A LOOK BACK AT A MOST FORGETTABLE YEAR: MY JANUARY 2021 DATA UPDATE

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An Annual Ritual

- I spent the first week of 2021 in the same way that I have spent the first week of every year since 1995, collecting data on publicly traded companies and analyzing how they navigated the cross currents of the prior year, both in operating and market value terms.
- I knew that this year would be more challenging than most other years, for two reasons.
  - The first was that the shut down of the global economy, that was initiated by the spreading of COVID early last year, had lasting and divergent effects on the operations of companies in different sectors, and across the world.
  - The second was that, starting mid-year in 2020, markets and the real economy moved in different directions, with the former rising on the expectations a post-virus future, and the latter languishing, as most of the world continued to operate with significant constraints.

A Skeptical Look at Big Data

1. If everyone has it, no one does: I believe that if everyone has a resource or easy access to that resource, it is difficult to make money off that resource. Applying that concept to data, the most valuable data is unique and exclusively available to its owner, and the further away you get from exclusivity, the less valuable data becomes.
2. Data is not dollars: Data is valuable only if it can be converted into a product or service, or improvements thereof, allowing a company to capture higher earnings and cash flows from those actions. Data that is interesting but that cannot be easily monetized through products or services is not as valuable.

My motivation

1. Gain perspective: One of the challenges of being a business or an investor is developing and maintaining perspective, i.e., a big picture view of comprises normal, high or low.
2. Clear tunnel vision: Investors are creatures of habit, staying in their preferred markets, and often within those markets, in their favored sectors. Equity research analysts are even more focused on handfuls of companies in their assigned industries. So what? By focusing so much attention on a small subset of companies, you risk developing tunnel vision.
3. Expose BS: I know that everyone is entitled to their opinions, but they are not entitled to their facts. I am tired of market experts and analysts who make assertions, often based upon anecdotal evidence and often plainly untrue, to advance a thesis or agenda. The big questions about leverage, taxes and profitability beg to be addressed with data, not emotions or opinions.
4. Challenge conventional wisdom: Investing has always had rules of thumb on how and when to invest, ranging from using historical PE or CAPE ratios to decide if markets are over valued, to simplistic rules (for individual stocks. It is very likely that these rules of thumb were developed from data and observation, but at a very different point in time, but markets and companies have moved on, and they no longer work.

