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Title: Valuation approaches of social networking companies: Meta Platforms' valuation model

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Abstract

This paper is focused on valuation of publicly traded social media companies. In order to do so I have contacted various social media analysts and asked them what main metrics they consider when valuing a company. I used their insights to build my analysis and valuation model for the main social media company Meta Platforms' and compared my outcomes with market estimation provided by analysts I had conversations with.

KEYWORDS: Valuation, Social media firm, Free Cash Flow (FCF), Weighted average cost of capital (WACC), Equity value.

Resumen

Este documento está centrado en las técnicas de valoración y los datos que se utilicen para valorar las empresas de redes sociales que cotizan en bolsa. Para ello me he puesto en contacto con varios analistas de redes sociales y les he preguntado qué métricas principales consideran a la hora de valorar una empresa. Utilicé la información y los datos adquiridos para construir mi análisis y el modelo de valoración para una de las principales empresas de redes sociales Meta Platforms, y comparé mis resultados con las estimaciones del mercado proporcionadas por los analistas con los que contacté.

PALABRAS CLAVES: Valoración, Empresas de redes sociales, Flujo de caja libre, costo promedio ponderado de capital (CPPC), Valor de los recursos propios.

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Introduction

At the time of its initial public offering (IPO), Facebook, now Meta Platforms was expected to achieve a valuation ranging from $75 to $100 billion. At the time of its IPO, Facebook has been already worth a big amount despite its relatively small revenue of $3.7 billion in 2011.

But what data and metrics do banks and funds use to value social media companies? As banks and funds estimate enterprise values (EV) at face value, it is important to understand what data they use as a foundation for these valuations. In determining an EV for Meta Platforms', what data points and metrics do Barclays and Morgan Stanley find most critical? Do banks use the same metrics when valuing each social media company? After conducting in-depth research, I found some answers.

This paper offers insight as to how social media companies can be valued and what data is important to consider when valuing a social media company. Also, it can help us understand the different methods of valuation as well as apply these methods into practice using the case of Meta Platforms'.

The main objective of this paper is to learn about key value drivers of social media firms and apply the discounted cash flow valuation method for the case of Meta.

Structure of the Thesis

I structure the paper into three sections: In the first section, *Basic concepts of valuation*, I define the two main valuation methods: the discounted free cash flow valuation method and the relative valuation method. I explain which method is used more frequently and why analysts maintain this preference. I pay special attention to the discounted free cash flow method as it is the one, I focus on when valuing Meta Platforms in the following sections.

Next, I surveyed Meta's equity analysts, which helped me to identify the core value drivers for social media companies. The most frequently mentioned metric is the number of users. Especially in Meta's case, investors and media outlets tend to directly correlate its value with the size of the user base. I segment the data into 3 categories that are important to be considered when valuating Meta: advertisement capabilities, user loyalty/engagement, and new features/services/content.

In the second section, *Overview of Meta Platforms business analysis*, I analyze the business model. I explain which are the segments they focus on when reporting the financial results. I analyze their market presence and which companies they are competing with and why. Also, I was able to identify how the TikTok market entrance affected Meta Platforms' engagement rate.

In the second part of this section, I analyze the share price performance while comparing it with Meta's peers. We will see what happened to the price when the pandemic hit the market, why the price dropped by c.60% at the beginning of 2022 and how it recovered in less than 4 months. After various articles and surveys with equity analysts and investment banks managers I was able to identify the 12-month target price forecasts for Meta Platforms which represents a +44,96% increase from May 2022 to May 2023.

In the last part of this section, I analyze Meta's financial performance. I define the revenue growth rate trend for the last 5 years as well as EBITDA margin and compare it with its peers.

In the third section of this paper, *Valuation*, I apply DCF method and multiples method to practice, especially focusing on DCF model, which is one of the most efficient, but at the same time one of the most complex valuation methods in finance. We will go through all the calculations needed to identify the cash flows of the company and its discounting rate (WACC).

I predict the cash flows for the following 9 years and discuss why I assume that revenue growth will decline almost by half in Full Year 2022 and 2023, while capital expenditure will increase by c.60% in the following 3 years, how it will affect the Unlevered Free Cash Flow in Full Year 2022 and finally what Meta can do to improve its Cash Flow.

In the last part of this section, I make all the needed calculus to get the equity value and compare it to the market expectations.

I conclude the paper with a discussion about my findings, adding in information gathered from research reports and from the conversations I had with analysts and directors at banks and venture capital funds. This framework will offer a comprehensible explanation of the primary data used in social media valuation and will clearly illustrate the deviation from industry-wide conventional metrics.

Acknowledgments:

I. BASIC CONCEPTS OF VALUATION

1.1 Theoretical Overview of Valuation Methods

From all the valuation methods that exist, in this paper, I will mainly focus on two that are more frequently used by equity analysts. The first, discounted cash flow (DCF) valuation, relates the asset's value to the present value (PV) of expected future cash flows on that asset. The second, relative valuation, estimates the value of an asset by looking at the price of a comparable asset, which is often related to key performance metrics such as profit, cash flows, book value, or sales.[1]

Depending on the approach we use and the assumptions about parameters, we can obtain different results.

In this chapter, we will go through these two methods (DCF and relative valuation), especially focusing on the DCF method as it is the one that requires deeper analysis and the one that will be mainly used for Meta's valuation in later chapters.

1.1.1 Discounted Cash Flow Method

Discounted cash flow valuation has been one of the most robust methods. Although other methods are frequently used today, such as relative valuation, it is believed that DCF is the basis for other methods. Therefore, understanding the basics of discounted cash flow model is also very important to properly apply other methods.

As mentioned above, the DCF method estimates the intrinsic value of an asset by discounting its future cash flows. Therefore, it is important to forecast future cash flows as accurate as possible and apply the correct discount rate.

It's s easier to use the DCF model for companies that generate positive cash flows having a predictable future and provides an appropriate risk proxy for estimating discount rates. However, in some cases, for example, in distressed, cyclical, restructured, or private firms the implementation of DCF could be challenging[2]

1.1.1.1 Free Cash Flow

As the term DCF already explains above, it discounts the cash flows. Generally speaking, there are two methods that can be used for valuation, the free cash flow to the firm and the

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[1] Aswath Damodaran (2012), Investment Valuation, pg. 33
[2] Aswath Damodaran (2012), Investment Valuation, pg. 34

free cash flow to equity. The free cash flow to the firm (FCFF) is the cash flow that can be distributed to both the debt and the equity holders, whereas the free cash flow to equity (FCFE) is the remaining cash flow that can be distributed to investors after all the cash requirements for operations and debt-financing are met.

We can get slightly different values when discounting these two FCF. In case of FCFE, only the value of equity can be estimated at that point in time. However, when FCFF is used we are able to estimate the enterprise value as well, because with this we derive the total value in excess of operations. The FCFF is the predominant FCF used in this paper, as it is the most used in valuation practices as well. It can be calculated by the following formula[3]:

Earnings Before Interest and Taxes (EBIT) – Taxes = Net Operating Profit After Tax (NOPAT)
NOPAT + Depreciation and Amortization (D&A) – Capital Expenditures (CapEx) – Increase
in net working capital (NWC) = Free Cash Flow to Firm (FCFF)

First, we subtract taxes from the company's EBIT, providing a profit without requirements outside of the company's debt holders or investors (NOPAT). Next, we add to the profit the accounting amount of depreciation and amortization, this is done because the accounting tool of depreciating assets or amortizing resources does not reflect an actual cash outflow for that year. Then, we subtract from the NOPAT the capital expenditure that are accounted that year Similar to the D&A previously, although the capital expenditures most likely represent assets that will be used for, and written off in, several years, these expenditures do reflect an actual cash outflow in this year and should therefore be subtracted from the NOPAT.Lastly, we subtract the increase in net working capital (NWC), which is calculated as current assets minus the current liabilities. A higher NWC reflects a cash outflow and should therefore be subtracted. The resulting number reflects the free cash flow to the firm, which can be used for DCF-valuation[4].

1.1.1.2 Value of Equity and Firm discounted by their respective discount rate

After estimating the future cash flows, their current (present) value has to be given. This can be done by discounting it using the appropriate discount rate, which is the rate at which investors demand that the value would increase taken into consideration the risks involved in that investment.

We estimate the equity value by discounting the residual cash flow generated after paying all the company's operating and investment expenses, tax obligations, and debt service (interest payments and net debt repayment) by the cost of equity. Cost of equity is the rate

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[3] Aswath Damodaran (2012), Investment Valuation, pg. 35
[4] Corporate Finance Institute (CFI) – Free Cash Flow to Firm (FCFF)

of return investors require in exchange for owning the equity of a company[5]. In the following sections, I analyze how it can be derived using different models *(see section 1.1.1.4).*

The value of equity discounted by cost of equity can be obtained using the following formula:

Formula 1: Value of Equity in explicit forecasted period

$$\text{Value of Equity} \ = \ \sum_{t=1}^{t=n} \frac{\text{CF to Equity}_t}{(1+k_e)^t}$$

To double-check our computations, we use the following formula: Value of Equity = PV of the firm – Market value of debt

The enterprise value is obtained by discounting expected cash flows to the firm (i.e., the residual cash flows after meeting all operating, tax expenses and capital expenditure, but prior to any payments to either debt or equity holders) at the weighted average cost of capital (WACC).[6] WACC weights the different costs of capital into the overall cost structure of the company *(see section 1.1.1.5).*

Formula 2: Value of Firm in explicit forecasted period

$$\text{Value of Firm} \ = \ \sum_{t=1}^{t=n} \frac{\text{CF to Firm}_t}{(1+\text{WACC})^t}$$

As long as we use the same assumptions when forecasting the future cash flows, all of the above methods should provide the same estimated values.

