

## Boeing (BA) EQ Review- Part 2

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 Boeing (BA) with an EQ rating of 3- (Minor Concern)**

Part 1 of our review of BA was published in September and took an in-depth look at the company's use of program accounting. BA uses program accounting for its commercial aircraft segment. It is the only major user of program accounting left and the method's dependence on assumptions regarding unit sales forecasts, prices and profits a decade in the future makes it a source of criticism for many. Our general view was that while program accounting is heavily dependent on estimates, so is percentage-of-completion accounting used by the defense contractors (and BA's defense business). Relative to Airbus's unit cost method, BA's results do report higher profits earlier in a program, but lower profits as the program wears on.

After completing our review of the company, we initiate earnings quality coverage with a 3- (Minor Concern) rating. This is a reflection of the large amount of deferred cost liabilities

relating to the 787 program and the recent decision to cut 787 production rates back which increases the possibility of a charge related to that balance.

We note that the whole market is focused on BA's 737 MAX woes and recognize that the company securing recertification for the plane and resuming deliveries is quite literally a matter of survival. However, an educated discussion of the steps involved, potential pitfalls, and the ultimate time frame are beyond the scope of this accounting review. Readers should keep in mind that while we do discuss the cash flow impacts of the 737 MAX grounding, the possibility for a longer-than-expected recertification time frame is not reflected in our rating.

With that in mind, we note the following points about recent results:

- On a positive note, the rate of amortization of deferred production costs for the 787 program rose to a level above what we estimate it needs to be to fully amortize the deferred production cost balance and avoid a charge.
- However, the company also stated in the 10-Q that it was reducing the 787 production rate to 12 per month from the 14 per month which was just established at the beginning of the second quarter. The company stated this was due to “*fewer orders than anticipated for our commercial aircraft... In the third quarter of 2019, we decided to reduce the production rate on the 787 program for approximately two years beginning in late 2020.*” This is an item of concern as demand falling below expectations for any length of time increases the possibility that the company will be unable to sell a large enough number of 787s to satisfy the accounting quantity and that lower demand may result in lower prices which could prevent the company from fully amortizing the deferred costs. In fact, a lower production pace will likely increase the per plane cost and pressure margins.
- BA contended in the third quarter that it could have the 737 MAX recertified by the end of the year. However, that view was shattered this week when the company announced that the FAA has clearly stated that recertification will not happen in 2019, prompting the company to suspend production to save cash. BA had almost \$10 billion in cash and over \$6 billion in unused capacity on its revolver at the end of the 9/19 quarter. The cash burn rate in the third quarter of over \$4 billion despite a payables buildup indicates that roughly half the cash may be gone by the end of the current quarter. The company has already reserved for about \$6 billion in concessions to customers related to the matter but it is unclear when and how these reimbursements will be made. A \$4.2 billion contractual cash outflow to invest in a

JV with Embraer could also hit in early 2020. American Airlines and other customers are not anticipating a return of the 737 MAX before the March/April time frame. Moody's lowered its rating on BA's debt to A3 yesterday, so they are not projecting an immediate disaster. On the bright side, cash flow should rebound quickly when deliveries resume and the company's decision to not lay off or furlough workers, as well as the declaration of December's dividend, seems to convey the company is putting its money behind its optimism.

- BA records pension expense for its commercial segments under GAAP rules (FAS). However, pension expense for segments with government contracts are calculated under government rules (CAS) which provide for immediate cash reimbursement, are recorded in operating revenue, and typically exceed the non-cash expense FAS amounts. We have discussed in reviews of pure defense companies that a rise in CAS payments related to a change in method of selection of discount rates has led to artificial benefits to profits and cash flows for some of these companies. However, the CAS payments have been relatively steady for BA in recent periods and to its credit, it adds back both the FAS/CAS adjustment as well as the non-service component of pension costs to its non-GAAP results, thus removing any distortion.
- However, cash pension costs could increase soon. BA did not have to make cash pension contributions in 2018 and is not expected to in 2019 thanks to an increase in the discount rate assumption in 2018. However, this will likely reverse in 2020 as discount rates are likely to decline. A similar reversal in 2017 led to a \$4 billion required contribution, but the company paid all but \$500 million of that in stock. A decline in discount rates could also reduce the CAS reimbursement.

