A Work Project, presented as part of the requirements for the Award of a Master Degree in Economics / Finance / Management from the NOVA – School of Business and Economics.

Visa inc. and global payments industry – a part of equity resarch

Sophia Erdmann 48398

A Project carried out on the Master in (Finance) Program, under the supervision of:

Rosário André

16.12.2022

Abstract

Visa inc. is one of the market leaders in the payment industry. As consumer preferences are changing towards cashless, digital and innovative payment products, the industry has been evolving recently. Visa's potential to remain market leader depends on its to further innovate its product and service offerings. Moreover, Visa needs to be able to react to regulatory changes mostly related to cybersecurity and data protection. When forecasting Visa's financials a positive development is assumed of Visa and the overall payment industry. Additionally, a scenario analysis takes into account the success factors and risk factors described in the industry overview. It results in a higher probability of a good case scenario with Visa being able to respond to consumer and regulatory changes and maintaining their market position.

Keywords: Payment industry, Visa inc., equity research, forecasting

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

This report is part of the Visa inc. equity research report (annexed), developed by Sophia Erdmann and Andreas Gerhardt and should be read has an integral part of it.

Table of Contents

Introduction

The purpose of the joint report is to identify a buy, hold or sell recommendation of Visa's stocks. The recommendation is based on a calculated shareholder return taking into account transactions with shareholders as well as capital gains of the stock. A price target as of September 2023 is therefore defined. Furthermore, the report should summarise and analyse objectively all relevant information and explain assumptions made so that the shareholder can evaluate the outcome and form an opinion about the attractiveness of Visa's stock. Based on our assumptions and analysis of the company we conclude that the recommendation is a strong buy.

The joint report starts with a company overview. The corporate profile and historically values are analysed. Furthermore, a financial development also of the stock performance is provided. Lastly, the company ownership structure is explained.

In the next chapter, the global payments industry is analysed with Visa as a market leader in this industry. The ecosystem and relevant parties are described, and a competitive analysis performed. Moreover, risk and success factors are researched. These factors are later considered in the scenario analysis.

Thirdly, a macroeconomic outlook is given and the main economic drivers and its impact on Visa's business explained.

In order to provide transparency of the overall analysis, the methodology is described. Specifically, it is reasoned why the discounted cashflow method is used in this case. Moreover, the most relevant forecasting items including value drivers, revenue streams, costs, invested capital are explained. Then, the discount rate and calculation of cost of capital is explained.

The overall valuation is shown with its outcome of target price and overall return. Furthermore, an alternative valuation with multiples is provided.

Lastly, a risk analysis is performed. A sensitivity analysis shows changes of the share price if the discount rate or the growth rate changes. Moreover, a scenario analysis is performed showing a base case, bad case and good case scenario.

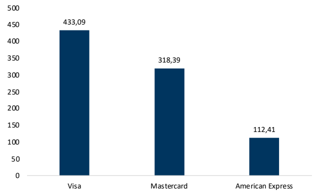
In the end, the final recommendation is given.

In this individual report parts of the joint report are covered. Specifically, this individual report covers the global payment industry overview, the forecasting of value drivers, revenues, costs and invested capital. Lastly, it covers the Scenario analysis.

Global Payments Industry Overview

Ecosystem and competitive analysis

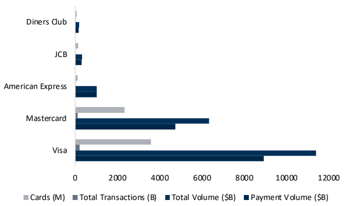
Figure 1: Market capitalization (in bn USD)