1.1.1.3 Cost of Debt

The cost of debt is the return that a company provides to its debt holders and creditors. Different types of debt face different interest payments (costs), depending on their duration and source. Short term debt faces a little risk for the lender, and it requires a low-interest

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[5] Aswath Damodaran (2012), Investment Valuation, p.36
[6] Aswath Damodaran (2012), Investment Valuation, p.37

rate, however, long-term debt may face an interest rate that is significantly higher due to the higher risk.

Apart from that, the situation of the borrower is a factor that also highly influences the cost of debt. If a company is trusted and known as a stable and reliable borrower, the financing source will demand a relatively low-interest rate, from the other hand an unstable and volatile company may face high costs regarding their loan. Because the cost of debt can be subtracted from the taxable income, one should use the after-tax cost of debt as the debt input for the WACC resulting in the following cost of debt:

Formula 3: After-Tax Cost of Debt
$$Cost\ of\ Debt = \mathbf{rd} * (\mathbf{1} - \mathbf{t})$$

In which the rd is the pre-tax cost of debt, and the t is the tax rate.

Investors pay more attention to the cost of debt than the cost of equity, firstly because cost of debt reflects the default risk of the company, and secondly because it reflects the level of interest rates in the market.[7]

1.1.1.4 Cost of Equity

The cost of equity is the return that a company requires to decide if investment meets capital return requirements or not.[8]

It can be derived using different models. The most frequently used model is the Capital Asset Pricing Model or CAPM introduced by Sharpe in 1964[9]. The three factors used in this model are the risk-free rate, the market risk premium, and the β (Beta).

- The **risk-free rate** is the rate that every investor will get even when they invest in the least liable asset on the market.
- The **market risk premium** is the combined risks to which the asset is exposed and which increase the fallibility of this investment.
- The **β (Beta)** reflects the sensitivity of the cash flows to macroeconomics market movements. The β represents the shift of the economy, and therefore the β of the economy is by definition equal to 1. Companies that are highly sensitive to changes in the economy, such as construction firms or luxury goods will have a β that is larger than 1, when the less cyclical companies will have a β below 1. These less sensitive stocks are the less they will lose when the industry doesn't perform well, and will

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[7] Corporate Finance Institute (CFI) – Cost of Debt
[8] Investopedia, Cost of Equity
[9] Aswath Damodaran (2012), Investment Valuation, pg 94

gain less when the industry is prosperous. The formula for the CAP-Model can be written as shown below:

Formula 4: Cost of Equity

$$Cost\ of\ Equity = rf + \beta\ (rm - rf)$$

Both the cost of debt, and the cost of equity are included in the weighted average cost of capital (WACC), where the combined cost of financing can be calculated.

1.1.1.5 The WACC

The main objective of the 'Weighted Average Cost of Capital' is to weigh the different costs of capital into the overall cost structure of the company[10]. It is reflected in the following formula:

Formula 5: Weighted Average Cost of Capital

$$WACC = \frac{Equity}{Debt + Equity} * Cost\ of\ Equity + \frac{Debt}{Debt + Equity} * Cost\ of\ Debt$$

In the first half of the equation, the cost of equity is multiplied by the relative size of equity as a financing source, after which the cost of debt is multiplied by the relative size of debt as a financing source. Lastly, these two parts are summed together to get the Weighted average cost of capital.

With the knowledge of previous sections in this chapter, we can refine the basic formula and implement the cost of debt and CAPM formulas, which provides us with the following equation:

Formula 6: Weighted Average Cost of Capital

$$WACC = \frac{E}{D + E} * \left(Rf + \beta(rm - rf)\right) + \frac{D}{D + E} * rd * (1 - t)$$

As we mentioned above, in the WACC approach, we reflect the effect of debt in the discount rate, the cash flows discounted are predebt cash flows and do not include any of the tax benefits of debt (since that would be double counting)[11].

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[10] Aswath Damodaran (2012), Investment Valuation, pg 301
[11] Investopedia, Weighted Average Cost of Capital (WACC)

The tax shield (1-t) only affects the portion of the debt. The WACC serves as the discount rate for the FCF, and it has to be determined in the explicit forecast period, as for the terminal value which will follow.

The main challenge in estimating the WACC is that it is not yet known which capital structure the company will have in the future. Even though Modigliani & Miller, in 1958, advocated that capital structure does not affect business, [12] this is different in valuation.

As we mentioned in the previous sections, both the cost of equity and the cost of debt, as well as the corresponding WACC, may vary widely depending on internal and external circumstances of the company.

1.1.1.6 Explicit Forecasted Period

The first step in the DCF calculation is to project the value generated in the coming period. The rule of thumb here is that the explicit forecasted period should be long enough that the company will have reached stable cash flows by the end of the projected period[13]. This means that the length of the initial forecasted period depends on the evolution of the investment cycle of the company. Because the end of the explicit forecasted period coincides with the start of the following terminal period, it is important that investments have matured, and the years afterward do not differ much in the way the free cash flow is composed. Usually, this period is 5 to 7 years[14].

In theory, it is possible to not use a terminal value by forecasting a very large period, however, this will encounter skeptics regarding the viability of an explicitly forecasted year which can be multiple decenniums from now because the term 'explicit' means that there is an amount of certainty in it.

1.1.1.7 Terminal Value

After the explicit forecasted period, the DCF-model continues with the terminal value period. That means that the company will return to a stable cash flows after n years in which each FCF will be determined. This following period is called 'terminal' or 'continuing' and it can have an unlimited duration. This is mainly based on a known financial management principle that states that generally companies have an unlimited lifetime, also called going concern.

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[12] Capital Structure Irrelevancy Theory, Modigliani & Miller 1950s
[13] Levin & Olsson (2000), Terminal Value Techniques in Equity Valuation
[14] Levin & Olsson (2000), Terminal Value Techniques in Equity Valuation

The terminal value represents the value of the firm once the valuation period is over, which equals the present value of all future cash flows discounted to the present moment.

The terminal value is determined considering that the second time period has an unlimited lifetime, and during this period, the cash flows which can be constant or growing will be obtained, depending on small constant growth rate "g". Therefore:

Formula 7: Terminal Value

$$Present\ Value\ n = \frac{Free\ Csh\ Flow\ n - 1}{r - g}$$

1.1.2 Relative Valuation

Relative valuation is one of the most widely used valuation methods in the market[15]. This method values an asset-based company by comparing its price to the prices of other similar assets. The relative valuation is also called multiple valuations, since it often compares the valuation of an asset and its benchmark group based on some multiples. One of the implications of this method is that it can be used to value a company by comparing its ratios to the industry average. Unlike DCF, which is based on a company's future cash flows, multiple valuations are based on the market under the assumption that the market on average prices stocks correctly, despite possible errors in the valuation of individual shares. If a company's multiple is lower than its peers or industry's average, it is considered to be undervalued, and vice-versa.

The right choice of multiples and similar enterprises is critical in relative valuation. Price to earnings, price to sales, and price to book value ratios are some of the most utilized multiples in relative equity valuation. There are also many multiples used to obtain the enterprise value of a firm.

Valuing the company's shares using multiple PER (Price to earnings)

Formula 8: Price per Earnings Ratio

$$PER\ earnings = \frac{P}{EPS}$$

Where P is current stock price of a share and EPS are earnings per share, which is calculated by dividing Net earnings by number of outstanding shares.

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[15] Aswath Damodoran (2012), Investment Valuation, pg 43

Formula 9: Earnings per Share

$$EPS = \frac{Net\ Earnings}{Outstanding\ shares}$$

VALUE OF A SHARE (Value of equity) = PER comparable x EPS firm

VALUE OF A TARGET FIRM = PER comparable x Net earnings of a target company

Valuing the company's shares using Price Sales Ratio

Formula 10: Price Sales Ratio

$$PSR = \frac{P}{SPS}$$

VALUE OF A TARGET FIRM = PSR comparable x SPS company x N

Where SPS are Sales per share and N is the number of outstanding shares

Valuing the company's shares using Price Book Value Ratio

Formula 11: Price Book Value Ratio

$$PVBR = \frac{P}{BVS}$$

Where BVS is book value per share

VALUE OF A TARGET FIRM = PVBR comparable x BVS company x N

Growth rates in earnings and payout ratios are frequently used in relative valuation based on fundamentals. This method is logically equivalent to using the DCF model, which requires the same set of data and assumptions and normally results in the same outcome. It allows analysts to illustrate the relationship between a firm's characteristics and its multiples, as well as how they are linked (e.g., the relationship between ROE and price to book ratio)

The relative valuation method is easy-to-use and is less time-consuming. It can also be used in conjunction with other valuation methods. Multiple valuations, on the other hand, are easily biased due to their simplicity. An analyst, for example, can form a peer group or choose a way to confirm its biased value perception regarding the company being valued.

1.2 Valuation in the context of social media

1.2.1 Core value drivers

In order to identify the key points investors use to evaluate a social media company, I sifted through numerous articles on various social media companies and spoke with analysts and fund managers (please see appendix D). Although this is not a fully proven strategy, I was able to outline the most basic metrics that a typical investor focuses on.

I connected with equity analysts mainly though LinkedIn and asked them the following questions:

1. "What are the key metrics you consider when valuing a social media company?"
2. "What are the metrics a typical investor focuses on when deciding whether to invest in a social media company or not?"
3. "Do banks use the same data points when valuing each social media company?"
4. "What data you find most critical to use in case of Meta Platforms?"
5. "Which is the main source of monetization and profitability for Meta?"

The most frequently mentioned data point for most social media companies is the number of users. Especially in Meta's case, investors and media outlets tend to directly correlate its value with the size of the user base. Facebook as a market leader was the first social network to achieve over one billion users and currently sits at more than 2,85 billion monthly active users. This is a signal for investors about the company's success.

In 1999, when the Internet market flourished, valuing companies was based on the volume of the customers base, without considering their potential of generating profits. However, nowadays, many equity analysts would rather focus on data other than its user base when evaluating the company.

