Written by

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I am an economist by training, with a focus on environmental economics. After I completed my graduate schoo... more

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Symbol	Price	% Chg
MTCH	141.00	3.12%
ENSG	82.31	3.04%
HSIC	75.23	1.48%
BKNG	2,305.47	1.26%
EBAY	76.41	1.02%
HEI	127.90	0.97%
CNSWF	1,686.45	0.84%
MA	355.73	0.81%
AAPL	148.60	0.72%
MCO	377.85	0.66%
CMG	1,918.95	0.65%
CTAS	391.69	0.42%
BRK.A	430,901.00	0.28%
DPZ	511.87	0.25%
IDXX	668.27	-0.76%

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Facebook: Still At A Perfectly Scalable Stage

Aug. 25, 2021 4:10 PM ET | **Facebook, Inc. (FB)** | 4 Comments | 7 Likes

Summary

- This article analyzes Facebook from the perspective of its profit sustainability and scalability.
- This analysis examines the most two important aspects of profit Sustainability: return on capital employed (“ROCE”) and the marginal efficiency of capital.
- The results show that FB not only earned a consistently high ROCE in the past, but is still perfectly scalable at its current stage, indicating sustainable profit ahead.
- Lastly, this article also discusses its valuation, especially valuation adjusted for ROCE and valuation compared to the other FAAMG stocks.

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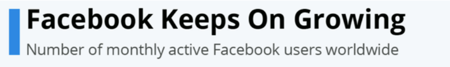
Investment thesis

This article analyzes Facebook (NASDAQ:FB), with a focus on its profit sustainability and scalability. This analysis examines the most two important aspects of profit Sustainability: return on capital employed ("ROCE") and marginal return on capital employed ("MROCE"). To me, ROCE and MROCE are the most two important metrics for analyzing a business. They reveal the two most fundamental aspects of the same central issue of profit Sustainability. ROCE tells us how profitable the business has been or is SO FAR. And MROCE sheds insights into which direction the profitability is likely to go.

The results show that FB not only earns a consistently high ROCE in the past but is still perfectly scalable at its current stage, indicating sustainable profit ahead. It is truly impressive for a business at such a staggering scale to maintain perfect scalability. Lastly, this article also discusses its valuation, especially valuation adjusted for ROCE and valuation compared to the other FAAMG stocks. And the results suggest that its valuation is in the middle range of the FAAMG pack.

The moat and the network effects

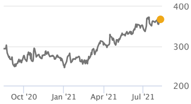
FB's moat is in its scale and scalability. The following chart shows the number of monthly active Facebook users worldwide. As can be seen, by the end of 2020, Facebook's monthly active user base had grown to 2.8 billion users - out of 4.9 billion total internet users! Within about a decade, the company has grown its user base from a few millions to about 60% of the total internet users in the world - an undisputed dominance of the social network.



About This Article

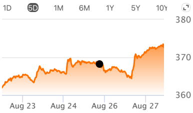
Ticker Covered	FB
Author's rating at publication	Neutral
Price at publication	$368.38
Change	1.16%
S&P 500 change	0.35%

Author's Rating History



About FB

Symbol	Last Price	% Chg
FB	372.63	2.26%
Post	372.38	-0.07%



PE (FWD)	26.39
Yield (FWD)	-
Rev Growth (YoY)	39.43%
Short Interest	1.23%

Compare to Peers

FB Ratings

SA Author	Bullish	3.85
Wall Street	Bullish	4.41
Quant	Very Bullish	4.91

Quant Ranking

Sector	Communication Services
Industry	Interactive Media and Services
Ranked in Industry	4 out of 47
Ranked in Sector	7 out of 199
Ranked Overall	68 out of 4002

Quant ratings beat the market »