## 787 Deferred Production Amortization Figures Metrics Improved in 9/19 Quarter

We showed in Part 1 of our review of BA that the company's program accounting allows it to defer not only initial tooling and non-recurring setup costs, but also to capitalize the profits (and losses) on initial deliveries that fall below an estimated average profit margin per planes over the entire program run. We recommend readers revisit our overview of program accounting from Part 1 [here](#).

For a quick review, the program accounting method requires the company to make assumptions regarding the eventual number of planes produced, average prices realized and average costs per plane. From this, the company calculates and average profit per plane. In

the early parts of the run, profit per plane will fall below the average estimated profit and the shortfall is capitalized in “deferred production costs” as a component of inventory. Later in the production run when profit per plane rises above the estimated average, the deferred costs are amortized against earnings in the amount of the excess. To avoid a charge, the company must sell the targeted amount of aircraft (the accounting quantity) at a high enough profit to fully amortize the deferred costs.

We observed in Part 1 that the company had approximately \$31.5 million in deferred charges per remaining plane under the accounting quantity as of the end of the 6/19 quarter yet the deferred cost balance was only declining by about \$29.5 million per plane delivered during the quarter. The pace of amortization of deferred cost per plane rose above the \$31.5 million target in the 9/19 quarter as shown in the following table:

	9/30/2019	6/30/2019	3/31/2019	12/31/2018	9/30/2018
787 Deferred Production Costs	\$19,825	\$20,969	\$22,029	\$22,967	\$23,584
787 Unamortized Tooling and Other Non-Recur.Costs	\$2,215	\$2,354	\$2,532	\$2,638	\$2,774
Total 787 Deferred Production Costs	\$22,040	\$23,323	\$24,561	\$25,605	\$26,358
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787 Deliveries	35	42	36	39	34
787 Cumulative Deliveries	894	859	817	781	742
787 Program Accounting Quantities	1,600	1,600	1,600	1,600	1,500
787 Undelivered Under Firm Orders	529	555	596	604	638
787 Cumulative Firm Orders	1,423	1,414	1,413	1,385	1,380
Change in Deferred Production Costs	-\$1,283	-\$1,238	-\$1,044	-\$753	-\$782
Per Delivery	-\$36.66	-\$29.48	-\$29.00	-\$19.31	-\$23.00

On the surface, the notable acceleration in the amortization of deferred production costs per plane is a positive as it implies the company improved its realized profit per plane to a level which, if sustained, would allow the company to fully amortize the deferred costs and avoid a charge. However...

## BA Announced a Reduction in the Monthly Production Rate of 787 in the Quarter Due to Lower Demand

Both selling the entire accounting quantity and keeping costs to a minimum are integral to the company fully amortizing its 787 deferred cost balance. We noted in Part 1 that BA

increased its monthly production pace of 787s to 14 from 12 at the end of the first quarter of 2019. A higher production rate is a positive as it promotes more efficiency and higher margins. However, the higher production rate was unfortunately short-lived as the company announced in the 9/19 quarter that it is returning to the 12 per month rate given global trade concerns. The 9/19 10-Q stated:

*“The continued global trade tension has resulted in market unties and **fewer orders than anticipated for our commercial aircraft. In the third quarter of 2019, we decided to reduce the production rate on the 787 program for approximately two years beginning in late 2020.** We continue to monitor the potential for additional disruption and adverse revenue and/or cost impacts that may result from global trade tension including, the potential imposition of further tariffs, or other future geopolitical economic developments.”*

This is a significant red flag as is the statement admitting that 787 orders are falling behind schedule which increases the possibility that BA won't be able to sell enough 787s to meet the accounting quantity or to do so, it will have to lower prices and realize inadequate profits to cover the deferred cost balance. The increase in deferred cost amortization per plane delivered we cited above likely benefitted from the higher production rate. We will continue to monitor that figure going forward for signs of deterioration from pricing pressure or a reduced production rate.

### Accounting and Cash Flow Impacts of 737 MAX Problems

The only area of investor focus for BA right now is the 737 MAX problem. Deliveries of the aircraft were halted following the grounding of the plane this spring while production continued. This has led to a buildup of inventory seen in the table below which shows the inventory related to commercial aircraft production.

