BEHIND THE NUMBERS

EARNINGS QUALITY & DIVIDEND SUSTAINABILITY RESEARCH

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Contents

Texas Instruments (TXN) 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 an explanation of the EQ Review Rating scale, please refer to the end of this report

We initiate earnings quality coverage with a 5+ (Strong) rating

Texas Instruments (TXN) expects to suffer from a slower economy as a result of COVID. It plans to continue investing the business during this time even if it crimps margins a bit and boosts DSIs on inventory. We believe the liquidity is more than ample to accomplish this and net debt at 0.27x trailing EBITDA is not an issue.

We like the approach TXN is taking – instead of a series of one-time cuts in working capital, R&D or capital spending to boost free cash flow and buy back shares – it continues to invest in those areas with the idea of growing organically, taking market share, which in turn will also boost free cash flow and let it reward shareholders. We saw some minor areas of one-time EPS gains last year such as recovering the reserve account for a completed project. However, the accounting approach on revenue recognition, not using adjusted EPS figures, and growing more internally rather than via acquisition gives TXN high-quality earnings in our view.

- **High inventory levels as shown via DSIs at 147 are part of the business model. TXN has operated with high inventory for many years without experiencing write-offs**, which confirms that the inventory has a long lifespan. Also, the goal is to avoid out-of-stock situations that hurt sales.

- **Using a consignment method for inventory at distributors allows TXN to hold stock for immediate use near end-market customers. By keeping the inventory on its books, distributors do not push back against higher inventory levels and TXN cannot stuff the channel by booking revenue when inventory is shipped to the distributors.**

- **Another result of using a conservative revenue recognition model is TXN feels order slowdowns more quickly in its revenue – but it also does not have huge swings in revenue growth from the channel being drained and restocked either.**

- **Inventory levels are expected to rise higher in 2Q as sales will likely be lower and TXN wants to boost levels on hand further to ensure adequate supply as the recession ends.** Also, production costs decline by spreading fixed costs over more units – but in the short term, it TXN may see another quarter or two where sales growth falls more than cost of goods declines. **This is one area of investing in the business TXN wants to continue.**

- **R&D and Capital spending are elevated as TXN adds more 300mm wafer facilities that it expects to reduce costs by about 20% per unit. This is also where TXN is willing to endure pressure on margins and cash flow in the short term to produce longer-term results that are higher.**

- **TXN's goal is to return 100% of free cash flow to shareholders as rising dividends and share repurchases. It has a solid record in this area. We can see some potential pressure on the level of repurchases due to COVID and the elevated investment levels** – but the company has very low net debt and after 1Q, has a sizeable amount of EPS growth baked in from lower share count.

- **Acquisition accounting is very strong at TXN. It does not make many purchases, so it does not have a sizeable intangible asset total. It also amortizes intangibles over periods more closely aligned with internally built assets. TXN also does not report adjusted EPS to add back all costs related to acquisitions such as amortization, integration, restructuring, etc.**

- **If TXN had to amortize goodwill over 40-years (if it had built the assets internally) – it would only penalize EPS by 11-cents (2%) of the $5.24 reported last year. That's a far cry from some other chip makers where over 30% of their EPS is the result of purchasing assets as goodwill and not having to amortize them like internally built businesses.**

- **Short term items that helped EPS in 2019 by 15-cents.** There a bad debt charge in 2018 that hurt by 2-cents, which reversed in 2019 and added the 2-cents back. TXN has a large investment portfolio that normally produces gains. In 2019, it rose from $11 million to $29 million and boosted EPS by 3-cents. Completing a restructuring activity allowed it to reverse the remaining reserve in 2019 and add another 3-cents. A minor asset sale produced a gain of 3-cents more. And raising the expected rate of return on non-US pensions from 2.58% to 3.68%, added 4-cents. **As TXN normally beats quarterly forecasts by 5-15 cents, we don't consider these areas very egregious. Also, we give TXN high marks for not using non-GAAP EPS even with items like this work against it.**

High Inventory Levels Are Part of the Business Model. Rising Inventory Is a Deliberate Decision by TXN

