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Also, there are over 50 books, many case studies and 30 videos on investing in the VALUE VAULT. Email me at **Aldridge56@aol.com** with (only) **VALUE VAULT** in the subject line. Within 48 hours, I will do my best to send you the keys to the cloud-based folder so you can download anything you might like to study. No reply? Just email me a reminder. I know this blog needs better organization and all the information can be overwhelming for new investor.

Reading this blog, other blogs like:

A self-taught investor with excellent examples <http://www.gannonandhoangoninvesting.com/>

Another for beginners: <http://www.oldschoolvalue.com/blog/>

<http://www.oddballstocks.com/>

<http://www.practicetruthfearnothing.com/>

<http://brooklyninvestor.blogspot.com/>

<http://www.ritholtz.com/blog/2012/06/picture-guide-to-financial-markets-since-1800/>

<http://www.thedividendguyblog.com/2009/04/27/lessons-and-ideas-from-benjamin-graham-by-jason-zweig/>

## **APPLY, APPLY**

But YOU must apply what you read to the actual world. Practice. Investing is something that you DO. OK, you are a beginner and you have read a basic book on accounting (go to the folder called BOOKS in the VALUE VAULT and choose *How to Read a Financial Statement*).

Next ask yourself, “Would I want to invest in the cruise ship industry?” Can I understand what drives profitability? What factors can the companies control? Is there a better company than the others? Compare the two using common size financial statements to see trends or indications of strength or weaknesses Common-size financial statements:

<http://smallbusiness.chron.com/normalized-commonsize-financial-statement-25471.html>.

What are the key issues that drive profitability? Read through two years of annual reports, noting what you don’t understand. Read about the industry BEFORE you read the article below.

Then read the article and see if you agree or can reverse engineer what the writer did. I think you will

have more fun and make your learning more relevant.

From: <http://www.gannonandhoangoninvesting.com/>

Let's look at **Carnival (CCL)**.



### How Should Investors Define Earnings

What does this company earn?

For me, Carnival's earnings are neither EBITDA nor net income. They are:

Cash Flow From Operations

- Maintenance Capital Spending

= Cash available to **add** passenger capacity, acquire other companies, pay down debt, buy back stock, and pay dividends

That's earnings. It's the cash you collected in excess of what you need to spend in cash to collect the same amount of cash next year. It's a sustainable level of cash flowing through the business.

How is this different from EBITDA?

Carnival's depreciation expense does not match its capital spending requirements. By my estimates, about 20 years ago, the company was charging off less in depreciation than was actually needed to maintain its competitive position in the industry, have the same number of passenger nights, etc. In its most recent year, this was perhaps no longer true.

It's a complicated issue. A lot of different facts go into deciding just how much CCL needs to spend to maintain its competitive position and its passenger capacity.

But how do we know what Carnival's maintenance cap-ex needs are?

We can't know that until we start researching the company. In fact, it's not that easy to know until we read about current shipbuilding contracts from CCL, RCL, and NCL. Until we look at what the average real cost per new berth (think of it as 2 cruise berths = 1 hotel room) for CCL, RCL, etc.

### **Maintenance Cap-Ex is a Complicated Issue**

At most companies, it's very hard to determine maintenance cap-ex. I'm actually cheating by talking about Carnival. Cruise ships are easily identifiable long-lived assets that change hands in control transactions, etc. I'm pretty close to analyzing buildings here.

I mean, they give these ships names. I can trace their history from company to company. We know who built them and what they charged. How the deal was financed.

A lot of companies have much more complicated cap-ex calculations. How do decide if a grocery store, Chipotle location, movie theater, etc. You don't always replace these things because they've become deathtraps. And you often can't sell them in the same form you own them. To renovate an existing theater costs one thing. To sell the building to someone who might use it for a totally different purposes costs something else.

### **An Unfairly Simple Example: How Much is the Maintenance Cap-Ex of a Cruise Ship?**

How long have ships been in service in the past? This requires some basic knowledge of the industry's history. Especially knowledge of the history of these companies before they went public. That means it helps to know some cruise history from before the 1987-1989 period when Carnival went public, the Pritzkers invested in Royal Caribbean (and Richard Fain took over), etc.

CCL was the most profitable cruise line by far at the time it went public. Royal Caribbean and Carnival look similar on the outside at the time. Inside, the numbers told a very different story. In fact, Royal

Caribbean's management used Carnival's proxy statement internally and tried to figure out how they could mimic what CCL was doing. They used it to try to motivate changes inside their own company under the idea that if CCL could achieve these margins, etc. so could they. Over the next 25 years, that never really panned out.