Source: Refinitiv as of November 7th 2022

Visa as a credit and debit card network connects different players within the payment industry. Credit card networks and gateways, acquirers, issuers, and merchants are interconnected in the payment ecosystem. Credit card networks among others Visa, Mastercard and American Express provide electronic networks to facilitate the payment flow i.e. processing the payment, monitoring the settlement, and manage compliance with network policies. Figure 14 displays the market capitalization of Visa, Mastercard and American Express. In terms of market capitalization Visa is the largest network with **433.09 bn USD** market capitalization followed by Mastercard with **318.39 bn USD** and American Express with **112.41 bn USD** as of November 7th 2022. In terms of global market share Visa and Mastercard covered **67%** of global transactions in 2020. Other competitors such as JCB, UnionPay or American Express show significant lower market share. However, it is observable that Visa's market share declined from **58%** in 2014 to **40%** in 2020 (see figure 16). It is expected that Visa will be challenged to maintain the market share in the near future due to new entrants. Visa's closest peer is MasterCard in terms of size and products offered. However, other peers operating in the payment industry with similar products we identified among MasterCard and American Express also JCB, UnionPay, Discover, FISERV, PayPal, Fidelity National Information Services, Global Payments, FleetCor Technologies, WEX, Affirm Holdings, Western Union Company, Euronet Worldwide and ACI Worldwide. All these companies provide services in the payment industry.

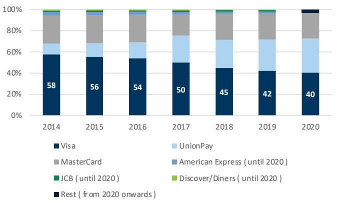
Figure 2: Visa and peers operational comparison



Source: Statista

Credit card networks such as Visa and Mastercard primarily make income through fees to the issuing and acquiring financial institutions whereas American Express issues their own credit cards. An acquirer such as Adyen, Bank of America, Citi or other financial institutions enable merchants to accept card payments and handles the information flow to the credit card networks to complete the payment. The merchants pay an interchange fee which is based on transaction volume for using the network to the bank. Issuers are financial institutions that issue cards to consumers. In order to create accounts and to process consumer transactions issuers pay a fee to the card networks. Gateways handle secure and encrypt data flow between the merchant, the acquiring bank and the issuing bank.

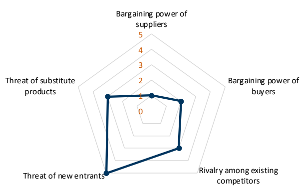
Figure 3: Global market shares based on number of transactions (in %)



Source: Statista

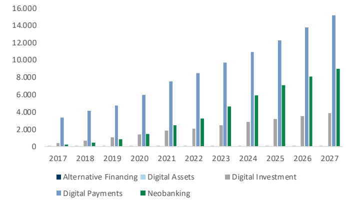
Using **Porter's five forces model** to further analyse the landscape it is clear that the industry is mostly **pressured by existing competition** and the potential of **new entrants**. Visa is among Mastercard and American Express one of the biggest card and payment network in terms of payment volume, number of transactions and number of cards in the ecosystem (see figure 15). There is constant pressure to compete the two

Figure 4: Porter's five forces analysis



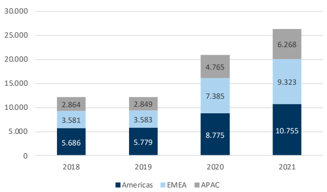
Source: Own analysis based on ECB, Mckinsey

Figure 5: Fintech transaction value per segment (in bn USD)



Source: Statista

Figure 6: Number of fintech startups



Source: Statista

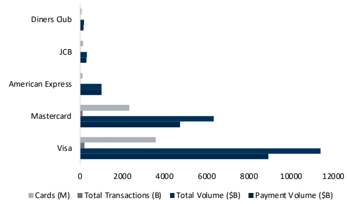
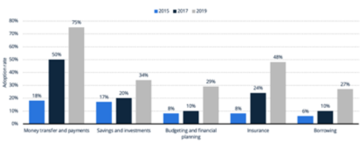
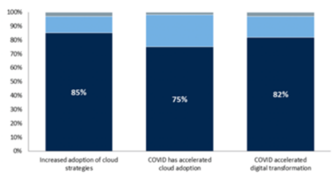