Normally rising inventory is something we would jump on as a problem. It often leads to lower margins via price cuts or write-offs. Texas Instruments has seen a noticeable increase in the last two years:

Inventory	1Q20	4Q19	3Q19	2Q19
DSI	147	147	142	145

Inventory	1Q19	4Q18	3Q18	2Q18
DSI	144	156	134	136

Inventory	1Q18	4Q17	3Q17	2Q17
DSI	136	137	120	134

The first point to notice is the inventory levels have been high for a long time. That is the nature of the business as it sells about 65% of its products through distributors on consignment. Distributors have locations throughout the world to serve their customers and all of those locations have to be stocked with inventory. Also, given that there are competitor products that can substitute for some TXN units – being out of stock of TXN inventories at a location can mean the sale is lost. TXN's goal is to avoid out of stock situations and always maintains higher levels of inventory by design.

Since 2018, TXN has also sought to boost inventories at consignment distributors. It wanted to build slower turning inventories too, this could set it up for incremental sales via fewer out of stock episodes and higher cash flow. This is a way of not thinking quarter to quarter and instead wanting to make the incremental sales at any time. Because the inventory is on consignment, TXN still owns it. The distributor is not tying up its cash by holding more TXN inventory. This investment in inventory had been a conscious decision by the company. **It views the obsolescence risk to be very low on these products and the higher inventories will allow TXN to pick up sales when competitors have out of stock situations. There is not a history of big inventory write-offs due to inventory losing value. That explains the 130 days of inventory moving to 145 days.**

The consignment process used by TXN is conservative for revenue recognition. TXN is not booking revenue when product is shipped to the distributors. Only when the distributors pull the inventory out of consignment does it become revenue for TXN. That process allows nearly all the inventory in the channel to count as still being on TXN's books. Thus, TXN cannot boost revenues in a short period by loading distributors up with more inventory and essentially stuffing the channel. **This process can actually punish short term results at TXN more than other companies because TXN's revenue is more closely aligned with the end-user.** The distributor often doesn't remove it from consignment until it has an order from a car or phone builder. Since TXN doesn't book revenue until that point, **its top line is closely**

aligned with end-market demand, while manufacturing costs for Cost of Goods Sold are more removed from that quick impact. Because TXN is focused on the best way to achieve sales is not to be out of stock and the best way to lower production costs is to run at a higher utilization – both goals tend to focus production volumes on long term demand not short-term swings in sales. Thus, when sales drop, it backs up on TXN more quickly as COGS don't drop. This can be seen in 4Q18 and 1Q20:

	4Q18	4Q17	change
Revenue	$3,717	$3,750	-$33
Cost of Rev.	$1,310	$1,310	$0
Gross Profit	$2,407	$2,440	-$33
Margin	64.8%	65.1%	

4Q18 seems like forever ago, but you may recall that was when interest spreads widened considerably and the press was calling it the sixth or seventh start of the next recession. TXN noted that several consumer markets in China weakened and caused manufacturers and distributors to get more conservative on inventory levels. As TXN continued to produce product it saw flat COGS as revenue declined. Also, it showed a big jump in DSIs.

	1Q20	1Q19	change
Revenue	$3,329	$3,594	-$265
Cost of Rev.	$1,241	$1,333	-$92
Gross Profit	$2,088	$2,261	-$173
Margin	62.7%	62.9%	

The 1Q of 2020 saw the start of COVID first in Asia and then other parts of the world. Demand slowed, but TXN continued to operate at higher levels than demand to maintain shorter lead times on orders, reduce out of stocks, replenish some inventories, and spread fixed costs over more units. While inventories didn't have time to jump on DSIs in the 1Q, guidance is that 2Q DSIs will see a noticeable jump.

Our view is that that inventory levels at TXN are less of an issue than for many other companies:

- They are purposely investing in higher levels to help boost sales and lower costs over time and take advantage of other companies being out of stock.