To this day, analysts sometimes mention buying RCL as a better way to make money on a rebound in the cruise business because RCL has more room for improvement than CCL. That's true. But it's also been true for well over 25 years.



What does this have to do with maintenance cap-ex? It's worth remembering that at the time CCL went public, RCL had a newer fleet than CCL. Even today, RCL has the absolute best new ships – and still earns less on the whole fleet. CCL has spent heavily on new ships at times in its past. But even when it was operating older ships, it made a lot of money. There's obviously a competitive disadvantage if you fall far behind in terms of having enough great new ships. But the evidence is that these ships can age a lot further – both CCL and RCL's – without spending at the rate these companies were spending on new capacity in the late 90s and early 2000s.

How old were some of the ships at the time Carnival went public?

How old are ships today?

What kind of returns do you earn on old and new ships? How much of a premium is there on something like Oasis when it first comes out? Does this disappear within 10 years, within 5 years? Do you keep it in service for 15 years, 20 years, 30 years?

Do you sell it to a third rate cruise line once you are done with it? Are there enough minor cruise lines left to buy ships from you? Or do you keep moving it into less and less mature brands? For example, do you move a ship from Carnival over to Costa and then sell it to Pullmantur. This actually happened with what was once a major new ship CCL had built. They moved it over from Carnival which is an American line they own and the line the ship was actually built for over to Costa when the ship was considered too old for Carnival and then it was sold by Costa to Pullmantur which is a Spanish line. RCL eventually bought Pullmantur. And they didn't stop using that ship. So you can trace the life of a ship that was built decades ago as something big and nice and new for Carnival into something very outdated but still operated by a Spanish cruise line owned by one of the two big cruise companies.

This matters a great deal in the case of CCL and RCL.

### **Depreciation vs. Maintenance Cap-Ex**

Once we've considered those issues we need to answer: How realistic is depreciation?

You need to check the note on property and equipment. But would you have even gotten to read about the company, checked this note, etc. if you had been screening on the basis of something like P/E ratios?

Probably not. For Carnival, neither a P/E screen nor an EV/EBITDA screen would've gotten you interested in the company. So, once again, we see that all price ratios are flawed at least some of the time.

Anyway, the note for CCL gives you the following key facts:

- Existing ships had gross value of \$39.764 billion
- Ships under construction had gross value of \$526 million
- Everything else had gross value of about \$1.9 billion
- Accumulated depreciation was \$10.15 billion
- So book value of PP&E is about \$32 billion

In other words, the vast majority (94%) of gross PP&E is existing ships. And this is really the only number that matters in calculating maintenance cap-ex. So how much does CCL have to spend on cap-ex on its existing fleet to keep its passenger capacity and competitive position steady?

That's a complex problem.

Let's deal with a simple problem first. How does Carnival account for depreciation of its fleet?

We can get that info from the 10-K. It says they use a 30 year lifespan for ships and 15% residual value.

So, for example, a ship that costs \$1 billion to build today will have depreciation that looks something like:

- \$28.33 million in depreciation every year for the next 30 years
- \$150 million in residual value in 2042

Carnival will obviously improve a \$1 billion ship many times over its 30 year assumed life. And these improvements will be depreciated differently.

Let's look at how much CCL actually depreciates on a corporate basis. At the end of 2010, PP&E was \$30.967 billion. At the end of 2011, PP&E was \$32.054 billion. So let's call average PP&E for the year \$31.51 billion. Depreciation was \$1.522 billion. That's 4.8% of PP&E.

How accurate is that?

Setting aside inflation - which GAAP accounting doesn't deal with - I actually think it's fine. I think they are pretty close to depreciating the right number of berths - if you want to think about it that way - each year.

The idea that about 4% to 5% of the company's property needs to be replaced each year is about right. The idea that you can replace property carried at 1992 prices in 2012 is clearly wrong.

This can be fixed several ways. For CCL and RCL, my preferred way of treating maintenance cap-ex is to take corporate passenger capacity (number of berths) and multiply that number by 1/estimated useful life of a berth.

So, if a new ship has a life of 25 years and 1,000 berths we take 1,000 times  $1/25 = 1,000 * 4\% = 40$  berths. That is what maintenance cap-ex is. It's the real cost of replacing 40 berths per year. If we assume it costs \$230,000 to replace one berth we then calculate economic - not accounting - depreciation on the ship as \$9.2 million a year. This is a real number. In future years, it will rise with inflation. There is no tendency for new ship costs to rise faster than inflation for CCL or RCL. Prices in real terms have been steady for decades if you exclude momentary global spikes in input costs for the shipbuilders - these do happen, but 3 years later they have vanished, etc.