I segment the data into 3 categories which are important to be considered when valuating Meta: advertisement capabilities, user's loyalty/engagement, and new features/services/content. Almost all the analysts outlined the importance of the ad power as the main source of profitability for Meta is advertisements. With over 1,9 billion daily active users (DAU's) that interact with other users in form of exposing their likes, dislikes, and current moods, Meta managed to gain a rich user base data that is very attractive to advertisers. As such, when considering the company's value, banks look at the social network's ability to generate sustainable profits through advertisements.

According to Meta's 2021 full-year results presentation, by the end of Q4 advertisement forms c.97%[16] of total revenues (Chart 1) and its contribution to it increased by +c.57% in the last 2 years (Chart 2).

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[16] Circa 97%

Chart 1: Segment Results (in Millions)

	Q4'20	Q1'21	Q2'21	Q3'21	Q4'21	
Advertising	$ 27,187	$ 25,439	$ 28,580	$ 28,276	$ 32,639	c.97%
Other	168	198	192	176	155	
Family of Apps Revenue	$ 27,355	$ 25,637	$ 28,772	$ 28,452	$ 32,794	
Reality Labs Revenue	717	534	305	558	877	
Total Revenue	$ 28,072	$ 26,171	$ 29,077	$ 29,010	$ 33,671	

Source: Meta Platforms 2021 FY results presentation

Chart 2: Advertisement Revenues by User Geography (in Millions)

Source: Meta Platforms 2021 FY results presentation

Aside from advertising, bank analysts also focus on the company's consumer's loyalty/engagement and its creation of new features. The consumer's loyalty is an intangible asset, and it's quite challenging to value. Analysts feedback shows that it is measures by behavioral outcome – the frequency of interaction.

Data shows that Facebook's engagement rate decreased during the last 2 years and currently sitting around 0.13%, which compared with the industry isn't the higher (we will go more in-depth in the next chapter).

The last data category fund managers emphasized is related to new features. The ability to develop new features is always favorable for the companies because it helps to involve more users. The more involved the users are, the more opportunities there are for monetization. Some examples of new Meta's features in 2021 are: Reels, Shop Tab, "Your activity" features, Streaming, etc. Such innovations increase users' engagement and provide a good base for future monetization.

II.   OVERVIEW OF SOCIAL NETWORKING COMPANIES: META PLATFORMS BUSINESS ANALYSIS

2.1 Meta Platforms business analysis

According to Meta Platforms report 2021 its main mission is "to build technology that helps people connect, find communities, and grow businesses". Their products help people around the world to connect and share moments with friends and family through mobile devices, personal computers, virtual reality headsets, and in-home devices. Moreover, using their products people learn about what is going on in the world around them, share their opinions, ideas, photos, and video.[17]

Meta mainly focuses on two segments when reporting their financial results: Family of Apps (FoA) and Reality Labs (RL). Almost all the revenue they generate for FoA is from selling advertising placements to marketers. They use ads on their platforms to help marketers to reach more people based on different factors like age, gender, location, interests, and behaviors. Marketers purchase ads that can appear in multiple places including on Facebook, Instagram, Messenger. RL generates revenue from sales of consumer hardware products, software, and content.[18]

Meta describes its platforms as:

"Family of Apps
- **Facebook.** Facebook helps people to build community and bring the world closer together. It's a place for people to share life's moments and discuss what's happening, build relationships, discover and connect to interests, and create economic opportunity. They can do it through News Feed, Stories, Groups, Watch, Marketplace, Reels, Dating, and more.

- **Instagram**. Instagram brings people closer to the people and things they love. Instagram Feed, Stories, Reels, Video, Live, Shops, and messaging are places where people and creators can express themselves and push culture forward through photos, video, and private messaging, and connect with and shop from their favorite businesses.

- **Messenger.** Messenger is a simple yet powerful messaging application for people to connect with friends, family, groups, and businesses across platforms and devices through chat, audio, and video calls, and Rooms.

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[17] Meta Platforms' Annual Report 2021, pg 7
[18] Meta Platforms' Annual Report 2021, pg 7

- **WhatsApp.** WhatsApp is a simple, reliable, and secure messaging application that is used by people and businesses around the world to communicate and transact in a private way.

Reality Labs

- **Reality Labs.** Reality Labs' augmented and virtual reality products help people feel connected, anytime, anywhere. Meta Quest lets people defy distance with cutting-edge VR hardware, software, and content. Facebook Portal video calling devices help friends and families stay connected and share the moments that matter in meaningful ways. (Report, 2021, p. 7)"[19]

Meta is about innovation, rapid change, and technologies. They compete with companies which provides connection, sharing, discovery, and communication products and services to users online, as well as companies that sell advertising to businesses looking to reach more consumers. They face significant competition in every aspect of its business, including companies that facilitate the ability of users to share, communicate, and discover content and information online or enable marketers to reach their existing or prospective audiences, including, for example, Alphabet (Google and YouTube), Amazon, Apple, ByteDance (TikTok), Microsoft, Snap (Snapchat), Tencent (WeChat), and Twitter.

2.1.1 Competition

"Meta competes to attract, engage, and retain people who use its products, to attract and retain businesses who use its free or paid business and advertising services, and to attract and retain developers to build compelling mobile and web applications that integrate with Its products. They also compete with companies that develop and deliver consumer hardware and virtual and augmented reality products and services. As they introduce or acquire new products, as their existing products evolve, or as other companies introduce new products and services, including as part of efforts to develop the metaverse, they may become subject to additional competition. (Report, 2021, p. 7)" [20]

Meta main competitors include Twitter, Pinterest, LinkedIn, TikTok, YouTube, Tencent etc. In the following sections we will go in deeper analysis and analyze the publicly traded ones.

2.1.2 Market presence

Meta Platforms is a company with a dominant presence in our digital lives. Around 3.4 billion people worldwide used at least one of its apps at the end of 2021. Based on Meta statements, the company looks like a great business with double-digit growth.

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[19] Meta Platforms' SEC Filing 2021, pg 7
[20] Meta Platforms' SEC Filing 2021, pg 7

Meta mainly relies on partnerships with third-party companies to offer content on its platforms. In the case of Facebook, for example, many of the games are created by third parties who pay Facebook to advertise their product on the site in exchange for data about the users who sign up for these games.

2.1.3 Industry analysis

As per industry analysis, Tik Tok is the most engaging social media platform at the moment, having an average engagement rate of 5,96%, which r is calculated as the sum of likes, comments and shares on the post divided by the total number of followers that profile has. The result is then multiplied by 100.

Formula 12: Engagement rate

$$Engagement\ rate = \frac{(likes\ +\ comments\ +\ shares)/\ posts}{number\ of\ followers}\ x\ 100$$

Although when talking about video platforms such as Tik Tok the number of views can be used instead of followers, I decided to apply the first formula for each company to have the same base of comparison when benchmarking.

In 2021 the Facebook (main Meta Platforms company) average engagement rate was 0.13%, while Instagram and Twitter reached 0.83% and 0.05% respectively (Chart 3)

Chart 3: Social Media Engagement Rates (By Followers)
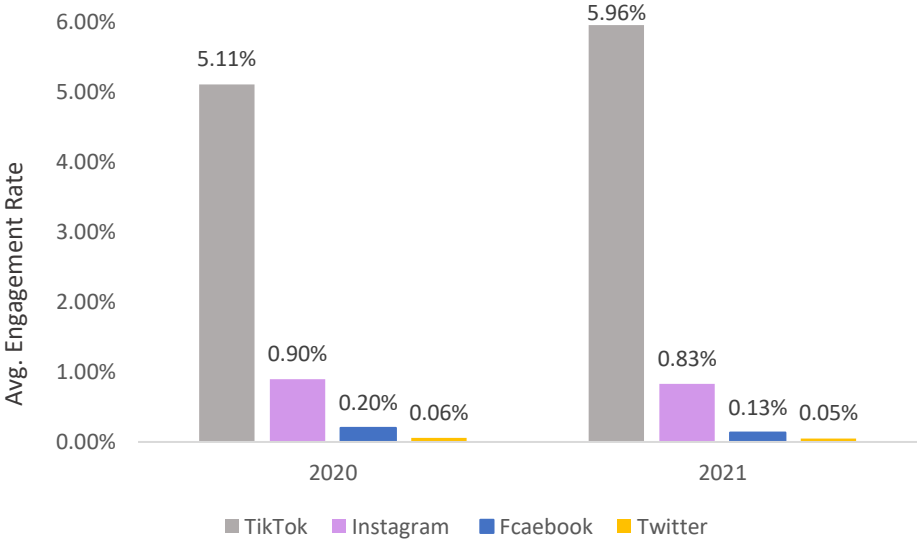
Source: Self-elaboration graph based on self-estimation data using the formula above

The main reason that influenced the fluctuation of the engagement rates of these social media companies is the fact that many users have shifted their attention towards newer social media platforms like TikTok, therefore it has automatically impacted the engagement on other social networks, causing significant drops.