	9/30/2019	6/30/2019	3/31/2019	12/31/2018	9/30/2018	6/30/2018
Commercial Aircraft Programs	\$63,518	\$58,691	\$55,490	\$52,753	\$53,568	\$52,830

At the end of the year, roughly half the commercial aircraft related inventory was comprised of work-in-process (including deferred production costs) on the 787 program. The spike in inventories in the last three quarters gives an indication of the cash BA is spending to build 737 MAXs that are not being delivered to customers. BA management had previously stated that it expected to have the 737 MAX re-certified and for deliveries to resume before the end

of 2019 while still cautioning it was conceivable that production could be trimmed or suspended. The news flow took a turn for the worse last week when it was announced that the FAA made it clear that recertification will not happen in 2019. Two days ago, BA also announced it would be suspending production of the planes although it is not laying off or furloughing workers so production can be resumed quickly once the company gets the green light from the FAA. We note that American Airlines has stated it does not expect to fly the planes before April with other carriers removing it from schedules until at least March.

There are many factors impacting the company as a result of the grounding. A thorough investigation into the time frame of eventual re-certification is beyond the scope of this earnings quality review. However, we offer the following thoughts on the accounting and cash flow considerations involved.

- BA had \$9.8 billion in cash and equivalents at the end of the 9/19 quarter and \$6.6 billion in unused borrowing capacity on its revolving credit line. Free cash flow in the 9/19 quarter was a negative \$2.9 billion with another \$1.17 billion spent on the dividend. The company has suspended the buyback which leaves us with an approximate “bare bones” cash burn rate of over \$4 billion, meaning the company has likely eaten through about half its cash balance in the current quarter. Note that accounts payable, which are typically relatively stable, jumped from \$12.9 billion at the end of the year to over \$15 billion at the end of the 9/19 quarter indicating the degree to which suppliers are already feeling the pinch. The production suspension will only worsen the pain for them. (We note that this will impact TransDigm (TDG) on which we initiated earnings quality coverage last week).
- In addition to the basic operating cash burn, the company is already negotiating payouts to airline customers to compensate for their lost revenue. The company established a liability in the second quarter of over \$5.5 billion to cover concessions to reimburse customers for lost profits related to the delivery delay but the ultimate payment method and time frame remain uncertain.
- The following table shows the deferred production costs associated with the company’s 737 program.

	9/30/2019	6/30/2019	3/31/2019	12/31/2018	9/30/2018	6/30/2018
Total 737 Deferred Production Costs	\$2,003	\$2,024	na	\$934	na	na

Note that these amounts are minuscule compared to the comparable 787 balances as the 737 program has been around for decades and the initial tooling costs and losses from lower profitability on early production runs were much smaller and have long been amortized. In fact, the company was no longer breaking out the 737 portion of deferred costs given it was so small. However, the delay in production and costs related to the grounding have resulted in an increase in the deferred cost balance. BA reduced the production rate of 737s to 42 from 57 at the start of the second quarter. This increased the cost to produce planes in the current accounting quantity by \$1.1 billion in the first quarter, \$1.8 billion in the second, and \$872 million in the third. The company expects to be able to deliver all the existing 737s within a year of recertification. This will drive a huge rebound in cash flow, but these higher costs will permanently impair the overall profitability of the program. Nevertheless, should the 737 MAX and future variants deliver on their promises, we believe it is possible the company will be able to extend the accounting quantity further and the increase in deferred costs may ultimately be amortized without a one-time charge.

- The company declared a \$2.055 per share dividend on December 16<sup>th</sup>, flat with the previous quarter. This marked the end of a long string of December increases but seems to broadcast management's confidence the 737 MAX will fly again soon.
- BA has been in negotiations over the last year to establish a strategic partnership with Embraer S.A in which BA will acquire 80% interest in the commercial aircraft and service operations of Embraer and a joint venture to promote a develop the KC-390. The deal requires a \$4.2 billion payment from BA and as of the filing of the 10-Q, the company expected the deal to close in "early 2020." This could be a sizeable cash outflow coming at a bad time.
- As a result of the above, Moody's lowered its rating on the company's debt to A3 earlier this week. This is still well above junk status and we read it to be an acknowledgment of an increased risk level while still not yet sounding an all-out alarm with regards to the company's ability to service its debt.