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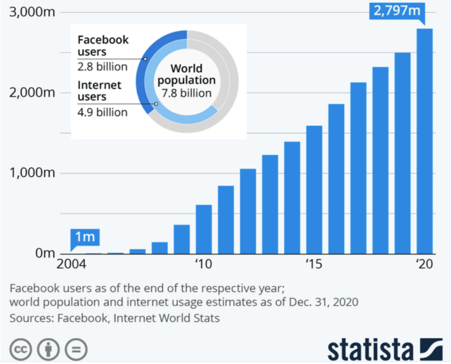
- Facebook eyes panel to advise on election matters - NYT
- Facebook: Fundamental Undervaluation Still Outweighs Risks
- Facebook looking at developing products and features for NFTs



Facebook users as of the end of the respective year;
world population and internet usage estimates as of Dec. 31, 2020
Sources: Facebook, Internet World Stats

Source: Statista

Furthermore, it is unlikely that such dominance would change in the future (barring any major regulation or antitrust legislation change) due to the so-called "network effects". The network effects refer to the fact that the value of certain products or services increases as more people use them. In other words, certain networks become increasingly more valuable as they become bigger. Not every network enjoys this magic feature, and as a matter of fact, most networks suffer a diminishing marginal rate of return - i.e., the additional return decreases as the network becomes bigger - as to be elaborated later. A chain restaurant network is an example. As the network becomes larger, the nodes begin to compete against each other for customers and the return diminishes.

But certain networks, like the services FB provides, enjoy this magic trait - the network becomes more profitable as it becomes bigger. There is nothing new about the concept. It was true of railways, telephones, and fax machines. All these examples share these common traits: A) the larger the network becomes, the more valuable it becomes (one segment of a railway linking city A and B is far more valuable when this segment also links to other railways linking other cities); and B) the larger the network becomes, the higher the switching cost (if everyone uses a fax machine and you do not want to use one, good luck to you).

Again, there is nothing new about the concept. But the internet age dramatically amplified the potency of the network effects. Once a lead is established - for whatever the reason, smart AI algorithms, advanced ML algorithms, or just dumb luck (FB certainly had benefited from all three) - the network effects would just kick in, take over, and compound itself.

It is a self-sustaining positive feedback loop: more users in this network will lead to more relevant and accurate recommended contents, search results, and ad placements, which will make the network even better and more valuable for its users and clients, which will, in turn, attract more new users and clients to join and make it harder for existing users to leave, which again will lead back to more users and an even larger network.

Return on capital employed ("ROCE")

ROCE stands for the return on capital employed. Note that ROCE is different from the return on equity (and more fundamental and important in my view). ROCE considers the return of capital ACTUALLY employed, and therefore provides insight into how effectively the business uses its capital to earn a profit. For businesses like FB, I consider the following items capital actually employed:

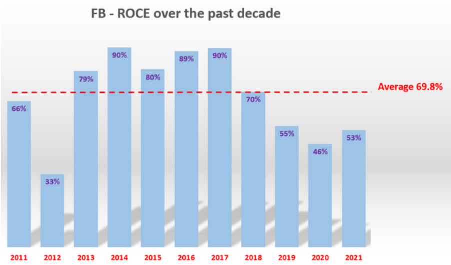
1. Working capital, including payables, receivables, inventory. These are the capitals required for the daily operation of their businesses.

2. Gross Property, Plant, and Equipment. These are the capitals required to actually conduct business and manufacture their products.

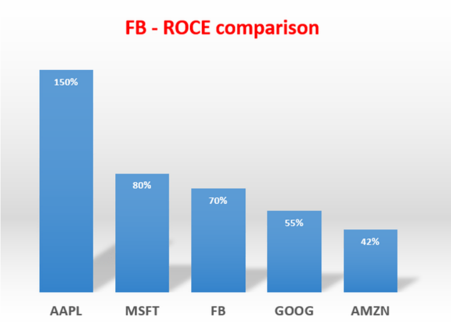
3. Research and development expenses (an essential expense for a business like FB).

