Tesla and the One Trillion Dollar Mystery

Tesla's stock has been on quite a wild ride lately. As of this writing, one share of TSLA is trading at around $800, which is about quadruple where it was just nine months ago. It's not often that a company with a market capitalization of $40 billion quadruples in less than a year, especially during a time frame in which the overall stock market advanced by just 15%. Not surprisingly, Tesla has been getting lots of attention lately.

In our experience, when a stock like this experiences such a large and dramatic upswing, the pundits might start calling for a near-term correction of some sort. In Tesla's case, though, it seems like the opposite is true. People are calling for Tesla the company to continue to grow, and for Tesla the stock to at least follow suit or maybe even grow faster. One particularly rosy projection that caught our eye recently was when famed mutual fund manager Ron Baron said that Tesla will reach $1 trillion in annual revenue ten years from now.

Our first thought on hearing that was that surely he was not referring only to Tesla's vehicular business. After all, Tesla also makes batteries which they could presumably sell to third parties for use in their own vehicles, and Tesla owns solar panel company Solar City. Maybe Mr. Baron is assuming a huge uptick in those other businesses which will help Tesla overall to get to that $1 trillion level? But then we watched the interview and learned that no, Mr. Baron is actually saying that Tesla's car business could get there all on its own. He even spelled it out: "$1 trillion in revenues just on the car business … and that's without the battery business."

Mr. Baron is an intelligent man who has enjoyed decades of investing success, so we are not going to knock him as a person or an investor. But we have a hard time believing his claim, so we decided to dig in a little and see how probable it might be for Tesla to become as big as he thinks it could in such a short time frame.

That's A Lot of Cars

The first important question to answer to evaluate Mr. Baron's claim is what is Tesla's revenue today. If it's $900 billion, then reaching $1 trillion in a decade is not such a difficult feat. But if it's only, say, $100 billion, then growing that to $1 trillion would be quite the accomplishment. Growing 10x in 10 years is rather difficult in any industry, let alone the ultra-competitive automobile market. Did you notice how many of the Super Bowl commercials were for electric cars?

In actuality, though, Tesla's car revenue is much smaller than $100 billion: in 2019 it was just under $20 billion. So that means it would need to grow 50 times its latest size in one decade! That's a compound annual growth rate of 48%!

So that's the big picture, but let's drill down a little to see the details that would go into this astounding calculation. In 2019 Tesla delivered a little under 370,000 vehicles. Based on the $20

billion revenue figure from the last paragraph, that implies the average sales price of each vehicle was around $54,000.

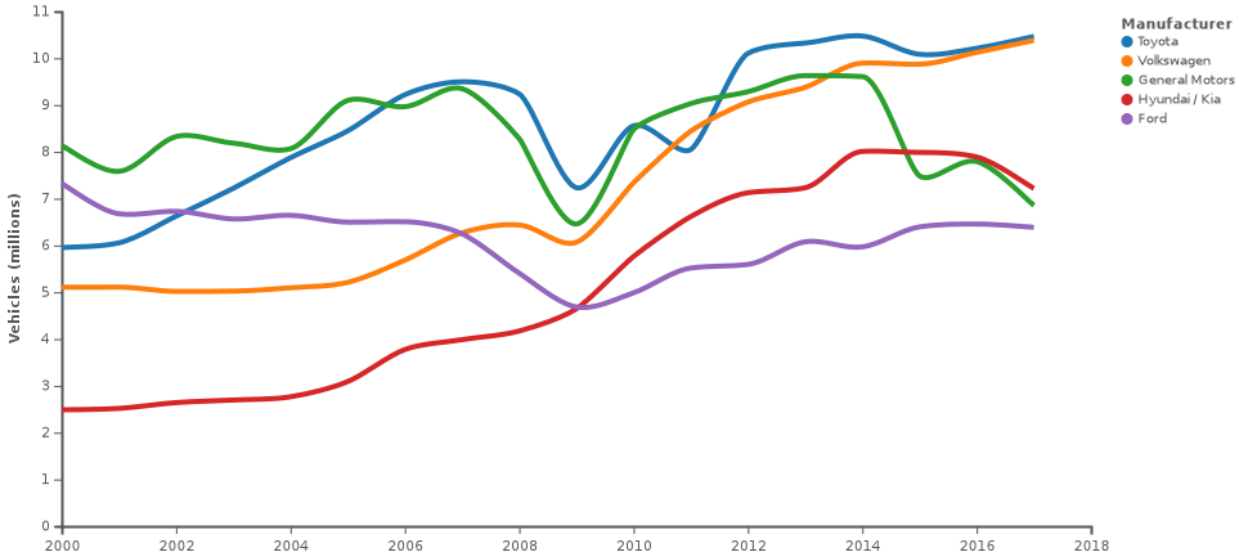
To get from that starting point to an end point of $1 trillion of auto-related revenue ten years from now, there are several different ways it could be done. Perhaps they could sell 5 million cars and charge an average of $200,000 each. But that seems like a lot of money to ask for a car, doesn't it? Maybe they'd only be able to get an average price of $75,000 per car, in which case they'd need to sell 13.3 million of them. Or maybe they wouldn't raise prices at all, they'd still fetch about $54,000 per car, and in that case they'd need to sell 18.4 million cars.