- TXN has operated with DSIs well over 130-140 days for years without taking repeated charges to inventories.
- Much of the inventory is not seasonal or becomes obsolete very quickly which makes the cost of holding it longer only the opportunity cost related to the cash it ties up.
- The revenue recognition policy and distributor model are more conservative than many other companies we have seen with distributors.
- Currently, TXN is looking at 2008-2009 as a period when demand fell sharply but also rebounded sharply – only to be met with shortages of inventory. It is focused on avoiding that situation by keeping inventories above normal levels and letting them adjust down as demand recovers.
- TXN's continued expansion into 300mm production helps lower the cost of production per unit, which may enable it to carry less dollar inventory but still hold high unit levels.

The growth in inventories has consumed cash. Some of that may be released later in 2020 and beyond as the stocking levels reach goals and production cost per unit declines. Also, the growth in DSIs that TXN is forecasting for 2Q20 may be more of a function of COVID causing falling sales and operating at 1Q20 levels of production which creates a lower COGS to compute DSIs. It will likely consume cash in 2Q20, but there is some potential cash flow going forward:

	1Q20	1Q19	2019	2018	2017	2016
Inv. Change on Cash Flow	-$2	$86	$216	-$282	-$167	-$99
Cash from Operations	$851	$1,107	$6,649	$7,189	$5,363	$4,614

TXN Is Spending Heavily on R&D and Capital Investments

More on the view of thinking beyond next quarter, TXN is focused on developing new products over the long term and does not waiver much on reinvesting in the business even if sales slow for a bit. Management was clear on maintaining investment plans for the business on the 1Q call:

> *"And clearly if you think about capital allocation, the things that I stepped through,* ***keeping on the right R&D investments, keeping on the right capital expenditures, making the right capability investments on things like ti.com, that's where you get***

__just very excited about. We will be getting stronger during this period and those strengths will help us__ even as the secular trends of more semiconductors in your life are growing."

"__On capital spending, our plans are generally unchanged because the bulk of capital spending is driven by roadmap capacity needs in the 2022 to 2025 time frame. We will continue with previously announced construction plans that are underway for the next generation 300-millimeter analog wafer fab__ in Richardson, Texas."

Even with COVID issues, TXN is committed to maintaining a high level of spending in this area along with its inventory. This may squeeze earnings and free cash flow. That is a big deal because TXN is focused on returning growing the business and returning 100% of free cash flow as dividends and share repurchases. There are several of these investment items squeezing earnings and free cash flow as sales growth slows:

	1Q20	1Q19	2019	2018	2017	2016
Revenues	$3,329	$3,594	$14,383	$15,784	$14,961	$13,370
Gross Profit	$2,088	$2,261	$9,164	$10,277	$9,614	$8,257
Gross Margin	**62.7%**	**62.9%**	**63.7%**	**65.1%**	**64.3%**	**61.8%**
SG&A	$5,418	$5,856	$1,645	$1,684	$1,694	$1,742
R&D	$377	$389	$1,544	$1,559	$1,508	$1,356
R&D % Sales	**11.3%**	**10.8%**	**10.7%**	**9.9%**	**10.1%**	**10.1%**

So gross profit is under pressure now as revenues are falling faster than cost of goods. R&D has increased and held at higher levels and that is consuming a larger percentage of sales. We want to add, we agree with this type of spending.

	1Q20	1Q19	2019	2018	2017	2016
Net Income	$3,329	$3,594	$5,017	$5,580	$3,682	$3,595
Depreciation/Amt	$250	$258	$1,050	$954	$904	$955
Inventory	**-$2**	**$86**	**$216**	**-$282**	**-$167**	**-$99**
Cash from Ops	$851	$1,107	$6,649	$7,189	$5,363	$4,614
Capital Spending	**$161**	**$251**	**$847**	**$1,131**	**$695**	**$531**
Free Cash Flow	$690	$856	$5,802	$6,058	$4,668	$4,083
Dividends	$841	$724	$3,008	$2,555	$2,104	$1,646
Share Repurchases	$1,641	$1,152	$2,960	$5,100	$2,556	$2,132
Dividends % FCF	121.9%	84.6%	51.8%	42.2%	45.1%	40.3%
Repos % FCF	237.8%	134.6%	51.0%	84.2%	54.8%	52.2%
Borrowing	$749	$743	$741	$1,000	$474	-$501