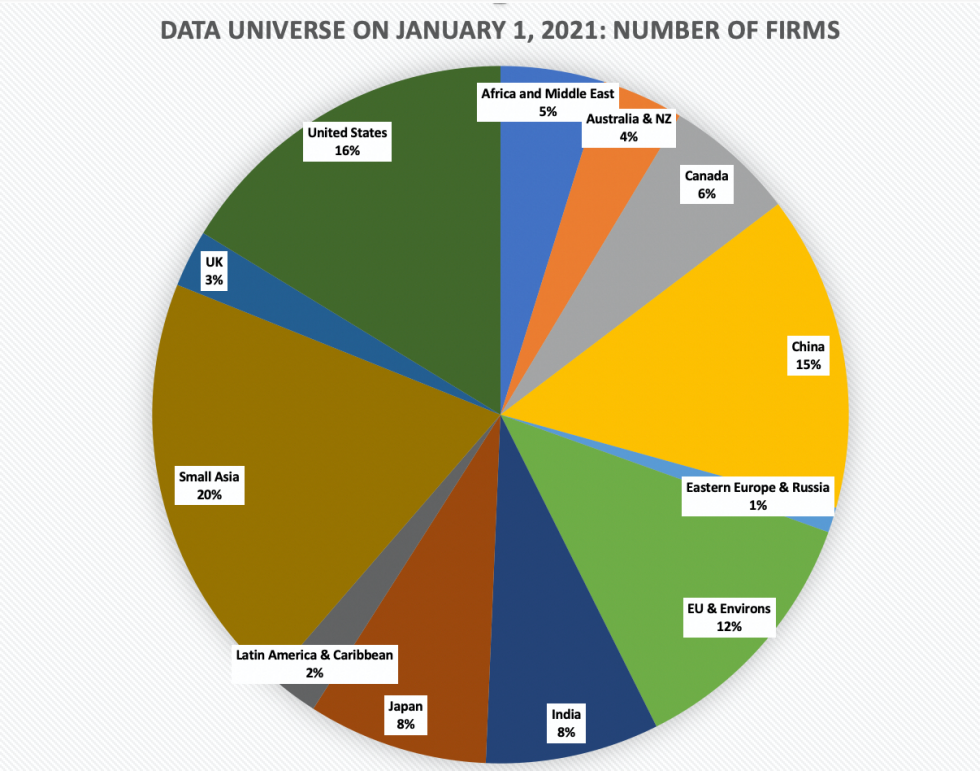
Data and Bias

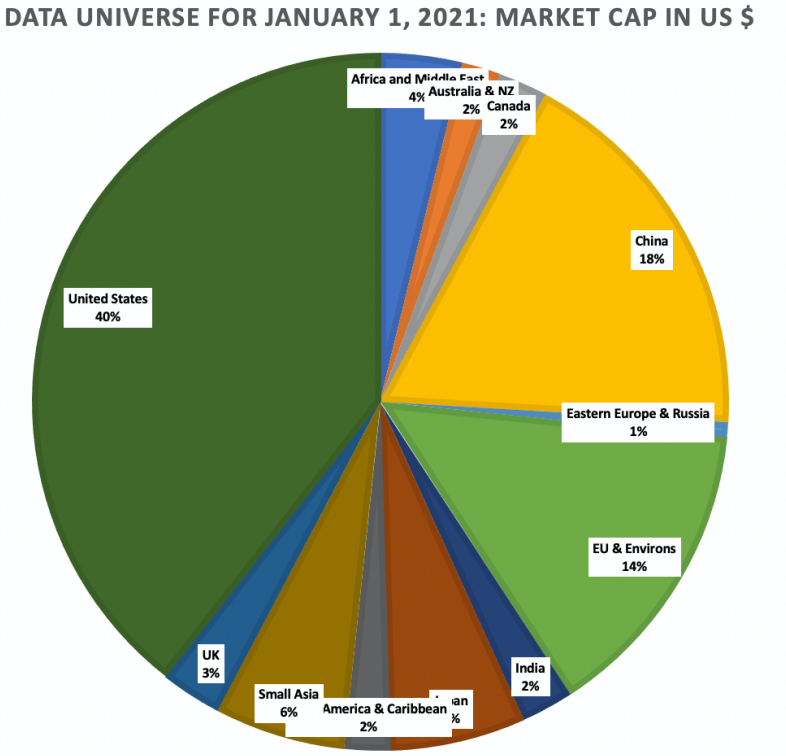
- I also want to dispense with the notion that data is objective and that numbers-focused people have no bias.
  - If you have a bias or a preconception, it is amazing how quickly you can bend the data to reflect that bias or preconception.
  - The stronger your preconceptions, the more you will look for data that back them up.
- As an exercise, take a look at my updated industry averages for taxes paid by US companies in 2021. From past experience, I predict that numbers in this table will be quoted by journalists, economists and even politicians during the year, but the tax rate measure (since I report several different measures) that they quote will reflect their biases. Put simply, if you find my data quoted elsewhere, I would suggest that you visit the source and make your own judgments.