2.2 Stock price performance analysis (vs peers)

2.2.1 Meta Platforms stock performance

Chart 4: Meta Share Price Performance (LTM)
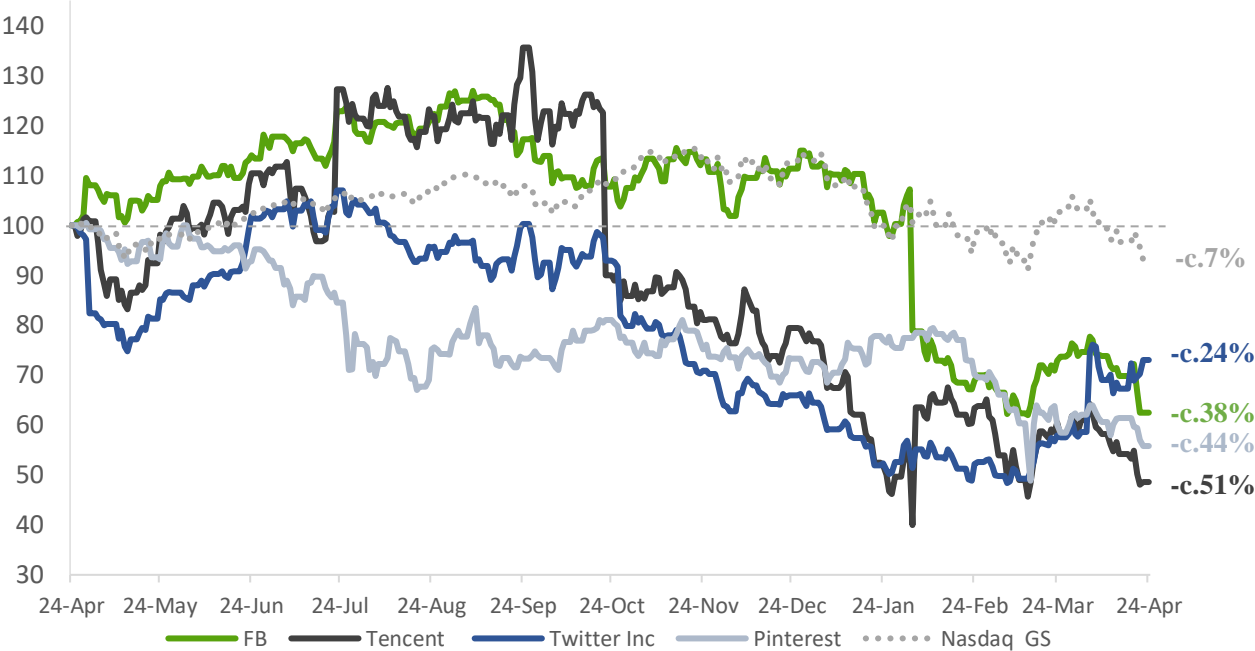
Source: Self-elaboration

Using the stock data provided by Yahoo Finance and Bloomberg, I compared the share price performance of Meta's Platforms (FB) with its main peers during the last twelve months (Chart 4) including Tencent, Twitter, and Pinterest. The time horizon I focused on was April 24, 2021, - April 24, 2022 (12 months period).

Meta Platforms' (-c.38%) stock had a relatively good performance during the last 2 years. After falling below 150$ in March 2020, the share price recovered and was performing even better, with the highest price of all time in May of that year. In 2021 the company made multiple new all-time highs.

But since September 2021 its stock has declined by 48% from its peak of $384 to below $200.

January 5th, 2022, Fed commented on the US 10yr bond yield increase which drastically affected companies that are listed in the market, including Meta Platforms. In just one month its share price went from $338 (January 3rd) to $211 (February 28th) and continued falling with the lowest peak at $175 (April 27th).

The share price slowly started to recover since Meta reported its financial results for the first quarter ended March 31, 2022. "We made progress this quarter across a number of key company priorities, and we remain confident in the long-term opportunities and growth that our product roadmap will unlock,"[21] said Mark Zuckerberg, Meta founder and CEO, "More people use our services today than ever before, and I'm proud of how our products are serving people around the world"[22].

Meta Yahoo Finance analysts are offering 12-month price forecasts for Meta Platforms with a median target of 285.00, with the highest estimate of 553,00 and the lowest estimate of 185,00. The median estimate represents a +44,96% increase from the last price of 196,60 (June 8th).

Chart 5: 12-month share price forecast for Meta Platforms'

Source: 47 Analysts Forecasts, Yahoo Finance

The current consensus among 54 polled investment analysts is to buy stock in Meta Platforms Inc. This rating has held steady since June, when it was unchanged from a buy rating.

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[21] Meta Reports First Quarter 2022 Results, Press Release, pg. 1
[22] Meta Reports First Quarter 2022 Results, Press Release, pg. 1

Chart 6: Investment analyst's stock rating for Meta Platforms'
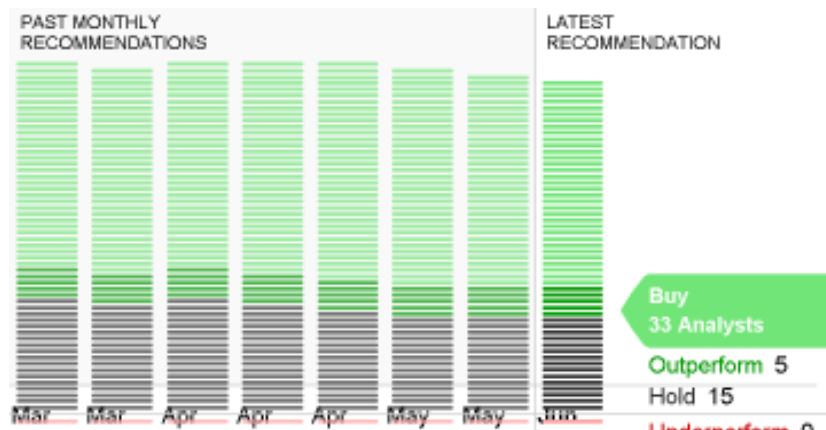
Source: 54 investment analysts rating, Yahoo Finance

2.2.2 Peers' stock performance

As for the performance in comparison to peers, Meta Platforms' stock had a relatively good performance during the last year. Its share price reflected a decrease of -c.38% from April 2021 to April 2022, mainly due to the reasons mentioned above. Tencent has lost roughly half of its value (-c.51%) while Pinterest's share price dropped -by c.44%.

As for the Twitter stock performance: despite the fact that Tesla CEO Elon Musk has offered to buy the company for about $44 billion[23], the Twitter stock is still down 11% this year and 24% compared with last year.

It seems that investors realized that social media stocks are essentially just media stocks. This means that despite their higher growth rates, social media companies are still subject to shifts in advertising budgets and user behavior, just like traditional media firms such as television networks and newspapers.

Apart from the macroeconomic reason mentioned above, competition is an issue, too. Social media companies live and die by their user growth metrics. Privately held TikTok now has all the momentum, particularly with the younger Millennial and Gen Z subscribers that advertisers crave, making a big impact on the industry performance.

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[23] The Wall Street Journal

2.3 Analysis of financial performance

Interest rate hikes are creating volatility for Meta Platforms despite strong free cash flow generation. Currently, being priced at almost no growth, it is growing at double digits. With the prevailing stock price at $198, meta expects 3-11% revenue growth for the next years with each year discounted at its cost of capital at 8,8%[24]. However, Meta Platforms has been growing its revenue at a CAGR of 33,7% for the past 5 years. The graph below illustrates Meta Platforms' growing revenue trend.

Chart 7: Meta Platforms' growing revenue trend
(in billion)
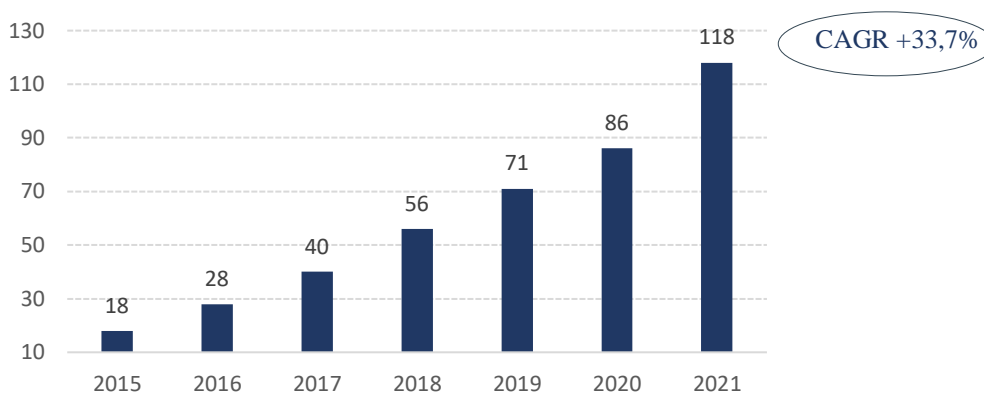
Source: Self-elaboration

This represents a very attractive buying opportunity since it appears to be a mispricing due to the current macroeconomic climate. I expect revenue to still be growing from the stickiness of the product and having a wide moat in the social media space. There is also a catalyst for high growth in the coming years, which is the ecosystem surrounding the Metaverse platform, devices, and economy. By having its own platform, the social media giant will be free from Apple's privacy restrictions. The independent platform will also bolster ads revenues growth beyond third-party platforms.

In terms of the growth rate per year, 2020 growth was the slowest at 21,6% which was due to most advertisers' budget cuts. The subsequent year 2021 saw a return to high growth at 37,2%, which was a very impressive growth unmatched by any other large software companies.[25]

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[24] See section 3 for further information
[25] CSI Market

Chart 8: Meta Platforms' Revenues Growth Rate Trend
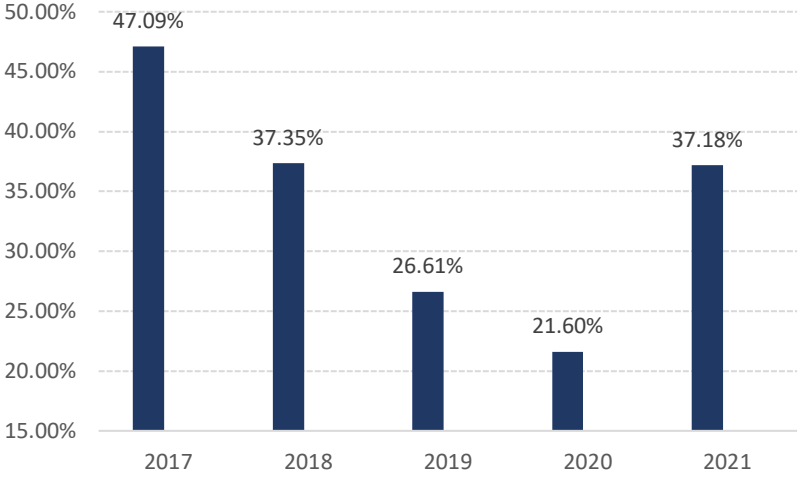
Source: Self-elaboration

Comparing Meta Platforms' 37.2% growth rate to other tech companies in 2021, it is second only to Tesla, which was growing at 50.4%.