In essence, the first \$9.2 million in cash flow this ship generates needs to be set aside to replace the ship at the end of its life. Only after the ship generates more than \$9.2 million in annual real cash flow is it more than paying for itself.

### **Even EBITDA is Misleading Sometimes**

Once we have this number for a cruise company's entire fleet we can calculate free cash flow as:

Cash Flow From Operations

- Maintenance Cap-Ex

= Free Cash Flow

Why don't we use EBITDA?

EBITDA is a bad proxy for economic earnings at a cruise company because cruise companies have:

- No tax expense
- Negative working capital

### **What's the Value of Cash That's Been Collected – But Hasn't Been Earned?**

Cruise companies generate "float". Deposits are collected long before ships sail. And this is permanent money. In fact, it's been a permanent source of funding for Carnival since before Carnival was even Carnival.

The cruise company now known as Carnival was created by Ted Arison (Micky's father) using the float he had collected for Norwegian Cruise Lines. This float was the source of the dispute that caused the separation between Arison and Norwegian and led to the creation of Carnival.

It has always been very significant to the cruise industry that working capital needs are less than zero. This means that growth is almost entirely dependent on the availability of ships, credit for financing ships, etc. Because otherwise growth costs less than nothing - it actually produces cash up front.

In fact, until Carnival was ready to go public, the company relied more on working capital management - generating float and paying all bills as slowly as possible - to fuel growth. Around the time the company went public - in 1987 - they realized they had reached the stability of cash flows, size, etc. where it was just easier to focus on having an investment grade credit rating and borrowing on a permanent bond basis instead.

In truth, even a company like Carnival - who can issue plenty of bonds if they want to - is largely funded through generous ship financing guaranteed by European governments (Finland, Germany, etc.) who subsidize their shipyards plus the float from Carnival's own passengers to be.

So, at the end of the day I get a number for CCL in terms of free cash flow that is very, very different from what would be suggested by either EBITDA or net income.

In this example Carnival - which I believe to be selling for a low double digit ratio of price to owner earnings - would appear on both EV/EBITDA screens and P/E screens as if it was trading at a high teens to low 20s type P/E ratio. That's because EV/EBITDA comparisons to other companies don't work because other companies pay taxes and Carnival does not. And neither net income nor EBITDA take cash flow dynamics into account.

### **How Cash Flows Through a Business is Very Important**

The way cash flows through Carnival is very favorable for shareholders. The fact it is not taxed is even more favorable. This combination leads to a very reasonable owner earnings based P/E ratio in my mind even while neither EV/EBITDA nor P/E captures this.

So why not use some standard calculation of owner earnings instead of either EV/EBITDA or P/E?

### **Owner Earnings are the Most Relevant Number – And the Least Objective**

Even now - I bet a lot of people disagree with my calculation of Carnival's owner earnings. Perfectly reasonable analysts, investors, etc. may calculate Carnival's owner earnings divided by price as being in the high teens to low 20s. Just like a simple P/E ratio.



I think they are wrong. But it's a judgment call. Reasonable people can say the useful life of a cruise ship is 20 years and that the ship has no residual value or that it's useful life is 30 years and the ship has a 15% residual value. Reasonable people can say the cost per berth used in calculating what needs to be replaced should be what RCL is paying today, what NCL is paying today, what CCL is paying today, the average real cost of what the whole industry has paid on average over the last 20 years, etc. All of these are perfectly reasonable ways to model maintenance cap-ex. But they're different assumptions. And different assumptions result in different estimates of owner earnings.

Reasonable people can disagree over whether "float" is permanent money that should be treated just as if it was earned, money that should be treated as having some value but less value than if it was earned, or money having no value at all - simply the same as adding debt to the balance sheet on one side and cash on the other.

### **Can We Use Numbers We Don't Agree On?**

If my assumptions are:

- Useful life of ship: 30 years; residual value: 15%
- Replacement cost per berth: \$190,000
- Float: As good as earned

And your assumptions are:

- Useful life of ship: 20 years; residual value: 0%
- Replacement cost per berth: \$240,000
- Float: As bad as owed

We will get totally different calculations of owner earnings.

### **Normalizing Earnings is Even More Subjective**

And this doesn't even deal with truly contentious normalization questions like:

- Taxes
- Fuel costs
- Demand

Is a tax rate of very nearly 0% really sustainable? Or is it fair to assume CCL, RCL, etc. will one day pay corporate taxes like every other company.

