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The Hershey Company (HSY) EQ Review

Current EQ Rating*	Previous EQ Rating
4+	NA

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

We initiate coverage of The Hershey Company (HSY) with a 4+ (Acceptable) rating.

- Accounts receivable days of sales (DSO) rose by 3 days over the year-ago period. We see this as largely due to an unusually low receivables balance in last year's comparable quarter more than an elevated level in the current quarter. While the company stated in the 2Q18 conference call that the increase was due to the 1/31/18 acquisition of Amplify, we do not see that the acquisition added materially to the DSO increase. This is more an item of curiosity than concern.

- Despite the Amplify acquisition, inventory levels have been declining both on a days of cost of sales basis and an absolute basis with the decline more focused in raw materials. HSY utilizes the LIFO (last-in, first-out) method of accounting for 60% of its inventories. Ordinarily, a decline in inventory for a company utilizing LIFO is a red flag that it is artificially benefitting from a "LIFO liquidation." However, the conditions are not present for this to happen. Instead, we believe the company's cash inventory spend is starting to benefit as unprofitable commodity hedges have expired, allowing HSY to enjoy the currently lower prices of some of its key raw materials. The company's adjusted profit numbers will also likely start to benefit as the cumulative losses being recognized in adjusted results are now running out.

DSO Jumped By 3 Days in the 6/18 Quarter

HSY's accounts receivable days (DSO) in the 6/18 quarter rose by 3 days over the year-ago period, as seen in the following table:

	7/1/2018	4/1/2018	12/31/2017	10/01/2017
Sales	$1,752	$1,972	$1,940	$2,033
Accounts Receivable	$502	$614	$588	$743
Sales YOY growth	5.3%	4.9%	-1.6%	1.5%
Accounts Receivable YOY growth	20.2%	3.1%	1.2%	-2.2%
Accounts Receivable DSOs	26.1	28.4	27.7	33.3

	7/2/2017	4/2/2017	12/31/2016	10/02/2016
Sales	$1,663	$1,880	$1,970	$2,003
Accounts Receivable	$417	$596	$581	$760
Sales YOY growth	1.5%	2.8%	3.2%	2.2%
Accounts Receivable YOY growth	-13.7%	9.5%	-3.0%	-0.2%
Accounts Receivable DSOs	22.9	28.9	26.9	34.6

The initial issue that jumps out at us when looking at the table is that receivables in the 7/02/17 quarter were unusually low. This is most likely due to the timing of sales in the first half of 2017. Consider the following from the company's 10-Q filing for the 4/2/2017 quarter:

> *"…$69.4 million decrease in cash generated by accounts receivable, primarily attributed to the timing of sales during the quarter.* ***U.S. sales were measurably higher in the last 15 days of the first quarter of 2017 versus the first quarter of 2016 due to timing of shipments, which drove a higher investment in accounts receivable as of the 2017 quarter-end."***

This thought was refined in 2017's first quarter conference call:

> *"At the end of the first quarter, net trading capital increased versus last year -- last year's first quarter by $14 million.* ***Accounts receivable were higher by $52 million due to higher Easter sales."***

Easter, a huge selling season for HSY, fell on April 16th in 2017 compared to March 27th in 2016 which was likely a contributing factor to the later timing of sales in 1Q17. Sales growth was weaker in 2Q17 which could have also been partially impacted by the timing of Easter. Regardless, it is obvious that receivables and DSOs were unusually low in 2Q17 which makes the year-over-year increase in DSOs in 2Q18 much less concerning.

We are therefore somewhat puzzled by management's explanation of the receivables increase in the 2Q18 conference call:

> *"So, the biggest reason for the changes in receivables was clearly the Amplify acquisition as we acquired their receivables. So, that drove that increase."*

The Amplify acquisition was finalized on 1/31/18 and we know that the fair value assigned to Amplify's receivables was $41.2 million. We also know that the company attributed 3.4% of the sales growth in 1Q18 to the two months of Amplify's sales during the period. This would have amounted to about $64 million. If we simply scale that up to 3 months, we get a rough estimate of Amplify's first-quarter sales of about $96 million. Using these figures, we estimate that Amplify was carrying about 39 days of receivables at the time of the acquisition. While certainly higher than HSY's DSOs in the high 20s, this is not enough of a difference to meaningfully impact our calculation for 2Q18 as our calculation of DSO for that period would have included a full second-quarter of sales from Amplify. For another rough estimate, if we take out our estimate of Amplify's receivables and sales from the first quarter from HSY's second quarter sales and receivables figures, we calculate an adjusted DSO for the second quarter of 25.4, only about a half of a day less than the reported DSO. The actual impact was likely less than this as HSY has had several months to improve upon Amplify's collectability. Given that we are not concerned about the increase in DSO due to the unusually low level in last year's second quarter, we may have "chased a rabbit" somewhat in this paragraph. However, we are a little curious about management's comment on the receivables increase and will be skeptical if it is used again in the next two quarters to explain another increase in receivables.