Chart 9: Meta Platforms' Growth rate is 2nd only to Tesla in 2021[26]
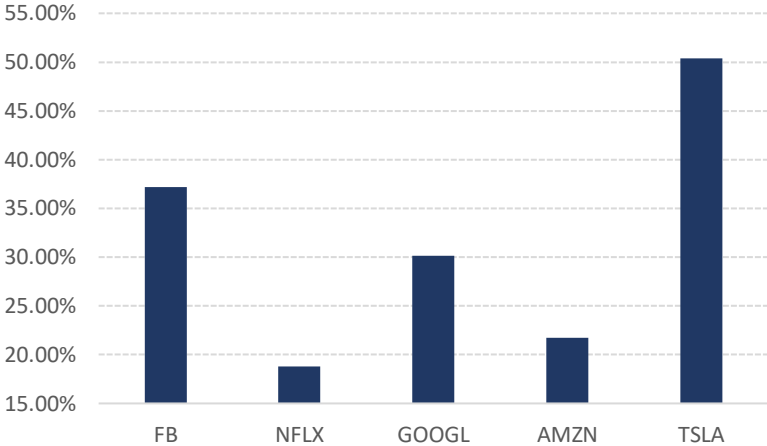
Source: Self-elaboration

Speaking of margins, Meta Platforms commands a hefty 43.50% EBITDA margins (FY '21), the largest in the peer group and amongst Big Tech. In Q1 2022, EBITDA Margin was 38.

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[26] Source: Annual Financial Statements

III.   VALUATION

3.1 Meta valuation by multiples

The method of multiples of comparable companies consists of valuing a company, in order to quantify its market value, by looking at a group of similar companies that could be compared through a given variable.

First, I have chosen a "peer group" for comparison. When selecting a company, I took into consideration the following requirements:

1. To be stock listed
2. To belong to the same industry as a target firm
3. To operate in the same geographical zone, or worldwide in our case
4. To sell a similar mix of products, or provide similar services
5. To have similar competitive position in the market
6. To have similar volume of activity as well as total assets, sales, profits
7. To show similar profitability (operating margins)
8. To have similar expectations regarding the growth of activity and profits
9. To have similar management style

Although it is difficult to find a sufficiently large group of the companies with all these requirements, as some important peers of Meta are not stock listed, like TikTok and YouTube, for example, I will focus on 3 main peers that are more closed to Meta Platforms' in terms of ratios and are stock traded: Twitter, Pinterest, Tencent.

Next step is to choose and calculate multiplies. The multiplies express the relationship between the market price (or analyst's valuation), and some financial indicators. The values of multiplies can be used from last year's financial statements (current), the last four quarters (trailing), or some future period (forward).

I will mainly focus on Price to earnings ratio (PER), Price- to-book ratio (PBVR), and Price-to-sales ratio (PSR).

In order to compute the value of Meta I calculated the average PER, PSR, and PBVR of the companies mentioned above and multiplied it by the corresponding indicators of Meta.

VALUE OF META = PER comparable x Net earnings of Meta

VALUE OF META = PSR comparable x SPS Meta x Number of shares

VALUE OF META = PVBR comparable x BVS Meta x Number of shares

Chart 10: Meta Peers multiplies

Multiples Approach			
Name	**PER**	**PSR**	**PBVR**
Tencent	16,0x	5,7x	4,1x
Twitter	152,0x	5,8x	4,9x
Pinterest	39,7x	5,0x	4,1x
Average	69,2x	5,5x	4,4x
Median	39,7x	5,7x	4,1x
Meta Platforms' Value	$ 595 573	$ 539 365	$ 452 945

Meta Platforms' Value		
Net earnings of a target firm	$ 37 340	(in million)
Book value share	45,4x	
shares outsnading	2290	(in milion)
Sales per share	$ 43	
EBITDA	$ 52 050	(in milion)
Revenues	$ 119 670	(in milion)
EPS	$ 43	

Source: Data taken from Yahoo Finance as of June 2022

In PSR and PBVR case I use the average, but sometimes the average isn't that good mainly because it accounts for outliers, so if one of the companies we choose has a very high P/E ratio then it's going to bring the average too high as well, as we can see in the table above in the case of Twitter. In this case I only used the PER of Tencent which is more closed to Meta terms of P/E ratio (Chart 11).

Chart 11: Comparison Meta, Tencent, Twitter, and Pinterest

(in billion)	Meta	Tencent	Twitter	Pinterest
Market Cap	458,32	465,03	29,03	12,65
EV	428,48	473,06	29,4	10,18
Gross Profit	95,28	245,93	3,28	2,05
Revenue	119,67	560,29	5,24	2,67
Revenue Growth	6,60%	0,10%	15,90%	18,50%
Revenue per share	$42,98	$58,77	$6,61	$4,12
Gross Margin	31,20%	4,77%	4,27%	12,48%
Operating margin	36,69%	19,89%	1,77%	14,77%
Net Income	37,34	200,47	0,2	0,3
EBITDA	52,05	164,09	0,5	0,4
Trailing P/E	12,8x	16,0x	152,0x	39,7x
Forward P/E	14,1x	28,1x	41,7x	20,8x
P/Sales	4,0x	5,7x	5,8x	5,0x
P/Book	3,7x	4,1x	4,9x	4,1x
EV/Revenue	3,6x	0,9x	5,6x	3,8x
EV/EBITDA	8,2x	2,1x	29,5x	27,0x
BV/share	$45,40	$81,55	$7,75	$4,68

Data taken form Yahoo Finance

Source: Yahoo Finance

After making all the calculus the Meta equity value resulted in $595 Billion using the PER multiple, $539 Billion with PSR multiple, and $452 Billion with PBVR multiple. Resulted average value using the multiples approach is $529 Billion, while the market currently values Meta-Platforms' at around $537,53 Billion.

3.2 Meta DCF model

The Free Cash Flow to the Firm (FCFF) represents the funds that are available to all the company's financing providers (shareholders and banks or other financial creditors). Such funds may therefore be used in:

o   Pay interest and repay principal of loans
o   Increase the cash balance or other investments
o   Pay dividends or repurchase shares

In the case of Meta, it is calculated as follows:

Revenues

-Cost of Goods sold

=**Gross Profit**

+ SG&A (Selling, general and administrative expenses)

+ Other accounting expenses

= **EBITDA** (Earnings Before Interest Tax Depreciation and Amortization)

- D&A (Depreciation & Amortization)

= **EBIT** (Earnings Before Interest & Taxes)

-Taxes

= **Adjusted EBIT**

+ D&A

- Capital Expenditure

+ Change in WC (Working capital)

= **Unlevered Free Cash Flow of the com**

Chart 12: Meta Platforms Free Cash Flow Calculation for 2018-2021

Income Statement (USD)	2018	2019	2020	2021
Revenues	55 838	70 697	85 965	117 896
Cost of goods sold	9 355	12 770	16 692	22 649
Gross Profit	46 483	57 927	69 273	95 247
SG&A, ex. Amortization	11 297	20 341	18 155	23 872
Other Expenses	10 273	13 600	18 447	24 655
EBITDA	24 913	23 986	32 671	46 720
Depreciation & Amortization	4 315	5 741	6 862	7 967
EBIT	20 598	18 245	25 809	38 753
Taxes (Effective Tax Rate)	3 249	6 327	4 034	7 914
Adjusted EBIT	17 349	11 918	21 775	30 839
Plus: Depreciation & Amortization	4 315	5 741	6 862	7 967
Less: Capital Expenditures	-13 915	-15 102	-15 115	-18 567
(Increase) Decrease in working capital		5 110	-2 754	1 068
Unlevered Free Cash Flow		7 667	10 768	21 307

Note: data taken from Meta Full Year results presentation (Income Statements)
Source: Self-elaboration

Once the Free Cash Flow has been calculated, it is necessary to take into account possible assets not reflected therein and possible hidden liabilities.

Working capital, which is represented by the difference between current assets and current liabilities without financing cost.

From data available on Meta's Balance Sheet, I computed current assets by adding accounts receivable, prepaid expenses, and other current assets. Following the same structure, I computed the current liabilities by adding accounts payable, partners payable, accrued expenses, and other current liabilities.

Next, I computed the change in working capital using the following formula:

Formula 13: Change in Working Capital

Change in WC year x = WC (year x) – WC (year x-1)

Chart 13: Meta Platforms' Working Capital 2018-2021

Working Capital	2018	2019	2020	2021
Current Assets	9 366	11 370	13 716	18 519
Current Liabilities	6 870	13 984	13 576	19 447
Working Capital	2 496	-2 614	140	-928
Net Working Capital Turnover	22,4	-27,0	614,0	-127,0

Note: data taken from Meta Full Year results presentation (Income Statements)
Source: Self-elaboration

In the following step and based on the data provided above, I made some assumptions that helped me to see the trend in profits and operational efficiency which serves as a good start to predict Meta performance for the next 5-10 years

$$\textbf{Sales growth (year x)} = \frac{Revenue\ (year\ x) - Revenue\ (year\ x-1)}{Revenue\ (year\ x-1)}$$

$$\textbf{COGS as \% of sales} = \frac{COGS\ (year\ x)}{Revenues\ (year\ x)}$$

*Same formula applies for SG&A, Capex and other expenses as % of sales

$$\textbf{Tax Rate} = \frac{Taxes\ (year\ x)}{EBT\ (year\ x)}$$

$$\textbf{Current Assets/Liabilities as \% of Revenue} = \frac{Current\ assets\ or\ liabilities}{Revenue}$$

$$\textbf{Depreciation as \% of Capex} = \frac{Depreciation}{Capex}$$

Chart 14: Meta Platforms' assumptions

Assumptions	2018	2019	2020	2021
Sales growth		27%	22%	37%
COGS as a % of sales	17%	18%	19%	19%
SG&A as a % of sales	20%	29%	21%	20%
Other expenses as a % of sales	18%	19%	21%	21%
Tax Rate	16%	35%	16%	20%
Capital Expenditures "CapEx" (amount)	13 915	15 102	15 115	18 567
Capital Expenditure as a % of Revenue	25%	21%	18%	16%
Depreciation (amount)	4 315	5 741	6 862	7 967
Depreciation as % of CapEx	31%	38%	45%	43%
Current Assets % Revenue	17%	16%	16%	16%
Current Liabilities % Revenue	12%	20%	16%	16%

Note: data taken from Meta Full Year results presentation (Income Statements)
Source: Self-elaboration

3.3 Determining the discount rate (WACC)

Once I calculated the Free Cash Flows expected for each year, I had to estimate their present value. The rate used to discount future cash flows is the cost of capital. If the discount rate is not accurately determined, the present value of the future cash flows will be too high or too low, and therefore also the valuation.