## A Quick Look at the Pension

While the bulk of the company's business is in commercial aviation, it has a sizeable portion of its operations coming from defense contracts with the government. Pension expense

related to employees of the commercial business segments is calculated under GAAP accounting rules (FAS) while pension expense for employees in segments working on government contracts are calculated under government rules (CAS). The government reimburses the company for the CAS expenses in the period incurred with the amounts recorded in revenue while the FAS expenses are non-cash. CAS amounts regularly exceed FAS amounts which results in a boost to reported operating income as well as cash flow. We have noted in past review of defense companies that changes to CAS aligning discount rate assumptions with FAS produced a situation where CAS income was rising faster than FAS expense providing an artificial benefit to earnings growth. Clients can see a more detailed discussion of this in our recent review of the impact of changes in pension accounting on major defense companies [here](#).

To BA's credit, it adds back the excess of CAS payments over what amounts would have been under FAS (FAS/CAS adjustment) to its non-GAAP earnings. In addition, it adds back non-service components of its FAS pension costs. The following table shows the reconciliation from GAAP to non-GAAP for the last eight quarter:

	9/30/2019	6/30/2019	3/31/2019	12/31/2018
GAAP Diluted EPS	\$2.05	-\$5.21	\$3.75	\$5.93
Company Non-GAAP EPS Adjustments				
Pension FAS/CAS Service Cost Adjustment	-\$0.48	-\$0.49	-\$0.48	-\$0.39
Postretirement FAAS/CAD Service Cost Adjustment	-\$0.16	-\$0.16	-\$0.16	-\$0.14
Non-Operating Pension Expense	-\$0.16	-\$0.17	-\$0.16	-\$0.08
Non-Operating Postretirement Expense	\$0.05	\$0.05	\$0.05	\$0.04
Provision for Deferred Income Taxes on Adjustments	\$0.16	\$0.16	\$0.16	\$0.12
Non-GAAP EPS	\$1.45	-\$5.81	\$3.16	\$5.48
	9/30/2018	6/30/2018	3/31/2018	12/31/2017
GAAP Diluted EPS	\$4.07	\$3.73	\$4.15	\$5.49
Company Non-GAAP EPS Adjustments				
Pension FAS/CAS Service Cost Adjustment	-\$0.45	-\$0.40	-\$0.47	-\$0.52
Postretirement FAAS/CAD Service Cost Adjustment	-\$0.13	-\$0.14	-\$0.14	-\$0.12
Non-Operating Pension Expense	-\$0.09	-\$0.01	-\$0.07	-\$0.05
Non-Operating Postretirement Expense	\$0.05	\$0.04	\$0.04	\$0.05
Provision for Deferred Income Taxes on Adjustments	\$0.13	\$0.11	\$0.13	\$0.22
Non-GAAP EPS	\$3.58	\$3.33	\$3.64	\$5.07



We can see that the FAS/CAS adjustment has been sizeable but relatively constant over the last two years. Looking at non-GAAP earnings effectively eliminates any artificial boost or drag from changes in the adjustment.

CAS amounts are essentially immediately reimbursement by the government, so they have an immediate impact on cash flow whereas FAS amounts are non-cash with the company making cash contributions to in compliance with ERISA guidelines.

The following table shows the company's key assumptions used in the calculation of its pension obligation:

	2018	2017	2016
Pension Discount Rate	4.20%	3.60%	4.00%
Expected Return on Plan Assets	6.80%	6.80%	6.80%

The increase in the discount rate in 2018 led to a large cut in the benefit obligation at the end of the year. The company did not have to make cash contributions in 2018 and it is not expected to in 2019. However, we would expect to see a reduction in the discount rate in the 2019 10-K given the lower rate environment which will result in a boost to the benefit obligation which could trigger required company contributions to resume in 2020. Note that the reduction in discount rate in 2017 contributed to a \$5.6 billion actuarial loss, driving up the pension obligation. That year, the company made \$4.0 billion in pension contributions consisting of \$3.5 billion in stock with the balance in cash. It is also conceivable that lower rates could lead to reduced CAS reimbursements next year as well.

With regards to the assumed rate of return, plan assets were 48% invested in fixed income assets at the end of 2018 with the remainder in equity, real estate and hedge funds. The 6.8% return assumption does not look overly unrealistic.

## 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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