The Sample

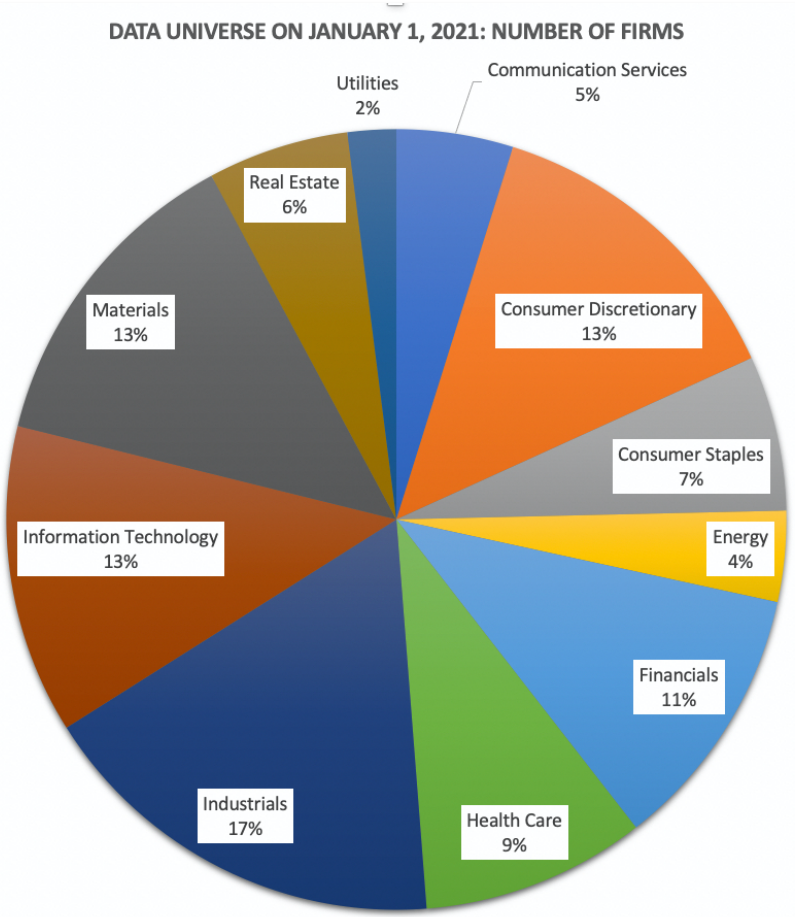
- The focus in markets is often on subsets of firms, usually with good reason.
  - In general, larger firms (especially in market value terms) get more attention that smaller ones, because their movements in their value are more consequential for more investors.
  - Publicly traded firms generally garner more attention than privately owned businesses, partly because they are larger, but also because there are is more information disclosed and investment opportunity with the former.
  - Companies in developed and more liquid markets are in the spotlight more than their counterparts in emerging markets. That said, focusing on just large or developed market companies can create biased samples and skew assessments about market and operating performance.
- It is to avoid this that I started by looking at all publicly traded companies that were traded on January 1, 2021, and arrived at a sample of **46,579 firms, spread across 136 countries**.