In the case of Free Cash Flows, the cost of capital consists of two large items:
- The cost of capital provided by the shareholders or panthers of the company, and
- The cost of capital provided by the company's financial creditors, i.e. the profitability (interest rate) required by banks and other financial lenders

$$WACC = E/V * Ke + D/V * Kd * (1 - Tc)$$

Based on my own computation Meta's WACC is 8,8% as the table below shows.

Chart 15: Meta Platforms' Weighted Average Cost of Capital calculation

WACC	
Market value of equity	$ 165 370
Ke	8,5%
Market value of debt	$ 14 658
Kd	5,0%
Tax	13%
Rf	2,9%
Beta (5Y Monthly)	1,38
WACC	**8,8%**

Note: data taken from Yahoo Finance, as of Q2 2022
(in billions)
Source: Self-elaboration

3.4 Anticipated future

3.4.1 Estimations

When preparing predictions for a DCF valuation, I paid particular attention to the following points:
- Projected growth opportunities must be realistic and consider potential future competitive advantage
- Growth assumptions must be consistent with the planned investment

- The projected rate of return has to be realistic compared to the past performance and forecasts of their analysis (or to make forecasts excluding inflation).
- The projected inflation rate should be in line with market expectations
- The ratios and margins applied in the projected period must be consistent with the historical figures

Meta Platform's revenue growth in FY'21 was 37,2%. However, I assume a decline in revenue growth to 5,0% in FY'22 and 15,0% in FY'23/24 due to less user activity compared to the prior year. Then, revenue will increase to 16% growth in F'25, and FY'26, and finally going back down to 12% growth in FY'27 as I will be assuming a normal growth rate going forward. The terminal growth rate will be 3%, aligning with the long-term growth rate expectations of the economy.

Despite spending $19 Billion Capex in FY '21 for the Metaverse bet, it has been growing Free Cash Flow at a CAGR of 32,49% over the past 5 years. Free cash flow is still substantial despite spending on innovation.

In calculating Unlevered Free Cashflow, I assume $27-35 Billion in capital expenditure for the next 3 years as Meta is building its infrastructures for the Metaverse[27]. I project Unlevered Free Cash Flow to decline by 36% in FY'22 due to the significant increase in Capex and decline in revenue growth to 5% and will recover in the subsequent years as per the revenue forecast assumptions below.

Chart 16: Meta Platforms' Free Cash Flow Predictions 2022- 2030

Income Statement (USD)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Revenues	55 838	70 697	85 965	117 896	123 858	142 150	164 161	190 545	221 655	248 724	277 930	309 275	342 759
Cost of goods sold	9 355	12 770	16 692	22 649	23 794	27 308	31 537	36 605	42 582	47 782	53 393	59 415	65 847
Gross Profit	46 483	57 927	69 273	95 247	100 063	114 842	132 624	153 939	179 073	200 942	224 537	249 861	276 911
SG&A, ex. Amortization	11 297	20 341	18 155	23 872	25 079	28 783	33 240	38 582	44 881	50 362	56 276	62 623	69 403
Other Expenses	10 273	13 600	18 447	24 655	25 902	29 727	34 330	39 848	46 354	52 014	58 122	64 677	71 679
EBITDA	24 913	23 986	32 671	46 720	49 083	56 332	65 054	75 510	87 838	98 565	110 139	122 561	135 829
Depreciation & Amortization	4 315	5 741	6 862	7 967	12 636	15 739	19 604	22 755	26 470	29 703	33 191	36 934	40 932
EBIT	20 598	18 245	25 809	38 753	36 447	40 593	45 450	52 755	61 368	68 862	76 949	85 627	94 897
Taxes (Effective Tax Rate)	3 249	6 327	4 034	7 914	7 654	8 524	9 544	11 079	12 887	14 461	16 159	17 982	19 928
Adjusted EBIT	17 349	11 918	21 775	30 839	28 793	32 068	35 905	41 676	48 481	54 401	60 789	67 645	74 969
Plus: Depreciation & Amortization	4 315	5 741	6 862	7 967	12 636	15 739	19 604	22 755	26 470	29 703	33 191	36 934	40 932
Less: Capital Expenditures	-13 915	-15 102	-15 115	-18 567	-26 937	-30 916	-35 703	-41 441	-48 207	-54 094	-60 446	-67 263	-74 545
(Increase) Decrease in working capital		5 110	-2 754	1 068	-882	-1 569	842	-384	-47	-471	116	-253	-184
Unlevered Free Cash Flow		7 667	10 768	21 307	13 610	15 323	20 649	22 606	26 697	29 539	33 650	37 063	41 172

Source: Self-elaboration

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[27] Meta Platforms, SEC Filing 2022, pg 19

Assumptions	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Sales growth		27%	22%	37%	5%	15%	15%	16%	16%	12%	12%	11%	11%
COGS as a % of sales	17%	18%	19%	19%	19%	19%	19%	19%	19%	19%	19%	19%	19%
SG&A as a % of sales	20%	29%	21%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Other expenses as a % of sales	18%	19%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%
Tax Rate	16%	35%	16%	20%	21%	21%	21%	21%	21%	21%	21%	21%	21%
Capital Expenditures "CapEx" (amount)	13 915	15 102	15 115	18 567	26 937	30 916	35 703	41 441	48 207	54 094	60 446	67 263	74 545
Capital Expenditure as a % of Revenue	25%	21%	18%	16%	22%	22%	22%	22%	22%	22%	22%	22%	22%
Depreciation (amount)	4 315	5 741	6 862	7 967	12 636	15 739	19 604	22 755	26 470	29 703	33 191	36 934	40 932
Depreciation as % of CapEx	31%	38%	45%	43%	47%	51%	55%	55%	55%	55%	55%	55%	55%
Current Assets % Revenue	17%	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%
Current Liabilities % Revenue	12%	20%	16%	16%	16%	17%	16%	16%	16%	17%	16%	17%	17%
Working Capital	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Current Assets	9 366	11 370	13 716	18 519	19 978	22 700	26 168	30 367	35 452	39 696	44 352	49 367	54 733
Current Liabilities	6 870	13 984	13 576	19 447	19 932	24 223	26 849	31 432	36 564	41 280	45 819	51 088	56 638
Working Capital	2 496	-2 614	140	-928	-46	1 523	681	1 065	1 113	1 584	1 468	1 721	1 905
Net Working Capital Turnover	22,4	-27,0	614,0	-127,0	-2 696,7	93,4	241,2	178,9	199,2	157,1	189,4	179,7	179,9

Source: Self-elaboration

Meta Platforms' hiring freeze should save some expenses and improve Free Cash Flow. The 15% revenue growth assumption in FY'23E will increase Unlevered Free Cash Flow by 13% due to the operating leverage the company has with an average of 81% gross margins in the past 5 years. I project that with the revenue growth assumptions above, Unlevered Free Cashflow will double by FY'27 to $30 Billion.

	2018	2019	2020	2021
Revenues	55 838	70 697	85 965	117 896
Cost of goods sold	9 355	12 770	16 692	22 649
Gross Profit	46 483	57 927	69 273	95 247
Gross Margin	83%	82%	81%	81%

Source: Self-elaboration

After talking to various Meta analysts, I came to conclusion that the market currently values Meta-Platforms' at around $537,53 Billion and this implies that the market is only expecting approximately 3-11% revenue growth for the next years at a WACC of 8,8%. This is mainly due to the fact that analysts see Meta facing difficult time, facing different challenges from platform fatigue to increasing competition, therefore they expect bigger decrease in revenue growth due to relatively less number of users.

My DCF model incorporated the revenue growth assumption of 15% 5YR-CAGR, EBITDA at 15% 5YR-CAGR, and Unlevered Free Cash Flow at 17% 5YR-CAGR for the next 5 years of the forecast horizon. The EBITDA Margin will be at an average of 40% and the Free Cashflow Margin at an average of 12% for the 5 years forecast period.

I assume WACC at 8,8% and Perpetuity Growth Rate at 3.0% for the Terminal value, and I calculated the Implied Equity Value at $539,99 Billion (see calculus in the next section).

3.4.2 Equity Value out from the Enterprise Value

The enterprise value is obtained by discounting expected cash flows to the firm (i.e., the residual cash flows after meeting all operating, tax expenses, and capital expenditure, but prior to any payments to either debt or equity holders) at the weighted average cost of capital (WACC) [28]

Formula 14: Value of the Firm

$$Value\ of\ Firm = \sum_{t=1}^{t=n} \frac{CF\ to\ Firm_t}{(1 + WACC)^t}$$

After the first stage, the explicit forecasted period, the DCF-model continues with the terminal value period. In order to estimate the terminal value, I use a terminal growth rate (g) which is typically the range between the historical inflation rate (2%-3%) and the average GDP growth rate (3%-4%).

In Meta Platforms' case, the terminal growth rate is 3%, aligning with the long-term growth rate expectations of the economy.