When looking at this table we are focused on:

- The elevated capital spending is cutting the free cash flow
- Net income was squeezed by cost of goods holding up as sales declined as part of the inventory build and elevated R&D
- Cash flow is still strong at this point and is covering the dividend and a solid growth rate for the dividend. We think that is sustainable, but perhaps at a slower growth as even with share repurchases, the dividend as a percentage of free cash flow is rising.
- TXN is borrowing money at this point. It is far from a problem stage. Debt to EBITDA on a trailing 4 quarters is only 1.0x. Plus, Debt of $6.55 billion is cut to only $1.8 billion net of cash or 0.27x EBITDA.
- It also appears share repurchases will be the swing figure and is more likely to be under $3 billion per year than the $5 billion seen in 2018.

Our conclusion is TXN has a record of making R&D and capital spending translate into long-term future growth. One of the key points to some of this investment spending is it allows TXN to use larger wafers to make chips – which is expected to cut production costs about 20% for those chips. That should boost gross margin, net income, and free cash flow going forward and further support TXN's goals.

The only concern we have at this point does weaker COVID revenues and this period of higher spending slow the repurchase levels. Repurchases have been a big part of EPS growth and dividend per share growth.

	2019	2018	2017	2016
Weighted Avg Shares	**952**	**990**	**1012**	**1021**
Income to shareholders	$4,986	$5,538	$3,649	$3,551
Reported EPS	$5.24	$5.59	$3.61	$3.48
EPS Growth	-6.3%	54.8%	3.7%	23.4%
EPS w/o Repurchases	$5.04	$5.47	$3.57	$3.40
Adj. EPS growth	-9.9%	51.6%	2.7%	20.7%
EPS Growth from Repo	**3.6%**	**3.3%**	**1.0%**	**2.7%**
Dividends/share	$3.21	$2.63	$2.12	$1.64
Div/share growth	22.1%	24.1%	29.3%	17.1%
Total Dividend Paid	$3,008	$2,555	$2,104	$1,646
Total Dividend Growth	17.7%	21.4%	27.8%	14.0%

Already the total share count is down to 918 million shares in April 2020 – TXN spent about half a year's annual repurchase investment in 1Q20. So, there is more EPS growth baked in going forward from repurchases. It has been adding over 3% to EPS growth and that much is already in place. The goal of TXN is to pay a stable and rising dividend. The current dividend per share is $3.60 and is due for an increase in 4Q.

There is enough liquidity here to support the dividend. The dividend is currently about $3.3 billion (918 million shares at $3.60) and TXN's goal is to return 100% of free cash flow to shareholders. We do not see an issue there. The bigger risk would seem to be on further share repurchases during the COVID situation as the company continues to invest heavily in future growth too. Management mentioned on the call that with net debt so low, it could also consider borrowing more cash to repurchase more shares.

If investors like the long-term growth story, we do not see anything overly negative in the reporting or accounting for areas where the free cash flow is under pressure. As noted in the prior section, the revenue recognition is actually very conservative and that pressures gross profit and net income in times like these – but TXN does not have inflated growth figures to unwind from an area like channel stuffing.

A longer-term case can be made that if the new 300mm wafer projects are successful in lowering unit costs by about 20% - TXN could have higher unit inventories and still release cash from the inventory investment. Also, future sales growth from avoiding out of stock situations and perhaps capitalizing on competitors being out of stock – could drive income higher and thus free cash flow too.

Acquisitions, Amortizations, and Adjusted EPS – High Marks for TXN

Long time readers know that we think acquisitions can inflate earnings. Our rationale is when the business is grown internally – the labor and supplies are largely expensed as incurred. Other items such as computers and other tech-equipment may be purchased and expensed as depreciation over one-five years, while other equipment may have a life of four-ten years. Software is an intangible asset that is normally amortized over a life of two-five years. The view is a company growing organically is expensing all the costs over a timeframe from immediately to a short period.