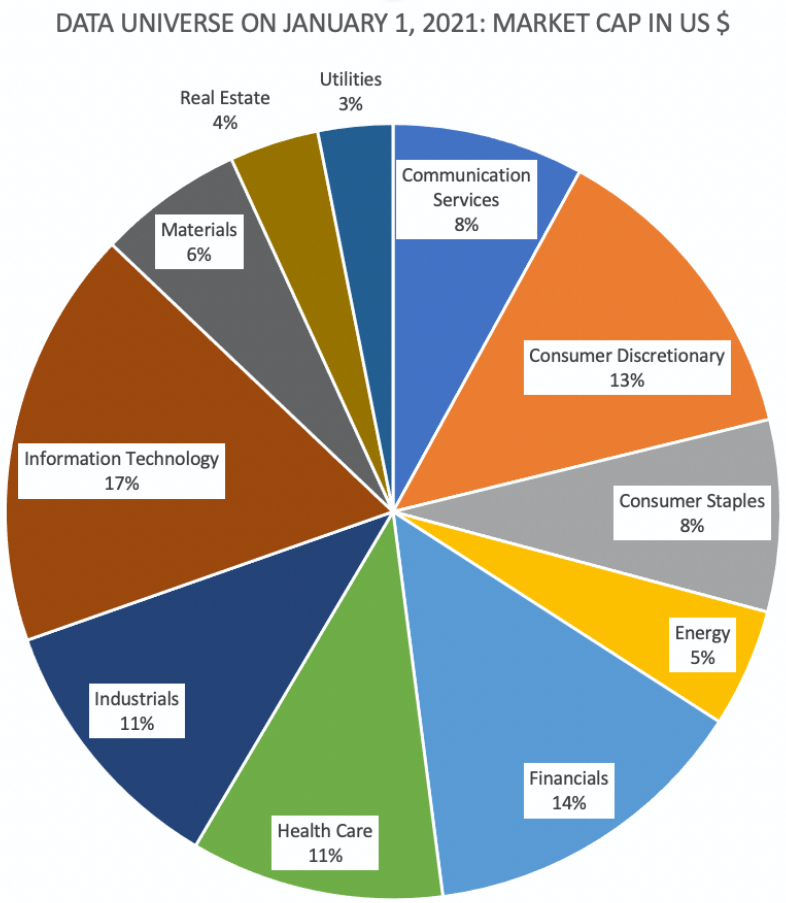
Sample: Geography



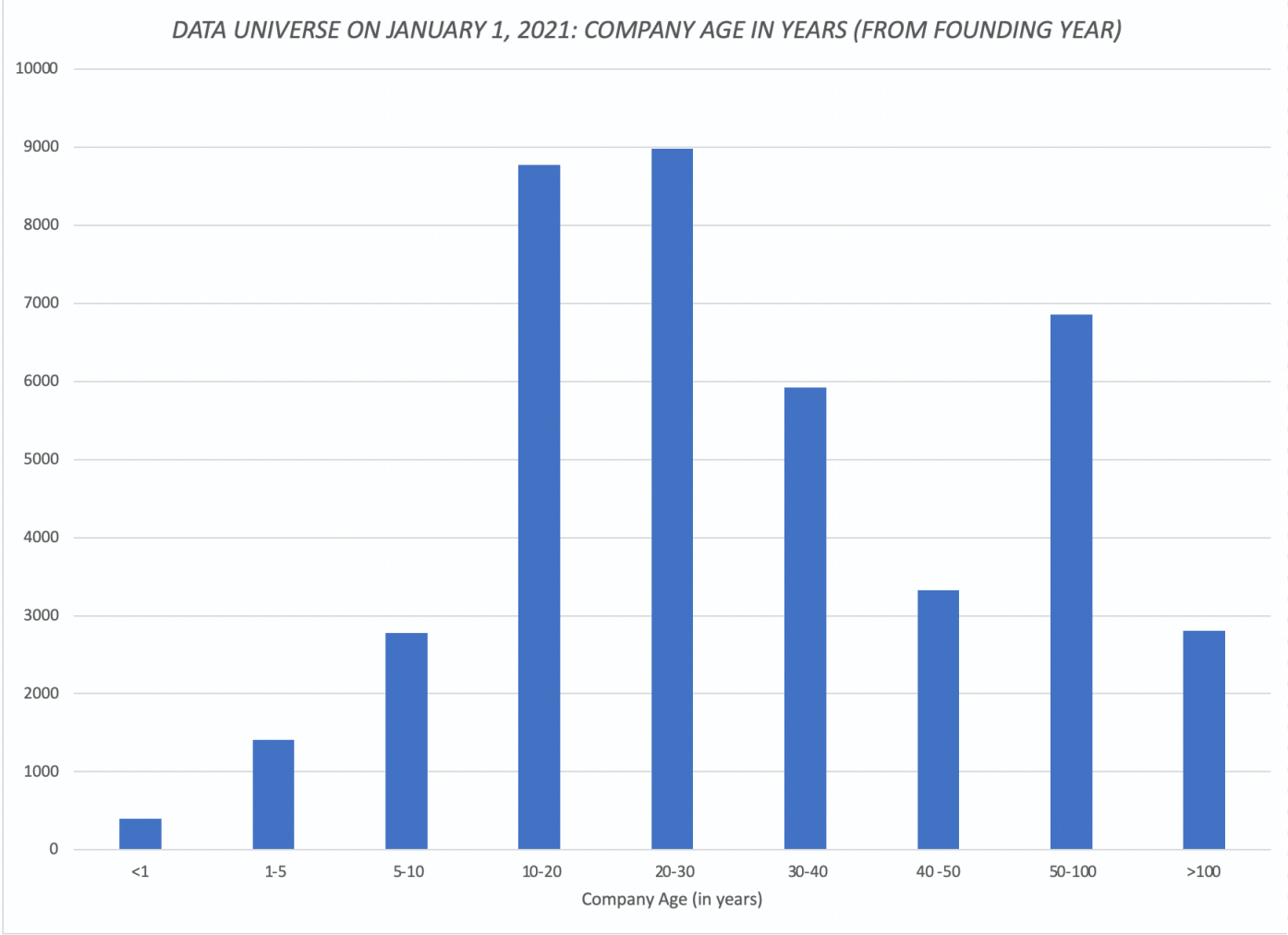


Ssmple: Sector Breakdown





Sample: Company Age



Data: General Observations

- Currency: One of the challenges of dealing with a global sample is that you are working with accounting and market numbers quoted in multiple currencies. I will employ two techniques.
  - First, all value numbers (like market capitalization, debt or revenues) that I aggregate or average will be converted into US dollars to ensure currency consistency.
  - Second, most of the numbers that I report will be ratios, where the currencies are no longer an issue.
- Missing Data: Information disclosure requirements vary across the world, and there are some data items that are available for some companies or some markets, and not for others. Rather than remove all firms with missing data, which will eliminate a large portion of my sample, I keep the firms in the sample and report only the variable/metric that is affected by the missing item as "NA".
- Accounting Differences: In addition to disclosure differences, there are also accounting differences in revenue recognition, expensing rules, depreciation methods and other details across markets. I work with the publicly available data, recognizing that net income for a Japanese company may be measured differently than earnings for an Indian company, and accept that this may skew the results.
- Source Reliability and Errors: I obtain my raw data from S&P, Bloomberg and others, and while they obtain the data from computerized databases in different markets that collect public filings and at every stage in this process, there is the possibility of errors. I do run some simple error checks to eliminate obvious mistakes, but I am sure that there are others that I miss. My defense is that, unless the mistake is on a very large scale, the impact it has on my group statistics is small, simply because of my sample size. In addition, there is also the possibility of accounting fraud in some companies, and there is little or nothing that can be done about them.

