3Q	2Q	1Q
2019		57.6%	58.2%	57.8%
2018	54.4%	55.4%	56.9%	58.0%
2017	58.1%	59.1%	58.8%	58.9%
2016	58.2%	57.8%	60.2%	60.6%
2015	58.8%	60.1%	60.2%	58.9%

XRAY Adj. Oper. Margin	4Q	3Q	2Q	1Q
2019		18.1%	20.2%	15.6%
2018	16.8%	13.0%	17.4%	14.6%
2017	21.9%	21.2%	19.8%	16.6%
2016	20.9%	20.8%	23.1%	22.2%
2015	19.9%	21.0%	21.2%	17.8%

Also, XRAY sells two types of products Consumables, which are used for nearly all patients such as teeth whitening products, small instruments, polishing equipment, ultrasonic scalers and ceramic tooth repair and Tech Equipment, which are dental chairs, CAD/CAM,

Imaging equipment to name a few. For the most part, the consumables have fairly steady results. Looking at three years of results by quarter shows that Tech is the more volatile unit due to inventory swings at distributors:

Tech Division	3Q19	3Q18	3Q17
Sales	$534.5	$508.5	$549.1
Oper. Profit	$104.7	$48.1	$127.0
Consumable			
Sales	$416.1	$412.1	$450.7
Oper. Profit	$113.8	$102.3	$129.8

- 3Q19 comments – Tech sales were helped by new products in CAD/CAM and orthodontics and hurt by weakness due to competitive pressures for imaging. Gains helped because 3Q18 included an estimated $34 million cut in inventory by certain distributors.
- 3Q18 comments – Consumer sales and margin hit by unfavorable product price and product mix along with the relocation of European distribution.

Tech Division	2Q19	2Q18	2Q17
Sales	$558.4	$553.2	$523.1
Oper. Profit	$96.0	$68.8	$98.0
Consumable			
Sales	$442.1	$479.5	$459.9
Oper. Profit	$121.8	$143.4	$122.8

- 2Q19 comments – Tech helped by new product sales and 2Q18 included an estimated $26 million cut in inventory by distributors.
- 2Q18 comments – Higher sales drove profit gains at Consumer. Tech hurt by destocking and unfavorable product price and mix.

Tech Division	1Q19	1Q18	1Q!7
Sales	$520.8	$510.1	$467.9
Oper. Profit	$71.8	$68.5	$54.0
Consumable			
Sales	$414.2	$435.7	$421.5
Oper. Profit	$105.7	$114.7	$116.0

- 1Q19 comments – Tech improved y/y without the $8 million inventory cut by distributors in 2018. Consumer profit hurt by lower sales and higher manufacturing costs.
- 1Q18 comments – Tech's $8 million inventory cut lower than $12 million cut by distributors in 2017, FX positive, pricing positive. Consumer hurt by product mix, helped by FX and pricing.

The company's annual reports call this out too and we think it is important that after the Sirona merger in early 2016, there was very little mention about distributors doing much with inventory levels even a year later. Yet, it was getting hurt by a 450bp hit to gross margin in 3Q16 due to unfavorable product mix which sounds to us that XRAY was having to mark down older equipment prices and units were not selling well to the distributors. In 2Q17, the company cited a change to distribution strategy, lower sales to distributors and lower sales to end-users backing up on them as margins fell noticeably.

While everyone is aware that 2018 was a disaster for inventory cuts by distributors and set XRAY up for very easy comps in 2019 – we think investors should realize that changes to inventory levels were not a one-time event. Also, product aging and new innovation also can trigger big changes in margin. Also, just isolating the margin – 100bp swing is worth about 3.5 cents in EPS per quarter or 14-cents per year. With 200-300bp swings being common – there is more volatility to earnings here than one would think hearing the common case for steady growth based on more middle class in emerging markets going to the dentist and people in developed markets living longer and keeping teeth longer.