Formula 15: Terminal Value

$$Terminal\ Value\ (TV) = \frac{(FCF * (1 + g))}{(WACC - g)}$$

Formula 16: Present Value of TV

$$Present\ Value\ of\ TV = \frac{TV}{(1 + WACC)^n}$$

Then I calculated the Enterprise value by summing both parts: Net present value of FCF and the Net present value of TV. Finally, to compute the Equity Value I subtracted the net debt from the enterprise value, which resulted in $539,99 slightly above the market valuation ($537,53 Billion) (Chart 16)

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[28] Aswath Damodaran (2012), Investment Valuation, p.37

Chart 16: Meta Platforms' Perpetuity Growth Method

Perpetuity Growth Method	
Weighted average cost of capital	8,8%
Net present value of free cash flow	$149 733
Terminal growth rate	3,00%
Terminal value	$731 154
Present value of the terminal value	$342 254
Enterprise value	$491 987
Less: Net debt	($47 998)
Equity Value	**$539 985**
Value per share	$236

(Numbers in Millions)

Source: Self-elaboration

I assume net debt at -$47 billion, as Meta Platforms operated at median net debt of -$41,7 billion in the past 3 years (Chart 16).

In my financial model, I value meta at $236 per share (considering 2.29 billion Meta outstanding shares as per 2021) (Chart 16), below the analysts' average forecast $285[29]. The latest price of the firm is $175.57 (Abril 27 2022). At this time, the firm appears to be undervalued.

Formula 17: Value per share

$$Value\ per\ share = \frac{Equity\ value}{Outstanding\ shares}$$

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[29] Data taken from Yahoo Finance

CONCLUSIONS

Based on the interviews of the equity analysts (see appendix D) and the literature I learned about specific value drivers of social media firms such as Meta Platforms, Twitter, Pinterest, and Tencent, the most frequently mentioned data point for most social media companies is the number of users. Apart from this it is also important to consider when valuating Meta, the advertisement capabilities, user's loyalty/engagement, and new features, services, and content.

The industry analysis highlights that the average engagement rate of social media companies in general terms had reflected a decrease since the new social media app TikTok has entered the market and instantly has attracted a significant number of users.

My analysis of stock performance and financial performance of Meta shows that
2020 revenue growth rate was the slowest, mainly due to most advertisers' budget cuts and the impact of the pandemic. However, 2021 saw a return to high growth at 37,2% as well as a recover of its share price after falling below $150 in March 2020 due to the pandemic.

Furthermore, I conducted the valuation of Meta using the multiplies and DCF method, mainly focusing on the last one. I based my valuation of Meta Platforms on a 9 years' time for the first valuation horizon and got an equity value of $539,99 Billion which compared with the market expectation is slightly above ($537,53 Billion). This is mainly due to the fact that analysts see Meta having a difficult time, facing different challenges from platform fatigue to increasing competition, therefore they expect bigger decrease in revenue growth and cash flow growth due to a smaller number of active users.

My main assumptions were:
- Expecting less active users which resulted in a decline in the total revenue due to the fact that many users have shifted their attention towards newer social media platforms like TikTok, which has automatically impacted the engagement of Meta Platforms', causing significant drops.

- Expecting increase in Capex for the next 3 years as Meta is building its infrastructures for the Metaverse[30]

My model shows a share value at $236, below the analysts' average forecast $285[31]. The latest price of the firm is $175.57 (April 27, 2022). At this time, the firm appears to be undervalued.

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[30] Meta Platforms, SEC Filing 2022, pg 19
[31] 47 Analysts Forecast from Yahoo Finance

Although, the equity value in my DCF model is in line with the market expectation as well as the value per share, I recommend Meta Platforms' hiring cost freeze which should save some expenses and improve Free Cash Flow and therefore it will increase the equity value.

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APPENDIX

A. Meta Platforms Financials

A.1 Meta Platforms Income Statements

Income Statement	2015	2016	2017	2018	2019	2020	2021
Revenue	17 928	27 638	40 653	55 838	70 697	85 965	117929
COGS	2 867	3 789	5 454	9 355	12 770	16 692	22649
Gross Profit	**15 061**	**23 849**	**35 199**	**46 483**	**57 927**	**69 273**	**95280**
SG&A	4 020	5 503	7 242	11 297	20 341	18 155	23872
Other Operating Charges	4 816	5 919	7 754	10 273	13 600	18 447	24655
Operating Income	**6 225**	**12 427**	**20 203**	**24 913**	**23 986**	**32 671**	**46753**
Other Income, Net	(31)	91	391	448	826	509	531
Income Before Income Taxes	**6 194**	**12 518**	**20 594**	**25 361**	**24 812**	**33 180**	**47284**
Income Taxes	2 506	2 301	4 660	3 249	6 327	4 034	7914
Net Income	**3 688**	**10 217**	**15 934**	**22 112**	**18 485**	**29 146**	**39370**

Statement of Cash Flows	2015	2016	2017	2018	2019	2020	2021
D&A	1 945	2 342	3 025	4 315	5 741	6 862	7967
Stock-based Comp	2 960	3 218	3 723	4 152	4 836	6 536	9164
PPE	2 523	4 491	6 733	13 915	15 102	15 115	18567

A.2 Meta Platforms Balance Sheet

Balance Sheet	2018	2019	2020	2021
Cash and cash equivalents	10 019	19 079	17 576	16601
Marketable Securities	31 095	35 776	44 378	31 397
Accounts Receivable	7 587	9 518	11 335	14039
Prepaid Expenses and Other Current Assets	1 779	1 852	2 381	4 480
Total Current Assets	**50 480**	**66 225**	**75 670**	**66666**
Equity Investments	-	86	6 234	6 775
Property, Plant, and Equipment	24 683	35 323	45 633	57809
Operating lease right-of-use assets, net	-	9 460	9 348	12155
Intangible Assets, net	1 294	894	623	634
Goodwill	18 301	18 715	19 050	19 197
Other Assets	2 576	2 673	2 758	2 751
Total Assets	**97 334**	**133 376**	**159 316**	**165987**
Accounts Payable	820	1 363	1 331	4083
Partners Payable	541	886	1 093	1 052
Operating lease lisabilities, current	-	800	1 023	1 127
Accrued expenses and other current liabilities	5 509	11 735	11 152	14 312
Deferred revenue and deposits	147	269	382	561
Total Current Liabilities	**7 017**	**15 053**	**14 981**	**21135**
Operating lease, non-current	-	9 524	9 631	12 135
Other liabilities	6 190	7 745	6 414	7 227
Total Liabilities	**13 207**	**32 322**	**31 026**	**41 108**

A.3 Meta Platforms DCF assumptions

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Daily Active Users - Facebook																
US and Canada	169	180	184	186	190	195	195	198	203	210	218	227	230	233	236	239
Europe	240	262	277	282	294	308	309	319	331	346	364	384	394	404	414	424
Asia-Pacific	309	396	499	577	641	744	806	896	996	1 106	1 236	1 376	1 466	1 556	1 646	1 736
Rest of World	319	388	441	478	532	598	619	659	699	739	779	839	879	919	959	999
Daily Active users	1 037	1 226	1 401	1 523	1 657	1 845	1 929	2 072	2 229	2 401	2 597	2 826	2 969	3 112	3 255	3 398
Monthly Active Users - Facebook																
US and Canada	219	231	239	242	248	258	262	266	273	282	293	305	309	313	317	321
Europe	323	349	370	381	394	419	427	441	457	478	503	531	544	558	572	586
Asia-Pacific	540	673	828	947	1 038	1 199	1 278	1 421	1 579	1 754	1 960	2 182	2 325	2 467	2 610	2 753
Rest of World	509	606	692	750	817	921	945	1 006	1 067	1 128	1 189	1 281	1 342	1 403	1 464	1 525
Monthly Active Users	1 591	1 859	2 129	2 320	2 497	2 797	2 919									
Monthly Active Users - Facebook																
US and Canada	77%	78%	77%	77%	77%	76%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%
Europe	74%	75%	75%	74%	75%	74%	72%	72%	72%	72%	72%	72%	72%	72%	72%	72%
Asia-Pacific	57%	59%	60%	61%	62%	62%	63%	63%	63%	63%	63%	63%	63%	63%	63%	63%
Rest of World	63%	64%	64%	64%	65%	65%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%
Monthly Active Users	65%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%
Average Revenue Per User / Quarter																
US and Canada	13,70	15,65	26,76	34,86	41,41	53,56	60,57	60,57	60,57	60,57	60,57	60,57	60,57	60,57	60,57	60,57
Europe	4,56	5,98	8,86	10,98	13,21	16,87	19,68	19,68	19,68	19,68	19,68	19,68	19,68	19,68	19,68	19,68
Asia-Pacific	1,60	2,07	2,54	2,96	3,57	4,05	4,89	4,89	6,89	8,89	10,89	12,89	14,89	16,89	18,89	20,89
Rest of World	1,10	1,41	1,86	2,11	2,48	2,77	3,43	3,43	3,73	4,03	4,33	4,63	4,93	5,23	5,53	5,83
Average Per User	3,73	4,83	6,18	7,37	8,52	10,14	11,57									
Revenue Pre-Seasonality																
US and Canada	12 001	14 461	25 583	33 744	41 079	55 274	63 477	64 454	66 082	68 360	70 964	73 894	74 871	75 847	76 824	77 800
Europe	5 892	8 348	13 113	16 734	20 819	28 274	33 613	34 701	36 007	37 638	39 596	41 772	42 860	43 948	45 035	46 123
Asia-Pacific	3 456	5 572	8 412	11 212	14 823	19 424	24 998	27 789	43 525	62 361	85 369	112 493	138 447	166 684	197 205	230 009
Rest of World	2 240	3 418	5 148	6 330	8 105	10 205	12 965	13 803	15 922	18 187	20 598	23 722	26 463	29 351	32 385	35 566
Revenue Pre-Seasonality	23 738	35 916	52 629	68 394	85 098	113 446	135 091	140 747	161 534	186 546	216 528	251 881	282 641	315 830	351 449	389 498
Revenue																
Total Revenue	17 928	27 638	40 653	55 838	70 697	85 965	117 929									
Average Revenue Per User / Quarter																
Average Per User	76%	77%	77%	82%	83%	76%	87%	88%	88%	88%	88%	88%	88%	88%	88%	88%
Revenue Adj. Seasonality																
US and Canada	9 064	11 128	19 761	27 550	34 127	41 884	55 413	56 719	58 152	60 157	62 449	65 027	65 886	66 746	67 605	68 464
Europe	4 450	6 424	10 129	13 662	17 296	21 425	29 343	30 537	31 686	33 122	34 845	36 759	37 717	38 674	39 631	40 589
Asia-Pacific	2 610	4 288	6 498	9 154	12 314	14 719	21 822	24 454	38 302	54 878	75 125	98 994	121 834	146 682	173 540	202 408
Rest of World	1 691	2 630	3 977	5 168	6 733	7 733	11 318	12 147	14 011	16 004	18 126	20 875	23 287	25 829	28 499	31 298
Total Revenue	17 815	24 470	40 365	55 533	70 470	85 761	117 896	123 858	142 150	164 161	190 545	221 655	248 724	277 930	309 275	342 759
Daily Active Users - All Products				2 030	2 260	2 600										
Monthly Active Users - All Products				2 640	2 890	3 300										
Average Revenue Per Quarter				6,52	7,38	8,62										