Data: Macro

- US Equity Risk Premiums: The equity risk premium is the price of risk in equity markets. In my view, it is the most comprehensive measure (much more so than PE ratios or other pricing multiples) of how stocks are being priced, with a higher (lower) equity risk premium correlating with lower (higher) stock prices.
  - The conventional approach to measuring this premium is looking at past returns on stocks and treasuries (or something close to riskfree) and measuring the difference in historical returns and I report the updated levels (through 2020) for historical premiums for stocks over treasuries in this dataset.
  - I have argued that this is both backward looking and static, and have computed and reported a forward-looking and dynamic equity risk premium, based upon current stock price levels and expected future cash flows; you can find both the current level and past values in this dataset.
- Country Risk Premiums: In a world where both investing and business is globalized, we need equity risk premiums for markets around the world, not only to value companies listed in those markets, but also to value companies that have operations in those countries.
- Bond Default Spreads: The bond default spread is the price of risk in corporate bond (lending) markets, and as with the equity risk premium, higher (lower) spreads go with lower (higher) corporate bond prices. In the same dataset where I compute historical equity risk premiums, I report historical returns on corporate bonds in two ratings classes (Moody's Aaa and Baa ratings). I also report estimates of the default spreads based upon current yields on bonds in different ratings classes and the current riskfree rate.