Current Inventory Status Suggests 2019's Rate of Improvement May Stall

We are looking at inventory levels and it was obvious that XRAY was running with much higher inventory levels in 2017 and 2018 than it had historically. That impacted the gross margins as noted above:

XRAY DSIs	Dec	Sept	June	March
2019		123.2	118.5	126.3
2018	102.2	135.6	124.3	143.8
2017	114.2	126.6	121.4	126.2
2016	103.7	115.2	96.4	93.4
2015	104.8	118.0	114.7	122.6

We are going to ignore the 1Q and 2Q of 2016 as the Sirona merger was occurring and that impacted the numbers. There is also some seasonality to sales where price increases typically happen in 1Q or end of 4Q. That leads to higher sales in 2Q and 4Q in most years so they oven end those periods with lower inventories. The 1Q and 3Q would have inventory build-up at the end of those periods to deal with the seasonally stronger quarters coming up.

Looking at the DSIs we would conclude that XRAY is certainly improved from 2017 and 2018 levels but may still be 4-5 days too high on DSIs. Also, looking at Henry Schein and Patterson Dental, which are two of XRAY's largest distributors – they still appear to be pushing down inventories based on recent trends:

Patterson DSIs	Dec	Sept	June	March
2019		64.3	71.1	61.8
2018	70.3	65.2	73.3	64.1
2017	74.5	67.9	70.6	58.6
2016	70.7	66.0	71.8	60.5

- Patterson uses Jan/Apr/July/Oct for its months

Henry Schein DSIs	Dec	Sept	June	March
2019		71.1	74.3	77.7
2018	72.9	73.8	72.6	79.1
2017	73.0	66.4	64.4	70.6
2016	66.0	64.6	65.4	70.8

When the distribution channel cuts inventories, it should mean that XRAY immediately gets lower sales. We don't have enough information to determine inventory by division. Conceptually, it seems to us that consumables have a more clearly planned sales cycle and they are cheaper products – some of that is likely delivered to end-users automatically. We doubt the channel needs a 200 day supply of much of that on-hand at XRAY for 130 and the distributor at 70 days. That inventory probably turns much faster too. We believe that much of the inventory is focused more on the tech area which is higher cost per unit. Moreover, XRAY's inventory turn is about 3x per year – the tech stuff may be turning less than 2x. That again would indicate some inherent volatility here based on new tech causing demand for older tech to fall and lead to price cuts. Also, if the dentist has equipment already installed that is still working but buys a new one to upgrade – does he necessarily need the new one delivered and set up in 9 hours or can this arrive in two weeks? It seems that there may be pressure from the distributors to reduce the size of their inventory more rather than grow it.

No one is at the problem levels of 2018 on inventories. We doubt XRAY will see the same rate of improvement going forward as the distributors still seem more likely to reduce their inventories by a couple more days. We think this is always a risk for XRAY, but on the level of 1 to 5 (mild to extreme) – it looks like a 2 or 3 right now.

Inventory Reserves Are Also Worth Watching

One of the ways that XRAY is planning to turnaround its results long-term is to speed up the roll-out of new equipment and upgrades. New products tend to get stronger pricing and they get to fill the channel again before end-user sales even begin.

The downside to that is existing product-lines may have shorter lives. That means older products may need to be marked down more quickly and capitalized R&D and software may see cost expensing accelerate too. XRAY maintains a valuation allowance against inventory. Given the size of the disruption to the business in 2018, it's not overly surprising that the reserve fell slightly in 2019. However, we would expect that to become a continual drag on EPS rather than helping EPS. More importantly, will this change also condition the distributors to stock less inventory overall. If they don't stock as much – XRAY's sales could see volatility increase too.

Inv. Reserve	3Q19	2018	2017	2016
$ amount	$85.9	$92.5	$71.7	$37.5
% of Inventory	12.4%	13.4%	10.3%	6.8%

So far in 2019, XRAY has picked up 2.4 cents in EPS from cutting this reserve level. We aren't saying that's a red flag given the high level it hit in 2018. However, this is another area to watch if it rises again as a potential warning sign that distributors are reducing purchases and/or holding less inventory that will back up and negatively impact sales. We also think this is a key area because while the reserve is 12.4% of inventory – finished goods are only 64% of inventory. We would think very little of the impairment reserve is working against raw materials and work in process. So, the actual reserve could be closer to 22% of inventory if we apply it to only finished goods.