Inventory Is Declining

HSY's inventory levels have been noticeably declining in the last two quarters as seen in the following table:

	7/1/2018	4/1/2018	12/31/2017	10/01/2017
COGS	$958	$998	$1,111	$1,093
Inventory	$916	$782	$753	$938
COGS YOY growth	6.8%	2.8%	-9.6%	-5.2%
Inventory YOY growth	-2.1%	-1.6%	1.0%	11.2%
Inventory DSIs	***87.3***	***71.5***	***61.9***	***78.3***

	7/2/2017	4/2/2017	12/31/2016	10/02/2016
COGS	$897	$970	$1,228	$1,153
Inventory	$936	$795	$746	$844
COGS YOY growth	0.8%	-4.1%	16.4%	7.8%
Inventory YOY growth	7.5%	3.2%	-0.7%	3.7%
Inventory DSIs	***95.2***	***74.8***	***55.4***	***66.8***

As noted above, the company finalized the Amplify acquisition on 1/31/18. HSY does not disclose the specific fair value of inventory acquired but does quantify "other current assets" (not including accounts receivable) at $35.5 million. Despite the inclusion of the Amplify inventory at the end of the first quarter with only two months of Amplify cost of sales, the company's DSIs fell by over 3 days year-over-year in 1Q18. **Importantly, not only did the DSI decline, but the inventory balance itself has declined year-over-year for the last two quarters.** To examine the movements in inventory more closely, we show the percentage makeup of inventory components for the last 8 quarters in the table below:

	7/01/2018	4/01/2018	12/31/2017	10/01/2017
Raw Materials % of Inventory	24.6%	27.0%	24.1%	26.2%
Goods in Process % of Inventory	12.7%	13.2%	10.0%	9.1%
Finished Goods % of Inventory	62.8%	59.8%	65.9%	64.7%
Inventory at FIFO % of Inventory	100.0%	100.0%	100.0%	100.0%
Adjustments to LIFO as % of Total FIFO	15.6%	17.8%	19.4%	16.2%

	7/02/2017	4/02/2017	12/31/2016	10/02/2016
Raw Materials % of Inventory	27.1%	30.6%	33.8%	31.2%
Goods in Process % of Inventory	11.0%	11.8%	9.5%	9.7%
Finished Goods % of Inventory	61.8%	57.6%	56.7%	59.2%
Inventory at FIFO % of Inventory	100.0%	100.0%	100.0%	100.0%
Adjustments to LIFO as % of Total FIFO	16.3%	18.6%	20.0%	18.3%

We can see that the decline in inventory was more focused in raw materials. HSY's main raw materials include cocoa, sugar, dairy products, and nuts. Prices for cocoa were higher in the first half of 2018 versus 2017 while prices for milk and sugar were notably lower in the first half of 2018. (Prices for these three commodities for the last three years are shown

in the below exhibits from Tradingeconomics.com.) The company cited unfavorable price realization of 1.5% penalizing sales for the first six months of 2018 which is likely in part due to benign raw materials prices.

We also know the following about the company's inventory accounting policy from its 10-K:

> ***"As of December 31, 2017, approximately 59% of our inventories, representing the majority of our U.S. inventories, were valued under the last-in, first-out ("LIFO") method. The remainder of our inventories in the U.S. and inventories for our international businesses are valued at the lower of first-in, first-out ("FIFO") cost or market.*** *LIFO cost of inventories valued using the LIFO method was $443,492 as of December 31, 2017 and $402,919 as of December 31, 2016. The adjustment to LIFO, as shown in Note 16, approximates the excess of replacement cost over the stated LIFO inventory value. The net impact of LIFO acquisitions and liquidations was not material to 2017, 2016 or 2015."*

HSY does not designate its commodity derivatives as hedging instruments, so inventories are not impacted by mark-to-market adjustments. Instead, commodity derivatives are marked to market every period with the gains and losses recognized in cost of sales as described by the company in its SEC filings:

> *"Derivatives used to manage commodity price risk are not designated for hedge accounting treatment. Therefore, the changes in fair value of these derivatives are recorded as incurred within cost of sales. As discussed in Note 11, we define our segment income to exclude gains and losses on commodity derivatives until the related inventory is sold, at which time the related gains and losses are reflected within segment income. This enables us to continue to align the derivative gains and losses with the underlying economic exposure being hedged and thereby eliminate the mark-to-market volatility within our reported segment income."*