Based on the above considerations, the ROCE of FB over the past decade is shown below. As seen, it was able to maintain a respectably high ROCE over the past decade: on average ~70% for the past decade. To put things in perspective, the next chart compares FB's ROCE against the other FAAMG stocks. As can be seen, FB earns a very competitive ROCE among them. Every

$1 of earning reinvested will fuel an additional $0.7 of future earnings growth.



Source: author and Seeking Alpha.



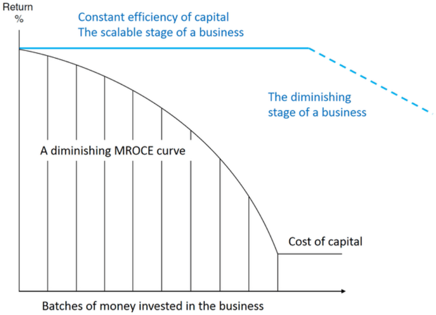
Source: author and Seeking Alpha.

Introduction to marginal return on capital employed ("MROCE")

In addition to ROCE, an equally important concept is the marginal return on capital employed ("MROCE"). To me, ROCE and MROCE are the most two important metrics for analyzing a business. They reveal the most fundamental two aspects of the same central issue of profitability. ROCE tells us how profitable the business has been or is SO FAR. And MROCE sheds insights into which direction the profitability is likely to go.

A bit of background and introduction for readers who are new to the concept. For readers familiar with the concept already, definitely skip this section. From what I've learned, the legendary economist John Maynard Keynes first explicitly expressed this concept, although people before him have observed and thought about it for some time already. What the concept tries to capture is a basic law in economic activities: the law of diminishing returns. Warren Buffett likes to say that interest rate acts like gravity on all economic activities. Well, diminishing returns act like gravity on all economic activities too, if not more so, as long as human nature does not change in any fundamental way.

The next chart illustrates the concept. As long as shareholders are seeking profit, a public business will first invest its money at projects with the highest possible rate of return (i.e., picking the lowest hanging apples first or getting the most bang for the buck first). Therefore, the first batch of available resources is invested at a high rate of return - the highest the business can possibly identify. The second batch of money will have to be invested at a somewhat lower rate of return since the best ideas have been taken by the first batch of resources already, and so on. The last batch of money invested may earn a rate of return that is only above the cost of capital. And finally, the end result is a declining MROCE curve as shown.


Return
%
Constant efficiency of capital
The scalable stage of a business
The diminishing
stage of a business
A diminishing MROCE curve
Cost of capital
Batches of money invested in the business

Source: author

The ROCE we normally talk about and companies report refers to the average of this curve - averaging the return on all batches of money invested. Obviously, the average is very useful information by itself. It tells us how efficiently the business has been converting resources into profit so far - but its limitation is that it only tells us the efficiency of the resources that have already been invested SO FAR. What is of equal importance to investors is the MROCE, which tells us how much incremental profit the business WILL generate when the next batch of resources are invested.

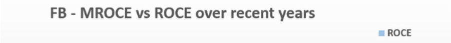
For investors, a dream business to invest in would be a business that enjoys a flat MROCE curve as shown by the solid blue line. This would be a business that is perfectly scalable. A business that earns a consistent and stable profit for every batch of resources invested. However, such a business is really only a dream business. I mentioned earlier that diminishing returns act like gravity on all economic activities - because they really do. There has been no business (at least not so far in human history) that can keep growing while at the same time maintaining a constant return on capital. At some point, gravity always catches up and the return begins to decline (as shown by the dashed blue line).

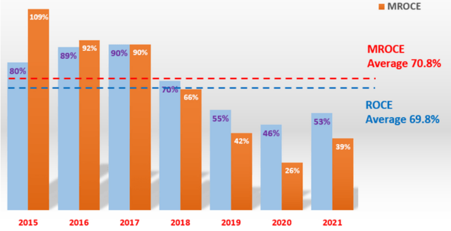
FB's MROCE

So for investors, the next best deal is to invest in a business that A) has a high and stable ROCE, and B) that is still in the scalable stage (the gravity of diminishing return has not caught up yet). And as shown in the next chart, FB seems to be such a business at such a stage.