Data: Micro Methods

- Industry: Data can be consolidated by geography, industry or company size, and I use all three, to some extent or the other. My primary consolidation is by industry and I break down my sample of 46,579 firms into 94 industry groupings.
- Geography: There is one dataset where I look at companies broken down by country, and I report a number of different statistics for 136 countries. I would caution you to take this data with a grain of salt, since there are only a handful of listings in some country. I do report much more data for a broader geographical classification, where I classify firms into six broad geographical groupings: Note that while emerging markets is a very large and diverse group, I do report statistics for India and China, two of the bigger components, separately.
- Averaging: I hope it does not sound patronizing, but I want to explain how I compute group values (averages), because it is not as obvious as it sounds. For instance, you could compute the PE ratio for each company in the group and take a simple average, but that approach has two problems. First, it weights small firms as much as large firms, and outliers can cause the average to take on outlandish values. Second, it eliminates firms that have negative earnings (and thus have no PE ratios) from the sample, potentially creating biased samples.
  - Using a weighted average PE ratio can counter the first problem and using a median can reduce the outlier effect, but neither approach can deal with the second problem (of sample bias).
  - For most of my industry averaging, I use an aggregation approach, where I compute ratios using aggregated values; to compute the PE ratio for chemical companies, I add up the market capitalizations of all chemical companies and divide that number by the aggregate net income of all chemical companies (including money losers). This ensures that (a) all companies are counted, (b) the computed number is weighted since larger companies contribute more to the aggregate and (c) the risk of outliers is reduced, since it is less likely to occur in a large sample than for an individual firm.
- Current data: The focus of this data update is to report on how companies did in 2020, rather than to provide historical time series. Since I am updating the data in early January, and the complete numbers for 2020 will not be available until March or April at the latest, I will be using the trailing twelve-month numbers for operating variables (like revenues and operating income) to compute ratios. For most companies, that will effectively be the twelve months through September 30, 2020, that will be captured in the data.

Data: Micro Variables

Risk Measures 1. Beta 2. Standard deviation in stock price 3. Standard deviation in operating income 4. High-Low Price Risk Measure	**Cost of Funding** 1. Cost of Equity 2. Cost of Debt 3. Cost of Capital	**Pricing Multiples** 1. PE &PEG 2. Price to Book 3. EV/EBIT and EV/EBITDA 4. EV/Sales and Price/Sales
Profitability 1. Net Profit Margin 2. Operating Margin 3. EBITDA, EBIT and EBITDAR&D Margins	Financial Leverage 1. D/E ratio & Debt/Capital (book & market) 2. Debt/EBITDA 3. Interest Coverage Ratios 4. Accounting lease debt vs my estimates	Cash Flow Add-ons 1. Cap Ex & Net Cap Ex 2. Non-cash Working Capital as % of Revenue 3. Sales/Invested Capital 4. COVID effects on market cap and earnings
Returns 1. Return on Equity 2. Return on Invested Capital 3. ROE – Cost of Equity 4. ROIC – Cost of Capital	Dividend Policy 1. Dividend Payout & Yield 2. Dividends/FCFE & (Dividends + Buybacks)/ FCFE	Risk Premiums 1. Equity Risk Premiums 2. Bond Default Spreads