The way this will work under the new plan is higher R&D and higher inventory reserves. XRAY will expect to offset that against higher sales and stronger pricing on new products. The issue to discuss is the goal is to have 20% margins by the end of 2020 and 22% by 2022.

Both R&D and inventory charges will likely be rising to offset that. R&D has risen from 2.8% of sales in 2015 to 4.0% in 2018. If the reserve is already above 20% of finished goods and we know inventory is a big asset subject to large swings in valuation – there seems to be an inherent headwind working against the profit goals.

History Makes Full Restructuring Goals Suspect

XRAY is in the middle of a $275 million restructuring plan. The goal is to streamline costs, combine divisions, and focus efforts on more new products. It is expected to result in an operating margin of 20% by the end of 2020 and 22% by the end of 2022.

The first problem is before the Sirona deal, XRAY had margins of about 20% and Sirona 25% and the company announced it would find $125 million of synergies.

Sirona	2015	2014
Sales	$1,161.3	$1,171.1
Adj. Op. Income	$289.2	$277.1
Margin	24.9%	23.7%

Sirona's 2015 income rose by $12 million and $10 million came from reducing R&D.

XRAY	2015	2014
Sales pre Metals	$2,581.5	$2,792.7
Adj. Op. Income	$521.1	$512.8
Margin	20.2%	18.4%

XRAY had income rise by $8 million with R&D down $6 million from 2014 to 2015.

So, combining a 25% margin business and a 20% margin business should have resulted in a 21.6% business without changing anything else. The company promised $125 million in synergies which should have added 330bp to margins giving investors a 24.9% adjusted operating margin (pre-amortization and merger costs).

In the 2016 letter to investors, XRAY touted the results. The combined company had 3.6% constant currency revenue growth and with the benefit of synergies achieved a record 21.8% adjusted operating margin. It doesn't sound like they successfully added any synergies.

More importantly, as we showed above on a quarterly basis – inventory issues more than outweighed the presence of any synergies and 2016 remains the peak year for margins. Here are the annualized figures:

XRAY	2019 YTD	2018	2017	2016
Adj Op. Margin	18.0%	15.5%	20.0%	21.8%

The goal of the restructuring is to pull $200-$225 million of cost out of the company by 2021 and achieve 3-4% revenue growth. That would have sales at about $4.4 billion vs. $4.0 billion in 2018 and $200 million is 450bp. That alone would put the margin at 20%. Layoffs are a big part of the cost savings and we have little doubt much of those types of savings can be achieved. But, they have owned Sirona for 4-years and we would believe that much of the integration has already happened and that was supposed to produce $125 million in synergies or about 300bp.

Keep in mind that R&D will be rising more by design as XRAY wants to focus on speeding the release of new technology. That will be a drag against margins as will inventory write-downs. Also, how much tech inventory will distributors carry if they see it increasingly has shorter lifespans? Now, it's potentially back to the problems of 2018 again of distributors buying less and having that back up into sales and inducing pricing pressure. Those are margin headwinds in our view.

What we believe is the bigger issue for XRAY is not can it pull some additional costs out of the business model – but can this company generate consistent and growing EPS? History shows us that even with tailwinds of demographics to help sales and taking costs out of acquired companies – this company's earnings are still far more influenced by whether they can put more inventory in the channel, or the channel is cutting back. Adjusted EPS may have a band of $2.00-$3.00 per share and investors are better off trying to play changes in the inventory situation than viewing this as a steady growth company:

XRAY	2019e	2018	2017	2016	2015
Adj. EPS	$2.45	$2.01	$2.66	$2.78	$2.63

Think of it this way also, the restructuring goal is to save $200 million by 2022. That is off the low of 2018. $200 million in savings is about $0.70 in EPS. That is not insignificant –

but it still has the company in the $2-$3 band of EPS that will move based on inventory issues.