Figure 7: Consumer fintech adoption rates



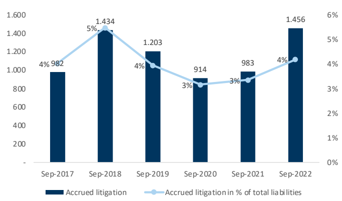
Source: Statista

Figure 8: Digital transformation in banking and payments



Source: RBC Capital Markets, published 9th April 2021

Figure 9: Visa's accrued litigations related to service fees



Source: Visa annual report 2022

biggest networks Mastercard and American Express and to retain and gain new market share. Besides this pressure the landscape became more **fragmented** over the last years due to technology advances. Financial technology companies have been entering the market through innovative products. As the landscape is competitive credit card networks compete with other established or newly created forms of payments including cash, checks, electronic funds, virtual currency payments, global or multi-regional networks, other domestic and closedloop payments systems. Networks therefore face a **constant threat of new entrants** but also **substitution by other financial technology providers and governments** that develop and operate national network schemes. Analysing financial segments for fintechs, digital payments have by far the highest value to new entrants compared to other segments such as investments or Neobanking (see figure 18). "Investments" refer mostly to trading Apps for consumers that can invest in financial assets. "Neobanking" refers to fintechs that leverage software and technology to offer innovative banking products in combination with mobile and online banking. Over he last years the number of new fintech startups has more than doubled globally from **2,131** in 2018 to **26,346** in 2021 (see figure 19). This trend is expected to continue in he next years. Therefore, the **threat by new entrants** in the payment industry is considered **very high**. **"Suppliers"** for the products and services in the card network are **technology providers** which Visa needs to further build their products. Especially since Covid digital transformation has accelerated (see figure 21) and transformed the banking and payment sector. However, the **pressure by suppliers** such as technology consultants is considered **low** as the payment industry benefits from ongoing innovation that spreads throughout the ecosystem. Moreover, companies leverage internal software research and intellectual property in order to gain competitive advantage. Lastly, the **bargaining power of buyers** is low to moderate. Buyers in this case are as described above **issuing and acquiring banks and merchants**. On one hand, merchants show low price elasticity. Card schemes can afford to raise the prices they charge to merchants in order to maximise profit. **Low price elasticity** is due mainly to the fact that **accepting card payments has become a necessity** for merchants in many business sectors, e.g. hotels, restaurants, petrol stations, supermarkets. One the other hand, service fees and prices are pressured by merchants and financial institutions in recent years. This pressure can be seen in Visa's financial report under **litigations** which have been accrued over the last years (see figure 22). This topic is further analysed in the **Methodology chapter**. Merchants claimed to have paid excessive fees to use the card networks with Visa and Mastercard violating antitrust laws as the two biggest networks globally.

Industry drivers and trends

The payment industry overall faced a **revenue growth of 6 to 7%** over the last years and is expected to continue growing its yearly revenues at a slightly **higher rate of 8 to 9% in the next five years**. Figure 23 shows the digital payment transaction growth over the years. Especially digital payments are expected to grow faster than the overall payment industry with a **CAGR of 11.7%** from 2022 until 2027.

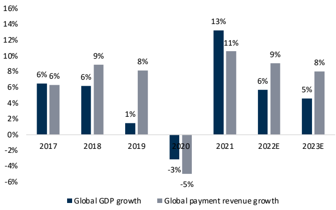
There are several drivers and future trends affecting the industry. Payment volumes and total transactions are **influenced by commerce expectations**. Payment networks have an integrated and value-added role within commerce rather than a standalone transaction role meaning payments do not exist on their own. Rather, the whole payment ecosystem facilitates commerce. Therefore, it is dependent on **consumer spending growth** and overall economic outlooks and **GDP growth**. Especially electronic **payment volumes have consistently outpaced consumer spending growth** in the last years globally. The most recent development in the macroeconomic environment influences the payment industry. **Rising inflation** and central bank's response to it affects interest margins impacting primarily deposit-holding banks but this impacts cash management of businesses and consumers. Moreover, regional differences due to **energy uncertainties affect economic growth**, which correlates with payment growth. These aspects are further described in the macroeconomic outlook.