Source: Self-elaboration

B. Formulae

Formula 1: Value of Equity in explicit forecasted period

$$\text{Value of Equity} = \sum_{t=1}^{t=n} \frac{\text{CF to Equity}_t}{(1+k_e)^t}$$

Formula 2: Value of Firm in explicit forecasted period

$$\text{Value of Firm} = \sum_{t=1}^{t=n} \frac{\text{CF to Firm}_t}{(1+\text{WACC})^t}$$

Formula 3: After-Tax Cost of Debt

$$Cost\ of\ Debt = rd * (1 - t)$$

Formula 4: Cost of Equity

$$Cost\ of\ Equity = rf + \beta\ (rm - rf)$$

Formula 5: Weighted Average Cost of Capital

$$WACC = \frac{Equity}{Debt + Equity} * Cost\ of\ Equity + \frac{Debt}{Debt + Equity} * Cost\ of\ Debt$$

Formula 6: Weighted Average Cost of Capital

$$WACC = \frac{E}{D + E} * \left(Rf + \beta(rm - rf)\right) + \frac{D}{D + E} * rd * (1 - t)$$

Formula 7: Terminal Value

$$Present\ Value\ n = \frac{Free\ Csh\ Flow\ n - 1}{r - g}$$

Formula 8: Price per Earnings Ratio

$$PER\ earnings = \frac{P}{EPS}$$

Formula 9: Earnings per Share

$$EPS = \frac{Net\ Earnings}{Outstanding\ shares}$$

Formula 10: Price Sales Ratio

$$PSR = \frac{P}{SPS}$$

Formula 11: Price Book Value Ratio

$$PVBR = \frac{P}{BVS}$$

Formula 12: Engagement rate

$$Engagement\ rate = \frac{(likes\ +\ comments\ +\ shares)/\ posts}{number\ of\ followers}\ x\ 100$$

Formula 13: Change in Working Capital
Change in WC year x = WC (year x) – WC (year x-1)

Formula 14: Value of the Firm

$$Value\ of\ Firm = \sum_{t=1}^{t=n} \frac{CF\ to\ Firm\ t}{(1+WACC)^t}$$

Formula 15: Terminal Value

$$Terminal\ Value\ (TV) = \frac{(FCF * (1+g))}{(WACC-g)}$$

Formula 16: Present Value of TV

$$Present\ Value\ of\ TV = \frac{TV}{(1+WACC)^n}$$

Formula 17: Value per share

$$Value\ per\ share = \frac{Equity\ value}{Outstanding\ shares}$$

C. Meta Platforms performance

C.1 Stock price evolution of Meta Platforms from Apr24, 2021, to Apr 24, 2022, taken from Meta's web page

Stock Chart

C.2 Meta Platforms Fourth Quarter and Full Year 2021 Financial Highlights taken from Meta's web page

Fourth Quarter and Full Year 2021 Financial Highlights

In millions, except percentages and per share amounts	Three Months Ended December 31, 2021		Three Months Ended December 31, 2020		Year-over-Year % Change	Year Ended December 31, 2021		Year Ended December 31, 2020		Year-over-Year % Change
Total revenue	$	33,671	$	28,072	20%	$	117,929	$	85,965	37%
Total costs and expenses		21,086		15,297	38%		71,176		53,294	34%
Income from operations	$	12,585	$	12,775	(1)%	$	46,753	$	32,671	43%
Operating margin		37%		46%			40%		38%	
Provision for income taxes	$	2,417	$	1,836	32%	$	7,914	$	4,034	96%
Effective tax rate		19%		14%			17%		12%	
Net income	$	10,285	$	11,219	(8)%	$	39,370	$	29,146	35%
Diluted earnings per share (EPS)	$	3.67	$	3.88	(5)%	$	13.77	$	10.09	36%

Fourth Quarter and Full Year 2021 Operational and Other Financial Highlights

- **Family daily active people (DAP)** – DAP was 2.82 billion on average for December 2021, an increase of 8% year-over-year.
- **Family monthly active people (MAP)** – MAP was 3.59 billion as of December 31, 2021, an increase of 9% year-over-year.
- **Facebook daily active users (DAUs)** – DAUs were 1.93 billion on average for December 2021, an increase of 5% year-over-year.
- **Facebook monthly active users (MAUs)** – MAUs were 2.91 billion as of December 31, 2021, an increase of 4% year-over-year.
- **Ad impressions and price per ad** – In the fourth quarter of 2021, ad impressions delivered across our Family of Apps increased by 13% year-over-year and the average price per ad increased by 6% year-over-year. For the full year 2021, ad impressions increased by 10% year-over-year and the average price per ad increased by 24% year-over-year.
- **Capital expenditures** – Capital expenditures, including principal payments on finance leases, were $5.54 billion and $19.24 billion for the fourth quarter and full year 2021, respectively.
- **Share repurchases** – We repurchased $19.18 billion and $44.81 billion of our Class A common stock in the fourth quarter and full year 2021, respectively. As of December 31, 2021, we had $38.79 billion available and authorized for repurchases.
- **Cash and cash equivalents and marketable securities** – Cash and cash equivalents and marketable securities were $48.0 billion as of December 31, 2021.
- **Headcount** – Headcount was 71,970 as of December 31, 2021, an increase of 23% year-over-year.

New Financial Reporting Segment Structure and Operating Results

Beginning in the fourth quarter of 2021, we report our financial results based on two reportable segments:

- **Family of Apps (FoA)**, which includes Facebook, Instagram, Messenger, WhatsApp and other services.
- **Reality Labs (RL)**, which includes augmented and virtual reality related consumer hardware, software and content.

Segment Information
(In millions)
(Unaudited)

| | Three Months Ended | | | | | Year Ended December 31, | | |
	December 31, 2021	September 30, 2021	June 30, 2021	March 31, 2021	December 31, 2020	2021	2020	2019
Revenue:								
Advertising	$ 32,639	$ 28,276	$ 28,580	$ 25,439	$ 27,187	$ 114,934	$ 84,169	$ 69,655
Other revenue	155	176	192	198	168	721	657	541
Family of Apps	32,794	28,452	28,772	25,637	27,355	115,655	84,826	70,196
Reality Labs	877	558	305	534	717	2,274	1,139	501
Total revenue	$ 33,671	$ 29,010	$ 29,077	$ 26,171	$ 28,072	$ 117,929	$ 85,965	$ 70,697
Income (loss) from operations:								
Family of Apps	$ 15,889	$ 13,054	$ 14,799	$ 13,205	$ 14,874	$ 56,946	$ 39,294	$ 28,489
Reality Labs	(3,304)	(2,631)	(2,432)	(1,827)	(2,099)	(10,193)	(6,623)	(4,503)
Total income from operations	$ 12,585	$ 10,423	$ 12,367	$ 11,378	$ 12,775	$ 46,753	$ 32,671	$ 23,986

D. Meta Platforms analyst coverage

In blue are analysts surveyed analysts. List taken form Meta's web site

Firm	Analyst
Arete Research Services	Richard Kramer
Atlantic Equities	James Cordwell
Baird	Colin A. Sebastian
Bank of America / Merrill Lynch	Justin Post
Barclays	Ross Sandler
Bernstein	Mark Shmulik
BMO Capital Markets US	Daniel Salmon
Canaccord Genuity	Maria Ripps & Michael Graham
Citigroup	Jason Bazinet
Cleveland Research	Chandler Converse & Ross Walthal
Cowen	John Blackledge
Credit Suisse	Stephen Ju
Edgewater Research	Joe Wittine
Evercore ISI	Mark Mahaney
FBN Securities	Shebly Seyrafi
Goldman Sachs	Eric Sheridan
Guggenheim Partners	Michael Morris
Jefferies	Brent Thill
JMP Securities	Ron Josey
JP Morgan	Douglas Anmuth
Keybanc	Justin Patterson
LightShed Partners	Rich Greenfield
Loop Capital	Alan Gould & Rob Sanderson
Mizuho Securities	James Lee
MKM Partners	Rohit Kulkarni
Moffett Nathanson	Michael Nathanson
Monness, Crespi, Hardt	Brian White
Morgan Stanley	Brian Nowak
Mscience	Steve Weinstein
Needham	Laura Martin
Oppenheimer	Jason Helfstein
Piper Sandler	Thomas Champion
Raymond James	Aaron M. Kessler
RBC Capital Markets	Brad Erickson
Rosenblatt Securities	Mark Zgutowicz
Susquehanna Financial Group	Shyam Patil
Tigress Financial Partners	Ivan Feinseth
Truist Securities	Youssef H. Squali
UBS	Lloyd Walmsley
Wedbush	Ygal Arounian
Wells Fargo Securities	Brian Fitzgerald
William Blair	Ralph Schackart