The Company Still Views Acquisitions as a Growth Vehicle

Anyone who needs to see the downside of growth via acquisition and aggressive accounting assumptions can use XRAY as an example. If we just hit the highlights, much of the purchase price of deals went into Goodwill, which wasn't expensed. This reached the highpoint in 2016 at just under $6 billion or 52% of total assets. Remaining acquired intangible assets of just under $3 billion or 26% of total assets in 2016 were being amortized – but over 12-15 years (some as long as 20 years) versus internally created technology that was either expensed as incurred or capitalized and amortized over a much shorter period.

In 2016, the company's annual impairment testing on these intangible assets showed that the value was comfortably exceeded by the carrying value even if goodwill was valued at a discount rate 100bp higher or the computed value for every operating unit at the company was cut by 5%. Goodwill was still undervalued on the balance sheet. Other intangibles met their test even at a discount rate 50bp higher or 10% cut in estimated value. Yet even before the inventory issues hit, the impairments began in 2017:

XRAY	2019 ytd	2018	2017
Goodwill Impairments	$0.0	$1,085.8	$1,650.9
Intangible Impairments	$9.1	$179.2	$346.7

Remember, in 2017 – the company had a 20% operating margin – the same target the company is aiming for in 2020. It also saw a sales increase of 7% and operating income declined only 1.6%. Tax-reform happened during this time as well. Inventory issues were minor in 2017 too and the company tightened the hurdle rate from 6.7%-14.7% in 2016 to 7.8%-9.5% in 2017. Investors were told that a 100bp increase in the hurdle rate would not create an impairment only a year before. Yet, even with those positives or only mildly bad news, that started the writedown of over $3 billion of the $9 billion of intangibles. XRAY cited competitive pressures and new distributor agreements with Henry Schein and Patterson as reasons they reduced forecasts and thus the value of acquired assets. We're not sure any of those generic reasons were suddenly new one year after buying Sirona. But it appears to us that inventory issues set off this bomb too.

The company will argue that all these impairments were non-cash and it still adds back amortization of acquired intangibles in reporting adjusting EPS. It doesn't look non-cash to us. XRAY has seen flat cash flow despite being a larger company, free cash flow fall as the larger company needs more capital spending, its share-count increased by 101 million shares, and repurchasing stock to mitigate the dilution has become a larger cash need too. The debt situation is not problematic at $1.2 billion (less than 2x EBITDA), but cash flow is not covering the dividend and stock repurchases very often.

XRAY	2019 ytd	2018	2017	2016	2015	2014
Cash from Ops	$333.5	$499.8	$601.9	$563.4	$497.4	$560.4
Cap. Exp.	$86.9	$182.5	$144.3	$125.0	$72.0	$99.6
Acquisitions	$3.3	$130.5	$145.9	$341.8	$54.0	$8.6
Free Cash Flow	$244.2	$186.8	$311.7	$96.6	$371.4	$452.2
Dividend	$58.7	$78.6	$78.3	$64.6	$40.0	$37.3
Share Repo	$160.0	$250.2	$401.4	$813.9	$112.7	$163.2
Number of Shares	225.2	224.3	229.4	221.6	142.5	144.2

- The merger in 2016 cost $6.26 billion in stock that is not in the acquisition figures

Even after the huge impairments, XRAY still sees acquisitions as a way to add to its research and development and grow overall. We don't see much cash flow to pay for it though:

From the 2018 10-K:

> "*In addition to the direct investment in product development and improvement, the Company also invests in these activities through acquisitions, by entering into licensing agreements with third parties, and by purchasing technologies developed by third parties.*"

Also 2018 10-K:

> "*Dentsply Sirona believes that the dental consumable and technology products industries continue to experience consolidation with respect to both product manufacturing and distribution, although they remain fragmented thereby creating a number of acquisition opportunities. The Company views acquisitions as a key part of its growth strategy. These acquisition activities are intended to supplement the Company's core growth and assure ongoing expansion of its business, including new technologies, additional products, organizational strength and geographic breadth.*"

The Pension Plan Is Underfunded – But Assumptions are Very Conservative

XRAY has a $512 million PBO for its pension with assets of only $173 million at the end of 2018. The shortfall of $339 million does not meaningfully add to debt. The annual cost recorded is about $23-$25 million. The cash funding has been under $20 million per year.