Fortunately for us, Mr. Baron actually laid out the basic assumptions behind his $1 trillion estimate for us to check. In that CNBC interview mentioned above, he specifically said "assuming you do 10 million cars." Well, that math is fairly easy: in order for 10 million cars to generate $1 trillion in revenue, they need to be sold for an average price of $100,000 each.

We've Looked at Cars From Both Sides Now

There are two ways to look at this math. First, we'll see how likely it may be that Tesla can sell 10 million cars in a year, and second we'll look at how likely it may be that Tesla can sell its cars for an average of $100,000 each.

Here is a chart showing the annual outputs of the world's largest auto manufacturers so far this century, according to industry group OICA (Organisation Internationale des Constructeurs d'Automobiles):

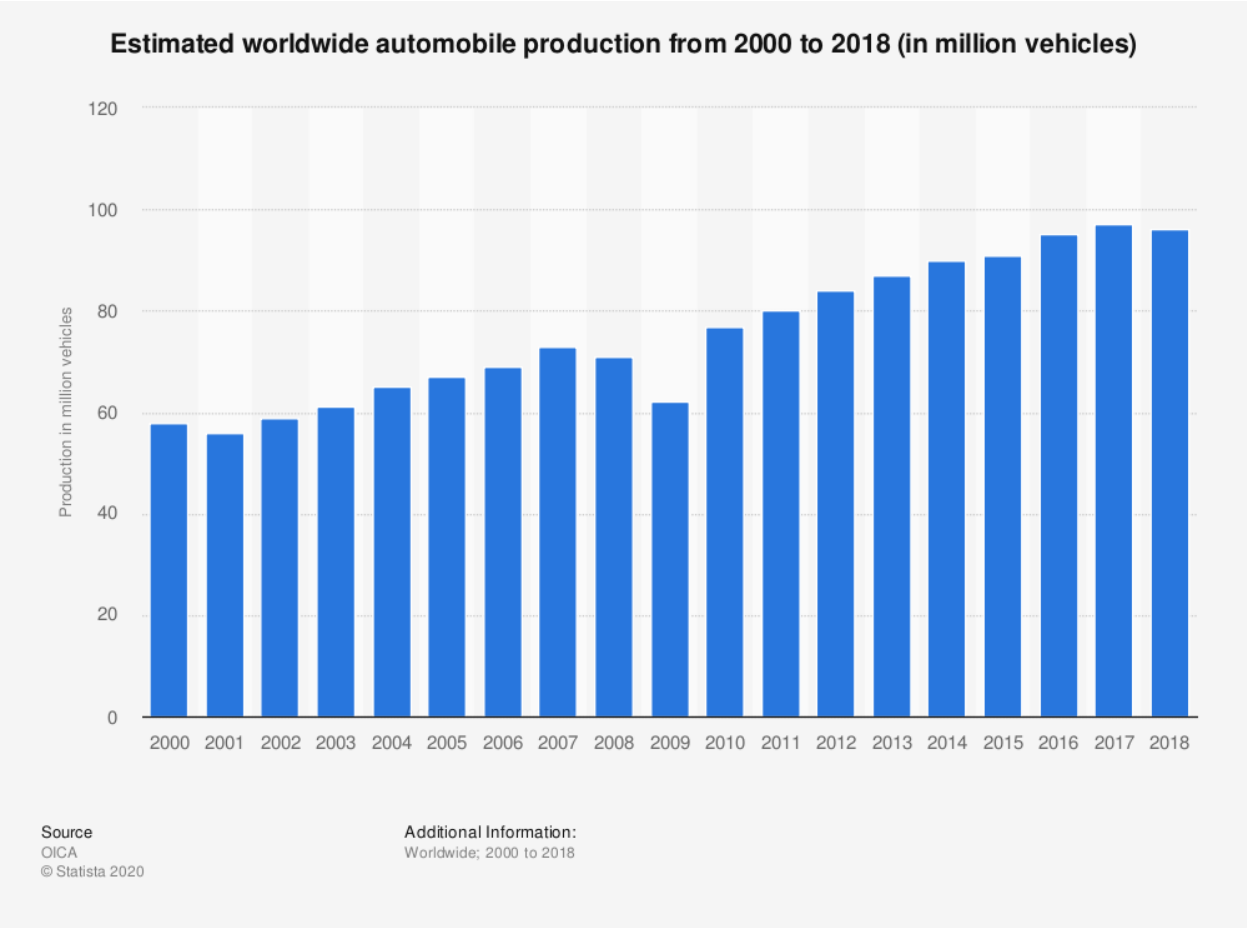


source: Wikipedia

Ford, General Motors, and Hyundai/Kia each produce around 6 million cars per year, while industry leaders Toyota and Volkswagen produce around 10 million. Each of these five companies has been around for decades, has dozens of plants scattered around the globe, knows

the ins and outs of their supply chain and their labor markets and their sales distribution, and they enjoy instant brand name recognition among consumers. And, according to some, Tesla can join their ranks in just ten years.

For 2016-18 the number of cars produced worldwide has hovered at just under 100 million. Looking back to 2000, this number has tended to increase by about 2 million per year on average. If that trend continues over the next decade and the world collectively buys 120 million cars in the year 2030, then Tesla's theoretical 10 million cars sold would represent a global market share of about 8.5%, a staggering advance from its current level of 0.4%.



source: OICA

So we have cast some doubt, at least in our own minds, about the first assumption. Let's turn now to the second—that Tesla can charge an average price of $100,000 per vehicle.

To go from around $54,000 in 2019 to around $100,000 in 2030 would require an average compound growth rate of 5.7%. Keep in mind what Tesla itself said in its recent fourth quarter earnings release: "We do not expect ASP [average selling price] to change significantly in the near term." So, really, instead of a steady increase of 5.7% per year for each of the next 10 years,

this assumption requires us to believe that ASP would hold steady for a year or two and then advance at some faster rate closer to 6.5% or 7.0%.

Does that seem reasonable? For a car's MSRP to increase by around 6-7% a year for a decade? Well, let's look again at recent history and see how that checks out.