This chart shows the MROCE and ROCE for FB over recent years. The ROCE data are the same as those shown in the previous section. The MROCE data are estimated by the following steps. First, the capital employed was calculated for each year. Second, the earnings were calculated each year. Third, then the incremental of capital employed year over year was calculated. Similarly, the incremental earnings year over year were also calculated. And finally, the ratio between the incremental earnings and incremental capital employed was calculated to approximate the MROCE. During years when there were large fluctuations in either the incremental earnings or the capital employed, a multi-year running average was taken to smooth the fluctuations.

The results shown in the following chart show that at this stage, FB has been actually able to maintain an MROCE that essentially the same as the average ROCE so far. As seen, the ROCE has been on average 69.8% in recent years, and the MROCE has been on average 70.8%. And the small difference is most likely due to investable uncertainties in the financial data and rounding off errors. So this result suggests that FB has not reached the stage of diminishing return yet - gravity has not caught up yet. And if the current MROCE continues, FB will continue its high and consistent ROCE.



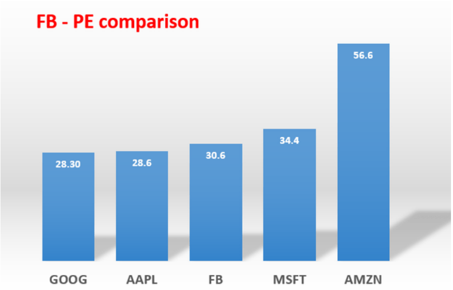


Source: author and Seeking Alpha data.

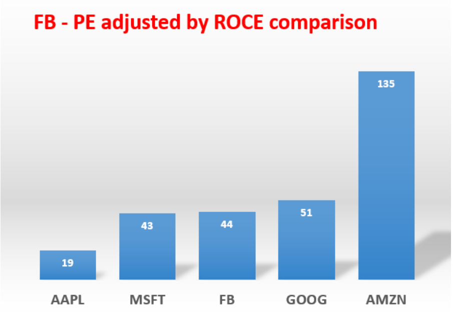
Valuation

After the above discussion of its profitability sustainability, let's look at the valuation. As can be seen from the following numbers in the chart, at its current price levels, FB's FW PE is about 30.6x, right in the middle of the FAAMG pack. It might be a bit on the overvaluation side. But given the elevated valuation of the overall market and its wide moat, such valuation is not in any bubble regime and can be justified for growth-oriented investors.

The next chart also compares FB valuation adjusted for its ROCE with its peers. It is not that meaningful to discuss valuation in isolation and without adjusting for the quality of the business. Therefore, this chart shows the valuation adjusted for ROCE by simply dividing the PE by the ROCE. As seen, its adjusted valuation is again right in the middle of the FAAMG pack.



Source: author and Seeking Alpha data.



Source: author and Seeking Alpha data.

Conclusion and final thought

This article analyzes FB with a focus on the most two important aspects of profit sustainability: ROCE and MROCE. These are the most two important metrics for analyzing a business because ROCE tells us how profitable the business has been or is SO FAR, and MROCE sheds insights into which direction the profitability is likely to go. The results from this analysis show that:

- The ROCE has been on average about 70% and compares very favorably against its peers.
- And the MROCE has been also on average 70% in recent years. So this result suggests that FB has not reached the stage of diminishing return yet -

gravity has not caught up yet. It is truly impressive for a business which has already captured about 60% of the total internet user worldwide to still maintain perfect scalability.

- As for valuation, FB is valued in the middle range of the FAAMG pack both in terms of absolute PE and also ROCE adjusted PE. Its valuation might be a bit on the overvaluation side in absolute terms. But considering its scale and potential for future scalability, such valuation can be justified for growth-oriented investors.

Thanks for reading! Look forward to your comments and thoughts!

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