The PBO is calculated on a discount rate of only 1.8% which is half the rate we see for many other companies. Also, they are only assuming a 2.9% rate of return on the assets so that is doing very little to offset the service and interest costs in the pension expense calculation.

Perrigo (PRGO) EQ Review

Current EQ Rating*	Previous EQ Rating
3-	na

EQ Rating Scale
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 PRGO with an EQ rating of 3- (Minor Concern)

We followed PRGO for many years, issuing multiple sell recommendations on the company. Our basic problem with the company was centered around the fact that its basic business model of buying the rights to OTC and off-patent drugs generated little in the way of organic growth. Newly-acquired products showed initial growth upon release, but quickly peaked and began a slow decline from pricing pressure as competitors caught up. In order to continue to represent itself as a growth stock, the company was forced to make a continuing string of acquisitions including its ill-fated Omega Pharmaceutical purchase and its 2013 pickup of the *Tysabri* rights through its $9.5 billion acquisition of Elan. Promised synergies never occurred and debt rose to alarming levels. Things came to a head when an activist shareholder pressured the company to sell the *Tysabri* rights and other non-core businesses to pare the debt load.

Today, the company continues to move in the direction of becoming a pure consumer self-care company and is pursuing plans of divesting its prescription pharmaceutical business. While we view the company as being in much better shape than it was in 2013 and the valuation is much more reasonable, we are concerned that the problem of a lack of internal growth remains.

We note that the following issues prompt us to initiate earnings quality coverage with a 3- (Minor Concern) rating.

- The company accrues for future expected chargebacks, government rebates, and retailer shelf stock allowances. The allowance has declined on an absolute and days of sales basis for the last three quarters. We would ordinarily be very concerned with such a decline, but we do note that the year-ago period was inflated by the introduction of new products which drives up the reserve as products are sold into the channel and have not yet generated payments to level the reserve out. The accrual level looks more normal when compared to 2017 level. Still, we note that the company continues to cite competitive pricing pressure which should have an elevating impact on both expected chargebacks and shelf stock allowances. We currently do not attach a high degree of concern to the issue, but this trend should be closely watched in future quarters.

- PRGO adds back amortization of acquired intangible assets to its non-GAAP results. We regularly criticize this practice and PRGO is in no way alone in doing it. However, we believe this is particularly distorting in the case of PRGO given the degree to which its model depends on the acquisition of new rights and ANDAs to release new products. In the 9/19 quarter, PRGO reported $1.04 in adjusted EPS, but this figure was boosted by an eye-popping $0.59 per share boost from adding back amortization. We also note that the company has been using a 20-year amortization period for recently acquired ANDAs which seems high, especially when compared to some competitors who are amortizing similar assets over 15 years or less.

- Further driving home the case of not ignoring the cost of acquisitions, the company reported goodwill and intangible impairments of $224 million, $48 million and $2.6 billion in the 2018, 2017 and 2016 fiscal year, respectively.

- PRGO's results are regularly impacted by the revaluation of its potential milestone payment from the sale of its *Tysabri* royalty stream. The company is still eligible to receive a $400 million payment contingent on the performance of *Tysabri* in 2020. The current carrying value of the related financial asset is $91 million. Should the company achieve its goal, it will report a gain of the difference between the carrying value and the milestone payment. If *Tysabri* falls short, it will result in a loss equal to the carrying value.

- The company has disclosed that it is exposed to several potentially negative outcomes related to claims by the IRS and Irish Revenue in the amounts of Euro $1.6 billion, $840 million and $200 million. Determining the likelihood of a negative settlement in any of these cases is beyond the scope of this report. However, investors should be

aware of these items given their magnitude. We also remind investors that PRGO identified a material weakness in internal control in its financial reporting in the area of income taxes in 2016 and 2017. The matter was considered remediated in 2018.