That doesn't make acquisitions necessarily bad. They can enable growth to happen even faster in some cases and it may bring new technology that helps the overall company become more profitable with higher sales. The question is many companies buying similar businesses could conceivably build rather than buy. The problem with earnings quality is in many cases acquisition costs are either not expensed, expensed over a long period, or considered non-recurring and added back to adjusted results.

When we look at TXN, it makes some acquisitions, but they tend to be smaller. The last one was National Semiconductor it bought in 2011 for $6.5 billion when TXN was worth about $33 billion. TXN does amortize some of the acquired assets over longer periods of time – but not a materially longer time than internally developed assets. It depreciates machinery and equipment over 2-10 years and has been amortizing acquired intangibles over effectively 7 years of late. It also does not adjust EPS to exclude this amortization. Compared to the EPS and non-GAAP EPS of other competitors, we think TXN's quality of earnings is much higher in this area:

	TXN	ADI	AVGO	MCHP	QCOM
Amortization Life years	7-10	10	5-10	15	8
Goodwill - $mm's	$4,362.0	$12,256.0	$36,714.0	$6,665.0	$6,282.0
Other Acq. Intangibles	$340.0	$4,217.0	$17,554.0	$5,702.0	$2,172.0
Amortization last year	$288.0	$570.6	$3,314.0	$1,046.7	$727.0
GAAP EPS last year	$5.24	$3.65	$6.43	$2.23	$3.59
Non-GAAP EPS last year	$5.24	$5.15	$21.29	$5.62	$3.54
EPS impact of Goodwill	$0.11	$0.82	$2.19	$0.65	$0.13
EPS impact of Intangibles	$0.24	$1.21	$6.25	$3.23	$0.47

This is data that is all pre-COVID and is from each company's last 10-K. We assumed a 21% tax rate on amortized intangibles. We further assumed that the goodwill was expensed over 40-years without a tax impact. What we saw as positive for TXN was:

- GAAP and non-GAAP EPS were equal – TXN is not trying to claim that amortization is a one-time event and should be ignored as a non-cash item after paying cash for the deal. That is rare in the tech world. It's competitors routinely add back the all acquisition-related expenses to non-GAAP EPS.
- As acquisitions are not a primary source of growth – the amortization of intangibles is only 4.6% of EPS (24-cents).
- TXN has one of the fastest amortization periods of the group as well. Had the amortization time been cut from 7 years to 6 – the EPS impact would only change from 24-cents to 28-cents.
- Assuming a tech company has no asset with an indefinite life – we assumed a 40-year amortization of goodwill. For TXN that's only an 11-cent hit to EPS or 2.1%.
- Except for Qualcomm at 4.6% of EPS – the other competitors would lose 30%-33% of their EPS if they had to expense Goodwill or build some of those assets internally.
- That to us illustrates how EPS can be inflated significantly by growth through acquisitions instead of internal building.

Other Short-Term EPS Issues Look Tame at TXN

When we look for problems in this area – we look for companies that are just hitting guidance or beating by one-cent. That is already not an issue for TXN as it routinely beats forecasts by 5-15 cents. There are some areas where prior reserves are being reversed or allowances changed. But, to produce 1-cent in EPS for Texas Instruments that essentially needs to be an $11 million event. On FX, TXN notes that a 10% +/- change in non-US currencies to the dollar results in a gain or loss of under $1 million. Also, keep in mind, EPS was $5.24 last year and $5.59 in 2018. There are some issues that penalized 2018 results that helped 2019 results such as:

- Bad debt expense moved from a -$9 million credit in 2017 to an $11 million charge in 2018. That $20 million change **hurt 2018 EPS by 2-cents**.
- Bad debt expense became a -$11 million credit again in 2019 resulting in a $22 million swing from 2018 which **helped 2019 EPS by 2-cents.**
- In 1Q20 – bad debt appears flat.