A few years ago the Washington Post actually did a study of how car prices had trended over the preceding 20 years. They looked at four typical American cars: a Toyota Camry, a Honda Odyssey, a Hyundai Elantra, and a BMW 3 series. Here is what they found:

	Typical Sales Price			CAGR		
	1998	2007	2017	98-07	07-17	98-17
Camry	17,398	18,890	23,955	0.9%	2.4%	1.7%
Odyssey	23,955	26,240	30,790	1.0%	1.6%	1.3%
Elantra	11,514	13,995	17,985	2.2%	2.5%	2.4%
BMW	26,720	33,095	34,445	2.4%	0.4%	1.3%

source: Washington Post

Hmm. The car with the fastest price increase on that chart, the Elantra, grew from $11,514 in 1998 to $17,985 in 2017, a total increase of 56% or 2.4% CAGR (compound annual growth rate). And yet Mr. Baron and other Tesla bulls would have us believe that Tesla—in half that time—will be able to grow its average sales price from around $54,000 to $100,000. That's a total increase of 84%, or a CAGR of 5.7%.

So call us skeptical about the claim that Tesla's auto business can grow to $1 trillion a decade from now. We don't believe they'll be selling anywhere close to 10 million cars in 2030, and we certainly don't believe they'll be able to sell their cars for an average price anywhere near $100,000.

No Called Strikes

So what do we think? How much revenue will Tesla make in 2030? How many cars will they sell and at what price? As Warren Buffett is fond of saying, there are no called strikes in investing. In other words, we don't have to have an opinion on this particular company or stock. We can just say we don't like this pitch and wait for another one that's more in the center of home plate.

One last thing we will point out about the Tesla-related madness is that its stock market rise has been accompanied by some eye-popping statistics.

Consider this: on February 4, 2020, 60,938,800 shares of Tesla traded on the American stock market. At an average price that day of around $850, that represents a total value of $52 billion

which traded hands. Tesla's market cap was then a little over $150 billion, so that's a third of its total value.

Compare that to Apple on the same day. Apple's market cap of nearly $1.4 trillion was roughly ten times that of Tesla's. However, the 34,151,100 shares of AAPL that traded on February 4, at an average price per share of $315, represent a total value of a little under $11 billion or under 1% of its market cap.

Tesla, a company one-tenth the size of Apple, saw about twice as many of its shares traded that day at a value about five times bigger than Apple's, or around 33x in terms of the value traded compared to overall market cap. We're not sure exactly what that says, but we do know that it gives us even more pause about ever considering buying Tesla stock at these current prices.

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