Accruals for Customer Programs Declining

Given the nature of the business, PRGO must make several key estimates when recording sales. We will discuss each below:

Chargebacks- The company sells its prescription pharmaceutical products directly to wholesalers, distributors, and warehousing pharmacy chains. It also sells indirectly to independent pharmacies, managed care organizations and group purchasing organizations. PRGO will also enter into agreements with some indirect customers to set up contracted prices for specific products. The indirect customer then picks a wholesaler from which to buy the drugs at the price it contracted with PRGO and PRGO refunds the difference between the wholesaler's list price and PRGO's contracted price with the indirect customer. This requires PRGO to make an estimate of claims that have been incurred before the end of the reporting period but have not yet been made, as well as an estimate of future claims that will be made when the wholesaler eventually sells the inventory. Prescription drug chargebacks represent the largest sales-related accruals.

Medicaid Rebates- PRGO must estimate the amount of sales for which it will have to provide rebates to the government for purchases made under federal and state programs. As with chargebacks, this involves estimating incurred but not yet reported claims as well as an estimate for future claims that will be filed when the inventory is sold.

Returns and Shelf Stock Allowances- PRGO allows customers to return products within a certain time period and after the expiration date. In addition, shelf stock allowances allow customers to receive credits to reflect changes in the selling price of a product that the customer still has in its inventory.

The company discloses chargebacks, rebates and allowances for administrative fees and other incentive programs in the "Accrued Customer Programs" line item on its balance sheet. Sales return allowances and shelf stock adjustments are recorded as a reduction of accounts receivable. The company discloses the Accrued Customer Programs amount on a

quarterly basis. This amount is shown in the following table on a days of sales basis for the last twelve quarters:

	9/28/2019	6/29/2019	3/30/2019	12/31/2018
Sales	$1,191	$1,149	$1,175	$1,195
Accrued Customer Programs	$359	$385	$380	$442
Accrued Customer Programs Days	27.4	30.5	28.8	34.4

	9/29/2018	6/30/2018	3/31/2018	12/31/2017
Sales	$1,133	$1,186	$1,217	$1,283
Accrued Customer Programs	$416	$452	$438	$420
Accrued Customer Programs Days	33.4	34.7	32.4	30.1

	9/30/2017	7/01/2017	4/01/2017	12/31/2016
Sales	$1,231	$1,238	$1,194	$1,331
Accrued Customer Programs	$369	$370	$348	$380
Accrued Customer Programs Days	27.3	27.2	26.5	26.0

There was a noticeable buildup in the accrual in 2018 which has reversed in the first three quarters of 2019. Absent unusual factors, one should view a general decline in the accrual level with concern given it could represent a company overstating current earnings by underestimating the eventual amount of current and past sales it will eventually have to refund to customers. However, in practice, various factors can impact the level of accruals such as the introduction of new products in the period which results in a jump in the estimate of ultimate accrual related payments at the time the products are sold into the channel but before enough time has passed for refunds to customers to be paid and balance out the reserve. With that in mind, we will dig a little deeper into the changes in the account.

First, let's go back to the 3/18 quarter which marked a spike in the accrual balance. The company stated the following in the liquidity section of its 10-Q for the quarter:

> *"…changes in accrued customer-related programs due primarily to new product launches, which resulted in higher customer related-accruals, pricing dynamics in the RX segment, and timing of rebate payments;"*

As we described above, introductions of new products can temporarily inflate the program accrual and we actually do see the accrual level begin to decline throughout the rest of the year. Therefore, we believe we can consider the 2018 program accrual days as an unusually elevated level and the 2019 year-over-year declines as a return to normal as they are more

in-line with the 2017 amounts. However, we do observe that the company's explanation for the decline in the accrual level in its last three 10-Qs is as follows:

> *"…$81.5 million change in accrued customer programs due primarily to pricing dynamics in our RX segment, as well as timing of rebate and chargeback payments"*

In recent quarters, the company has prominently mentioned an increasingly tough pricing environment for its pharmaceutical segment. This increase both rebates offered to customers as well a reduction in prices which would potentially drive up shelf space allowances. An accompanying decline in the accrual in such a situation would indicate the company was inadequately accruing for future cash outlays which would overstate earnings. Unfortunately, the company only discloses the reserve components in its annual filings. The disclosure from the 2018 10-K is reproduced below:

	RX Chargebacks	RX Medicaid Rebates	RX Returns and Shelf Allow.	RX Adm. & Oth. Rebates	Other Seg Rebates & Allow.	TOTAL
Balance at 12/31/2016	$217	$25	$77	$35	$131	$484
FX	$0	$0	$0	$0	$0	$0
Provisions	$1,564	$45	$44	$114	$281	$2,048
Credits/Payments	-$1,551	-$33	-$45	-$105	-$286	-$2,020
Balance at 12/31/2017	$230	$37	$76	$43	$126	$512
FX	$0	$0	$0	$0	-$4	-$4
Provisions	$1,754	$58	$17	$100	$270	$2,200
Credits/Payments	-$1,718	-$59	-$22	-$98	-$276	-$2,174
Balance at 12/31/2018	$266	$36	$71	$45	$117	$535

We see that in 2017 and 2018 the company did a good job of matching its provision expense to its cash payments. However, this does not help us get visibility into the first three quarters of 2019.

Overall, we view the decline in program accruals in the first three quarters of 2019 with a mild degree of concern. On one hand, it appears to be a return to normal from an elevated 2018. One the other hand, a tough pricing environment in the pharma segment should be exerting an upward force on the accrual level. This disclosure should be reviewed carefully when the 2019 10-K is released.

Amortization Expense and Impairments

We regularly criticize the practice of companies adding back the amortization of acquired intangibles to their non-GAAP earnings figures as it ignores that in many cases a company is choosing to effectively buy its R&D rather than spend to develop products in-house. It is no surprise that PRGO chooses to follow the industry norm of adding back the amortization of acquired intangibles, but we believe the resulting distortion for PRGO is particularly large.

First, amortization is a very large expense for PRGO. For the quarter ended 9/19, the company reported $1.04 in adjusted EPS. However, this includes an adjustment for $0.59 per share in amortization of acquired intangibles meaning EPS would be almost 60% lower if amortization is considered a "real" expense- and we believe there are compelling arguments to consider it a real expense for PRGO.

PRGO's reported R&D expense runs in the mid-3% range which is very low for a company in the medical products industry. This is because PRGO's medical products are largely over-the-counter (OTC) formulations of products that were previously protected by patents, or generic versions of prescription drugs which have recently gone off patent. In the case of prescription drugs, the company typically purchases the ANDA (abbreviated new drug application) from the pharmaceutical company which holds the now-expired patent of the original drug. PRGO then commercializes the generic version of the drug. For example, in July of 2019, the company paid $49 million for the ANDA for a generic gel which it launched on the market in the third quarter. As is typical, it capitalized the purchase price as a developed product technology intangible asset which it is amortizing over 20 years. Our issue is not with the choice to capitalize the asset- that is consistent with GAAP for the company to capitalize a research asset that has a definite commercial use at the time of purchase. Our concern is that adding back the amortization expense to adjusted profits ignores the expense associated with developing the asset in the first place. We also note that the company has used an estimated useful life of 20 years for most of its ANDA acquisitions which seems somewhat long. For reference, Lannet Company, another developer of generic and OTC products, amortizes its acquired intangibles over 10-15 years.

As an example in the OTC segment, PRGO announced in the third quarter that it will be acquiring the OTC rights to *PrevAcid*, the popular antacid remedy, from GlaxoSmithKline in the fourth quarter for $61.5-$65.0 million. It expects to allocate almost all of the purchase price to brand name intangible assets. The amortization period has yet to be announced.

Finally, another case to be made for including amortization in ongoing expenses is the regular occurrence of material goodwill and intangible amortization impairments. The following table shows impairment charges for the last three years and the nine months ended 9/19:

	9 mos-9/19	2018	2017	2016
Impairments of	-	$0	$0	$0
Goodwill	-	$137	$0	$1,093
Indefinite Lived Intangibles	-	$28	$0	$850
Definite-Lived Intangibles	-	$50	$20	$666
Assets Held for Sales	-	$2	$7	$16
IPR&D	-	$9	$13	$4
PPE	_	$0	$8	$4
	$43	$224	$48	$2,631

Acquisitions Are Key to Growth

Another structural reason that intangibles amortization should be considered operating in nature is the degree to which the company's business model depends on acquisitions for growth. PRGO acquires its innovation by buying it from other companies. New products are released which drive sales growth initially, but sales for the new products quickly peak and then begin a slow decline due to competitive price pressure. This is why PRGO's results seldom cite "growth from exiting products."