For example, the mark-to-market impact for 2Q18 was a $183,000 gain compared to a $32.5 million loss in the year-ago quarter. Looking at the tables above, we can speculate that the spike in cocoa prices in the second quarter of 2018 drove up the value of contracts hedging future inventory purchases, leading to the lower losses on outstanding contracts. Note that in its adjusted and segment results, HSY adjusts out the mark-to-market impact and includes only the amount of gains or losses associated with inventory sold during the period. The following table shows information disclosed by the company about its commodity derivates positions. We recommend reading the table in conjunction with the detailed explanation of line items shown below it:

	7/01/2018	4/01/2018	12/31/2017	10/01/2017
Net (Gains)/Losses on Mark-to-Market- (In COGS)	-$0.183	-$66.590	$15.234	$2.445
Net Losses Reclassified from Unallocated to Segment Income	$20.648	$29.660	$23.040	$24.399
Unallocated (Gains)/Losses to Adjust Segment to Reported Income	-$20.831	-$96.250	-$7.806	-$21.954
Cumulative (Gains)/Losses Recognized in COGS but Unallocated	$10.865	$31.696	$127.946	$135.538
(Gains)/Losses Expected to Be Reclassified to Segment over 12 Months	$41.445	$77.411	$94.449	$93.814

	7/02/2017	4/02/2017	12/31/2016	10/02/2016
Net (Gains)/Losses on Mark-to-Market- (In COGS)	$32.519	$5.536	$134.577	$37.246
Net Losses Reclassified from Unallocated to Segment Income	$20.963	$22.624	$2.190	$1.455
Unallocated (Gains)/Losses to Adjust Segment to Reported Income	$11.556	-$17.088	$132.387	$35.791
Cumulative (Gains)/Losses Recognized in COGS but Unallocated	$157.492	$145.937		
(Gains)/Losses Expected to Be Reclassified to Segment over 12 Months	$91.119	$88.675		

Net (Gains)/Losses on mark-to-market- (In COGS)- The mark-to-market gains and losses on outstanding commodity derivative contracts that are recognized in COGS for each period.

Net Losses Reclassified from Unallocated to Segment Income- The gains and losses from commodity contracts related to inventory sold during the period. This is the amount reflected in both segment results and the company's adjusted income figures.

Unallocated (Gains)/Losses to Adjust Segment to Reported Income- The adjustment used to reconcile segment earnings to reported income.

Cumulative (Gains)/Losses Recognized in COGS but Unallocated- The cumulate gains and losses which have been realized in COGS but have not been recognized in either segment results or adjusted earnings as the related inventory has not been sold yet.

(Gains)/Losses Expected to Be Reclassified to Segment over 12 Months- The amounts expected to be reclassified from the "Cumulative (Gains)/Losses Recognized in COGS but Unallocated" account (explained above) to being recognized in segment and adjusted income figures based on the company's current forecasts.

We can see that the company's reported gross profit for the last couple of quarters has benefitted from a huge shift from mark-to-market losses to gains which is most likely due to both the rise in cocoa prices and the expiration of unprofitable contracts written prior to the decline in prices seen in key raw materials. HSY's cash inventory purchases in 2017 likely did not benefit from the lower raw materials prices due to contracts struck when the prices were higher. The losses on these contracts which built up during late 2016 and 2017 have essentially been "amortized" into HSY's adjusted profits as the inventories associated with the contracts were sold. However, we see from the decline in the "Cumulative (Gains)/Losses Recognized in COGS but Unallocated" line that these cumulative losses are running out implying lower losses recognized in adjusted results in upcoming quarters.

So, with all this in mind, we have the following observations about the company's inventory balances:

- Ordinarily, a decline in inventory from a company utilizing LIFO accounting raises a red flag due to the possibility it is benefitting from matching older, lower-cost inventories against current sales in what is known as a "LIFO liquidation."

- However, for a company to benefit from a LIFO liquidation, raw materials prices must be rising, and the company must be realizing higher sales prices. Neither is currently the case for HSY.

- Instead, the decline in inventories with the focus in raw materials likely reflects the company beginning to realize lower costs on acquiring new raw materials as its older, less favorable hedges have expired.

- In addition, the reduction in overall inventory levels in the last two quarters may also simply indicate the company is becoming more efficient in its inventory management.

- The company only includes gains and losses on contracts related to inventory that is sold in the period in its segment and adjusted results. The amount of cumulative deferred losses to be recognized in adjusted results is close to running out which may benefit adjusted profit figures in upcoming quarters.

- In short, we are not concerned that HSY's inventory balances contain any hidden problems at this point.

Explanation of EQ Rating Scale

Rating	Explanation
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 recent 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.

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