- Realized gains on investments have been $6 million, $11 million, and $29 million the last three years. The move from $11 to $29 million **helped 2019 helped EPS by 3-cents.**
- Restructuring charges were $11 million, $6 million, and then a reversal of the reserve of -$15 million in the last three years. The $21 million swing **helped 2019 EPS by 3-cents.**
- TXN also had minor asset sales that produced gains of $3 million in 2018 and $21 million in 2019. That $18 million swing **added another 3-cents to 2019 EPS.**
- Pension costs – we want to first emphasize most of TXN's pensions are fully funded. Also, the normal ongoing pension expense is fairly flat. There are some changes with recognizing actual losses and settlements that have helped EPS too:

		US Plans			Non-US Plans	
	2019	2018	2017	2019	2018	2017
Service Cost	$18	$19	$22	$31	$36	$37
Interest Cost	$38	$35	$42	$43	$45	$44
Exp. Return	-$41	-$42	-$41	-$86	-$67	-$62
Basic Pension Exp.	$15	$12	$23	-$12	$14	$19
Amrt Prior Serv. Cost	$0	$0	$0	$1	-$1	-$2
Recog. Actuarial Loss	$9	$17	$14	$29	$20	$28
Settlement Loses	$10	$23	$36	$3	$3	$2
Total Pension Cost	$34	$52	$73	$21	$36	$47

- The combined total has dropped from $120 million to $88 million to $55 million. The biggest change from assumptions was the non-US plan raised it assumption for expected rate of return from 2.58% to 3.68%. That's not an outrageous forecast, but it helped reduced pension costs in 2019 by $25 million. **That added about four cents to 2019 EPS.**

When we add that up, we see 2019 EPS may have benefited by 15 cents against the reported $5.24. We should note that as we showed above, amortization of acquired intangibles was about 24-cents of drag on EPS in 2019. That may be essentially gone after 2020.

Perkin Elmer (PKI) 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

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We initiate earnings quality coverage with a 3- (Minor Concern) rating

Our biggest concern with PKI is the trend of rising accounts receivable which management which the company has admitted is at least partly due to extending payment terms. Note that this was a pre-COVID development and not related to helping struggling customers. Acquisitions are also a key contributor to growth and consume large amounts of cash but the company adds back its growing amortization expense to non-GAAP results. Acquisitions will likely play a key role in the future as organic revenue growth fell from 8% in 2018 to 5% in 2019.

- PKI's accounts receivable days posted year-over-year increases ranging from 5-9 days in each of the last five quarters. The company admitted in its 9/19 10-Q that this was partly due to "increased terms" which indicates the company could be artificially boosting revenue by extending more generous payment terms to customers. We estimate a 5-day increase in DSOs represents an approximate 5 cps in earnings boost for a quarter. This material tailwind could disappear or even reverse in upcoming quarters.

- The company has made several acquisitions over the last three years. On the positive side, PKI is not dependent on acquisitions to drive the majority of its growth. For fiscal 2019, reported revenue growth was 4% which included only a 1% impact from acquisitions and divestitures and a 2% decrease from currency implying a 5% organic growth rate. Likewise, in fiscal 2018, reported sales rose by 16% with 8% still intact after adjusting out acquisitions and currency. However, free cash flow has not covered spending on dividend, buyback, and acquisitions for any of the last three fiscal years.

- Given the ongoing nature of the company's acquisitions and their impact on cash flows, we take issue with the company's practice of adding back the amortization of acquired intangibles to its non-GAAP results. Acquisitions have led to a buildup in goodwill and intangibles which now amount to 67% of PKI's total assets. Amortization of intangibles amounted to 27.6% of non-GAAP operating income in fiscal 2019, up from 25.8% in 2018 and 17.5% in 2017. Pretax ROIC on adjusted operating income was a little over 13% in fiscal 2019, but this falls to 9.5% if amortization is considered. These figures are similar for industry peer TMO but nonetheless indicate the degree to which returns are overstated by the exclusion of a key expense.

- The company does not give a range of useful lives for its intangible assets in its discussion of accounting policies. However, based on the mix of intangible assets and weighted-average useful lives disclosed for specific acquisitions, we estimate the company is using approximately 10-11 years to amortize its customer lists and acquired medical technology assets. While we often criticize amortization periods of longer than 3-5 years for information technology assets, 10 years is not unreasonable for medical-related technology assets. For reference, industry peer TMO has used 13 years for medical technology assets and 14 for customer lists in recent deals.