PRGO is considered to be in a rebuilding phase. It sold its royalty stream from the sales of *Tysabri* in early 2017 for over $2 billion and used the money to reduce its debt load at the behest of an activist shareholder. The debt was a result of a string of ill-fated acquisitions the company made to drive top-line growth. New management has a goal of returning PRGO to a pure "self-care" company with plans to sell its prescription pharma business in place for over a year. We view these developments as a positive, but investors should still be wary of acquisition-fueled growth in the future and remain skeptical of ignoring the cost of that growth- the amortization of acquired intangible assets.

Tysabri Royalty

On January 1, 2017, PRGO sold its rights to receive royalties on the multiple sclerosis drug *Tysabri* to Royalty Pharma for $2.2 billion in cash plus the possibility to receive two milestone payments ranging up to $250 million and $400 million based on the performance of *Tysabri* sales. In 2016, the company began accounting for the *Tysabri* rights as a financial asset with a beginning balance of $5.3 billion. The fair value of the asset was reduced by $2.6 billion over the course of the year to reflect increasing competition for the drug.

In 2018, *Tysabri* met the sales target for PRGO to receive the first milestone payment of $250 million. The remaining milestone payment is based on *Tysabri* payments to Royalty exceeding $351 million. In 2018, payments were $337.5 million. PRGO currently records the potential to receive the milestone payment as a financial asset on its balance sheet at a value of $91.7 million. Changes in the value are driven by conditions in the market for *Tysabri* and are reflected as a gain or loss on the financial asset in the income statement. If the royalty payments in 2020 fall short of the target, PRGO will have to write off the value of the financial asset (currently $91.7 million) but if the goal is met, PRGO will recognize a gain equal to the difference between the $400 million payment to be received and the carrying value of the asset (currently $308.3 million.) *Tysabri* is facing new competition and expectations for the drug have been downgraded over the years. We believe it is possible that *Tysabri* could miss its targets, causing PRGO to incur a relatively minor loss and miss the opportunity to receive $400 million in cash. Neither one should impact PRGO to a huge degree.

Tax Contingency

PRGO has disclosed that it received a notice of proposed adjustment (NOPA) from the IRS related to transfer pricing on in-process R&D related royalties between Elan and Athena. The IRS has proposed a payment of $843 million and PRGO is strongly contesting. The company will not have to make any payments until the matter is settled. We do not have an opinion about the likelihood of a negative settlement, but the potential liability is substantial and deserves careful investor consideration.

In addition, the company has received a Notice of Assessment (NoA) from Irish Revenue related to contingent consideration paid by Biogen to Elan in the 2013 sale of the rights to *Tysabri* which assesses a tax liability of Euro 1.6 billion. The company has filed a judicial

review to block the NoA and prevent Irish Revenue from continuing to pursue the matter. As with the above issue, we have no insight into the likelihood of a negative outcome. However, if the company loses its case in the judicial review and Irish Revenue successfully pursues its case, it would be a very material negative event.

PRGO also received a NOPA for fiscal years ended 6/14 and 6/15 related to the deductibility of interest on a loan made to a subsidiary related to the 2013 Elan deal. The company also expects the IRS to pursue similar adjustments for 2015-2019. The company estimates that the potential increase in taxes, penalties, and interest could run as high as $200 million.

We would note that the company identified a material weakness in its internal reporting in 2016 and 2017 related to the are of income taxes but the matter was considered remediated in 2018.

In addition, the company is the subject of price-fixing litigation along with several other pharmaceutical companies and also faces multiple security litigation matters.

Explanation of EQ Rating Scale

Rating	Description
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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