Data: COVID effects

- *COVID effects*: To capture how COVID has played out in different sectors and geographies, I computed the changes in aggregate market capitalization during 2020 broken down by sub periods (1/1/20 - 2/14, 2/14- 3/20, 3/20 - 9/1 and 9/1 - 12/31/20), reflecting the ups and downs in the overall market. I also looked at the change in revenues and operating income over the last twelve months (October 2019 - September 2020) compared to revenues in the year prior (October 2018 - September 2019).
- *Operating metrics*: My computations for operating margins and accounting returns (returns on equity and capital) reflect the COVID effect on earnings in 2020, and not surprisingly, you will see that their values are much lower for the most damaged sectors (restaurants, airlines) than in prior years. If you are comparing across companies in these sectors, that may not be an issue, but if you are valuing companies and want to find a target value for margins or accounting returns, you will be better served using my archived values for these variables from 2019.
- *Pricing metrics*: I compute and report a range of pricing multiples from PE ratios to Enterprise Value (EV) to sales ratios, but as with the operating metrics, COVID has left its imprint on the numbers this year. As market capitalizations have quickly retraced their losses, but operating variables have not, the multiples reflect that disconnect. They are either not meaningful in some sectors, which are reporting aggregated losses, or at elevated levels in others (where the collective earnings are down significantly, but market values are not). Again, while this should not be an issue with cross company comparisons, there are two cautionary notes. The first is that investors who come in with strong preconceptions of what comprises cheap or expensive in pricing ratio terms or historic norms will find that everything looks exorbitantly priced. The other is that you will lose large segments of your peer groups if you stick with multiples like PE ratios for comparisons, since so many companies will be money losing.

Data Access and Use

- *Data access:* The data is accessible on my website, if you click on data. The data for 2020 is available under current data, and data from previous years under archived data. If you do click on current data, you will see the data classified into groupings based upon how I see the world (corporate governance, risk, investment returns, debt, dividends and pricing). You can see the data online for US companies by clicking on the links next to the data item, but I would strongly recommend that you download the excel spreadsheets that contain the data instead. Not only will this let you access data for other geographical regions, but each excel spreadsheet includes descriptions of the variables reported in that dataset and many include short YouTube videos explaining the data.
- *Data Use:* I know that those who download my data use it in many different contexts. If you use it at their jobs as corporate finance or equity analysts, I am glad to take some of that burden off you, and I hope that you find more enjoyable uses for the time you save. If you use my data to buttress an argument or debunk someone else's, I wish you the best, as long as you don't make it personal. If you use is it to back your case in legal settings, go ahead, but please do not involve me formally. I believe that courts are a graveyard for good valuation practices and while I do not begrudge you, I have no interest in playing that game.
- *Data Questions*: If you have a question about how a variable is computed, please check the website first, since the question has probably been answered already, but if you cannot find that answer, you know how to find me, and I will try to address your issues. As I mentioned earlier, the excel spreadsheets that contain the data include the descriptions of how I compute the variables.

Use and pass it on…

- I know that the numbers (in terms of companies and variables) makes this data update sound like daunting work, but I will make a confession. I enjoy the process, even including the messy details, and it prepares me for the year to come. In fact, the time that this aggregated data saves me through the year, when I value and analyze companies, represents a huge multiple of the time I spend putting it together.
- Put simply, if you are tempted to anoint me for sainthood for sharing my data, I would do it anyway and sharing it costs nothing, while potentially benefiting you.
- In sum, I hope you find the data that I provide useful, and if you do, you do not have to thank me or even acknowledge me as the source. In the next month, I will add about a dozen posts on what I see in the data, but I will do so with the recognition that change is the only constant and that assuming that things always revert back to historic norms is not an investment philosophy.

The Caveats

- Numbers ≠ Facts: While the numbers, once reported, look precise, they are not facts but opinions. Thus, when you look at the debt ratios that I report for a sector, it is worth emphasizing that I have capitalized lease commitments and added them to all interest bearing debt (short and long term) to arrive at total debt, yielding a different number that what you may see on a different service. I have tried to be as transparent as I can in making my estimates but they remain estimates.
- Past is not always prologue: I believe that knowing history is useful in investing, but trusting it to repeat itself is dangerous.
- Just because everyone does it does not make it right: As you look at the datasets, you will see patterns in investment, financing and dividend policy in sectors. While there are often good reasons for these differences, there are also bad ones, with inertial on top of that list. The reality is that there are established corporate finance policies in many sectors that no longer make sense, because the sectors have changed fundamentally over time.