Accounts Receivable Are Rising

PKI has seen a steady rise in its accounts receivable days of sales for the last five quarters as shown in the following table:

	4/05/2020	12/29/2019	9/29/2019	6/30/2019
Sales	$652	$805	$707	$723
Trade Receivables	$626	$725	$646	$654
Trade Receivables Days of Sales	94.1	81.9	83.2	82.4

	3/31/2019	12/30/2018	9/30/2018	7/01/2018
Sales	$649	$756	$674	$703
Trade Receivables	$624	$633	$551	$564
Trade Receivables Days of Sales	87.5	76.1	74.4	73.0

	4/01/2018	12/31/2017	10/01/2017	7/02/2017
Sales	$644	$642	$554	$547
Trade Receivables	$576	$552	$441	$440
Trade Receivables Days of Sales	81.4	78.3	72.3	73.3

We can see that the YOY increases started in the 3/19 quarter. Late in the 12/17 quarter, the company acquired EUROIMMUN for $1.4 billion. While the company does not disclose the amount of the purchase price allocated to receivables, it does indicate that $121 million was added to current assets with much of that likely being comprised of receivables. An addition to receivables with only a few days of sales recorded in the quarter would have lifted the DSO calculation in the 12/17 quarter. Consider the company's explanation for the increase in receivables from the last several liquidity sections of its SEC filings:

From the 3/19 10-Q:

> *"The decrease in accounts receivable was a result of accounts receivable collections during the first three months of fiscal year 2019"*

-Keep in mind that this is referencing the sequential decrease in receivables from the 12/18 to the 3/19 quarter. PKI typically sees a sequential decline in receivables in the first quarter. Still, receivables were noticeably higher relative to revenue compared to the year-ago quarter.

From the 6/19 10-Q:

> *"The increase in accounts receivable of was a result of higher sales volume during the first six months of fiscal year 2019"*

This explanation seems a little lacking considering sales growth was less than 3% in the quarter. The 6/19 quarter was the second full quarter of EUROIMMUN results. Our DSO figure is calculated using annualized quarterly sales so neither the 3/19 nor 6/19 figures were distorted by sales not reflecting a full period of revenue from acquired operations. The year-over-year comparisons at that point would be impacted only to the extent that EUROIMMUN's operations inherently carried a higher level of receivables. If that were the case, we would have expected the company to mention that as a factor for the 9-day year-over-year increase in DSO in the 6/19 quarter.

From the 9/19 10-Q:

> "The increase in accounts receivable was a result of higher sales volume **and increased terms during the first nine months of fiscal year 2019."**

Here is where it gets interesting. DSOs in the 9/19 quarter increased by 6 days versus the 9/18 quarter (down from the 9-day YOY increase in the 6/19 quarter) **but the company admits for the first time that the increase in receivables for the first nine months was partly a result of increased payment terms most likely extended to customers to spur revenue growth. The company gave the same explanation in the 10-K for the receivables increase for the full year.**

From the 3/20 10-Q:

> *"The decrease in accounts receivable was a result of strong accounts receivable collection during the first three months of fiscal year 2020."*

Accounts receivable did decline sequentially in the 3/20 quarter, but this was partly due to a sequential decline in revenue from the COVID-related slowdown. Still, receivables ended the quarter at a historically high level relative to sales.

The concern we have is the degree to which revenue growth over the last several quarters has been artificially boosted by the extension of more generous credit terms. To put this in perspective, 5 days of receivables represents about $40 million in revenue. Using a 20% operating margin and a 15% marginal tax rate, that implies a potential 5 cps boost to EPS for a 5-day jump in quarterly DSO. Extending terms has likely been a very material tailwind to earnings growth in 2019 which could reverse in upcoming quarters.