Is Brent at more than \$90 a barrel, spreads between crude oil and the fuel Carnival actually uses, and the level of fuel consumption per passenger all normal or abnormal right now?

Is vacation demand less than 4 years from one of the greatest financial crisis of all times and within a year of the worst deadly disaster in Carnival's history normal or abnormal?

And so on.

Those 3 questions alone are huge. On earnings per share of \$1.81 a share, answering all 3 questions pessimistically would probably reduce EPS from \$1.80 today to \$1.20 in "normal times".

While answering all 3 questions optimistically would probably increase EPS from \$1.81 today to \$4.00 in "normal times".

And those 3 questions are just about normalization of taxes, fuel, and demand. They have nothing to do with the core issues of how to treat cap-ex, float, etc. which are the keys to Carnival's business model.

When we get into dealing with those things, we are really talking about a situation where a uniformly bullish analyst can say normal owner earnings are 4 to 5 times what a uniformly bearish analyst says they are.

One person can be saying CCL will earn about 4% to 5% on its tangible equity in normal times. Another can say CCL will earn 16% to 20% on its tangible equity in normal times.

In a sense, both assertions are reasonable.

Personally, I think they are both wrong. But that's just my opinion. And while I can argue that 16% to 20% is too high an estimated normal owner earnings return on tangible equity for CCL and 4% to 5% is too low an estimate – there are definitely arguments to be made in favor of either of those assertions and against my argument in favor of about a 10% to 15% normal range.

We can't use an ideal measure like normal owner earnings - despite it clearly being the best way to value a company - in our everyday discussions of a company. There would be no comparability. I could say Carnival's normal owner earnings are \$3.60 a share. You could say its \$1.80 a share. And

someone who believes cruise companies will certainly be taxed in the future can say its \$1.20 a share at best.

### **We Need a Number that Translates Well – Even if It's a Rough Translation**

Newspapers and analysts and blogs and Bloomberg can use P/E and EV/EBITDA. They can't use more relevant metrics like owner earnings because one data provider would say a stock is trading for 10 times owner earnings and the other would say it's trading at 30 times owner earnings.

This is the problem we face with valuation ratios. But it's just part of the larger problem of how to account for things.

### **Accounting is Recording and Presenting – It's Open to Interpretation**

Should accounting stress:

- Conservatism
- Comparability
- Comprehensiveness
- Relevance
- Past Records
- Future Estimates

Is it an accountant's job to put numbers into a form where I can compare Carnival's results to Colgate's results.

But if the goal is to make Carnival and Colgate present financial statements that use the exact same items, etc. then doesn't that lose a lot of relevance. And comprehensiveness.

For example, I want detailed notes on how CCL accounts for depreciation, etc. Ideally, Carnival's financial statements would be restated to present maintenance cap-ex, etc. rather than depreciation. But that kind of presentation of Colgate's results would look pretty odd. And for Colgate I want to know what the cost of goods sold was. For Carnival this number is mostly meaningless unless it's also disclosed that the company was sailing full.

What I really want to know with CCL are things like the cost of a cruise before and after fuel. At Colgate, what oil prices were doing is pretty irrelevant to me. At Carnival, it's critical.

It's very hard to compare two different companies on the same metrics and have those metrics matter equally. It's easier to compare two different things on the same metrics without worrying how relevant those metrics are. That allows us to have full comparability. But it may leave us with an irrelevant comparison.

A huge part of what you do in any stock analysis is translate a company's financial statements further and further from GAAP and closer and closer to business reality.

The end result is low comparability but very high relevance.

In the end, what we want to compare is the return we expect on each stock. That's the only metric that is both truly comparable and truly relevant for all stocks.

### **One Ratio is Never Enough**

My point is that you should never make an investment decision based on EV/EBITDA alone. But that's only because you should never make an investment decision based on P/E or P/B or P/S alone. You should never make an investment decision based on only one metric.

Owner earnings matter more than EBITDA.

But we can't report owner earnings. We can't screen for owner earnings. So we really can't talk about stocks we haven't analyzed yet in terms of owner earnings. It's only after you've analyzed a stock that you can move past net income and EBITDA and get to owner earnings.

Until we reach that point, we have to use numbers like net income, EBIT, EBITDA, etc.

And, for me, if we're going to do that - we might as well use EBITDA.

But it's just a placeholder. Once we can do an actual analysis of the company, we will replace the general idea of EBITDA with our own special take on what owner earnings really are at the company.

But that's a private number. It's not a number everyone can agree on. And it's not something you can screen for.