Cash Flow After Acquisitions Is Regularly Negative

PKI has made regular acquisitions over the last few years including the following:

Fiscal Year 2019

Five acquisitions for a total of $433.1 million in cash. These included Cisbio Bioassays SAS, a French company acquired for $219.9 million and Shandong Meizheng Bio-Tech, Ltd, and Chinese company acquired for $166.5 million

Fiscal Year 2018

Four businesses for a total of $105.8 million with no details given by the company

Fiscal Year 2017

PKI purchased EUROIMMUN for $1.4 billion plus two other acquisitions including Tulip Diagnostics for $127.3 million

On the positive side, PKI does not depend on acquisitions to drive the majority of its growth. For fiscal 2019, reported revenue growth was 4% which included only a 1% impact from acquisitions and divestitures and a 2% decrease from currency implying a 5% organic growth rate without acquisitions or currency. Likewise, in fiscal 2018, reported sales rose by 16% with 8% still intact after adjusting out acquisitions and currency.

On the downside, PKI's acquisition string has more than consumed free cash flow after the dividend and buyback for the last three fiscal years, as seen in the table below:

	12/29/2019	12/30/2018	12/31/2017	01/01/2017
T12 Operating Cash Flow	$363.469	$311.038	$288.453	$350.615
T12 Capex	$76.331	$93.253	$39.089	$31.702
T12 Free Cash Flow	$287.138	$217.785	$249.364	$318.913
T12 Dividends	$31.059	$31.009	$30.793	$30.799
Dividend % of Free Cash	10.8%	14.2%	12.3%	9.7%
T12 Net Stock Repurchases	$6.313	$57.445	$3.834	$151.801
Cash Flow after Buyback	$249.766	$129.331	$214.737	$136.313
T12 Net cash for acquisitions	$405.405	$97.686	$1,527.183	$71.924
Cash After Buyback and Acquisitions	-$155.639	$31.645	-$1,312.446	$64.389

It has also led to a buildup in goodwill and intangibles which now amount to 67% of PKI's total assets. This is not dissimilar to many other companies in the medical diagnostics industry such as TMO. Also like most of its peers, PKI adjusts the amortization of acquired intangibles out of its non-GAAP earnings numbers. Amortization of intangibles amounted to 27.6% of non-GAAP operating income in fiscal 2019, up from 25.8% in 2018 and 17.5% in 2017. While omitting amortization from intangibles from non-GAAP results is typical, we believe it is nonetheless a distortion of the true earnings power of the company, especially considering the company has spent more than its excess cash flow on acquiring these assets over the years. If it had not done so, it would have had to develop these technologies and relationships in-house and incurred expenses that analysts would not have found acceptable to ignore. To put this in perspective, PKI's return on capital using non-GAAP operating income was a little over 13% in fiscal 2019, but this figure drops to 9.5% after subtracting amortization expense from the numerator.

While the company ignores amortization expense, we think it is still informative to look at the estimated useful lives of acquired intangibles it uses to calculate amortization expense. PKI does not give a range of useful lives for its intangible assets in its description of its accounting policies. However, it does give the weighted average useful lives used to amortize the intangibles assets picked up by acquisitions each year. For example, the 2019 acquisitions resulted in approximately $37 million of intangible assets being booked with 77% being booked as "core technology", 4% as "trade names" and 19% as customer relationships. The weighted average amortization period for all the 2019 intangibles was 11.0 years. The mix of intangibles acquired in 2018 was similar in mix and resulted in an 11.2-year average amortization period. In 2017, the EUROIMMUN acquisition resulted in 78% of acquired intangibles being booked as “customer relationships” with 18% booked as “core technology” and the balance as “trade names.” However, the weighted average useful life for the 2017 acquired intangibles remained similar at 11.8 years, implying similar amortization periods for technology and trade names in the 11-year range. By comparison, TMO assigned useful lives of 13 years for product technology and 14 years for customer relationships in connection with its most recent 2018 acquisitions. As such, PKI’s amortization periods do not look out of line. It is important to remember that PKI’s technology is medical related and should, therefore, have a longer useful life than IT-related technology for which a 3-5 year time frame is more appropriate.

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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