Furthermore, **technology and innovation are major drivers** of the payment industry. A study by PwC analysed the areas most likely to be impacted by regulatory changes in the near future (see figure 25). Respondents concluded that data privacy and cybersecurity is most likely to be impacted by regulatory changes in the payment industry. Over **39%** of respondents confirmed they view it as likely. Other areas included ESG, local regulatory pressure, use of new technology, E-money, authentication and anti-money laundering. With rising ecommerce over the years, the business is mainly data driven. Real-time payments, open banking and cloud technologies have influenced the global payment industry. Solutions are expected by customers to facilitate secure, reliable and efficient money flows for all participants in the ecosystem. In fact, customers prefer a certain payment method because it is easier to use, automatic and commonly acceptable (see figure 26). PwC identifies cross-border payments as instant, low-cost solutions as a trend that affects the industry. Also important in cross-border payments are regional solutions also including cryptocurrencies and digital wallets according to PwC. In relation to commerce, the top three methods of paying at a point of sale are debit cards, cash and credit cards (see figure 27). As these methods are frequently used, companies can leverage from network effects to facilitate payment flows throughout the ecosystem. On the other hand of positive **network effects**, a trend of **decreased standardization** of payment products has affected the industry recently. Due to regulators **more regional and local payment networks** rather than further globalisation are needed. There is less standardization of payment solutions with networks having more control over regional key infrastructure. Regional regulations e.g. the **payment**

Figure 10: Digital payment transaction value (USD bn)

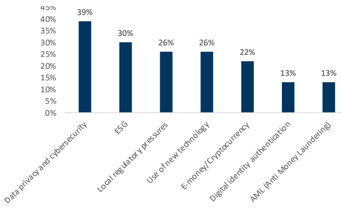
Source: Statista

Figure 11: Global GDP vs payment revenue growth



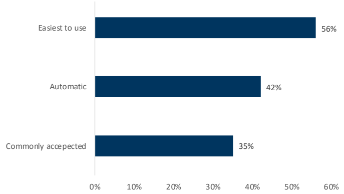
Source: Statista, Worldbank, McKinsey

Figure 12: Likelihood of regulatory changes



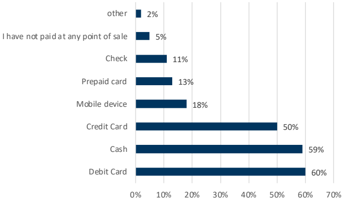
Source: PwC Payments 2025 and beyond study, published 2021

Figure 13: Importance of payment method attributes



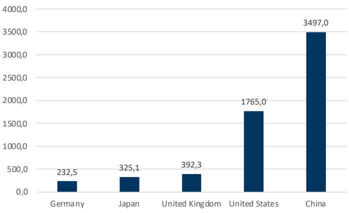
Source: Statista

Figure 14: Payments at point of sale in the US (2022)



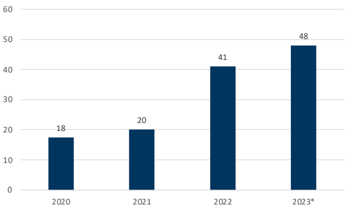
Source: PwC Payments 2025 and beyond study, published 2021

Figure 15: Top 5 countries by transaction value (bn USD) 2022



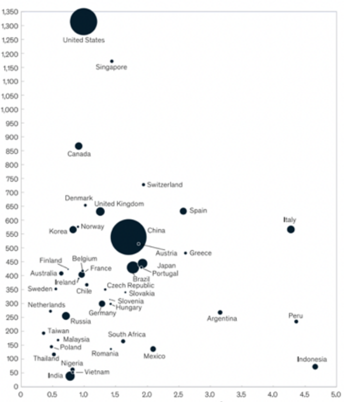
Source: Statista

Figure 16: Value of e-commerce losses to online payment fraud (bn USD)



Source: Statista

Figure 17: Payment revenues per capita and per transaction (in USD)



Source: McKinsey Global Payments report 2021

services directives (PSD) in the EU affect the dynamic in the industry with regulators forcing players to adapt. This leads to decreased dependency on standardized providers and further fragmentation within the industry. The **regulatory environment** mirrors the need for **data security and protection of consumers**. Political Initiatives such as the **PSD and PSD2 in the EU** should support innovation in the ecosystem but should also enhance security of payments. For example, multi-factor authentication should protect consumers and make payments safe and secure.

Risk and success factors

Companies have to face several **risk factors** within the payment industry for the future. With the dynamic changes in the industry driven by technological innovation, and **low barriers to entry** create opportunities for **disrupters and new entrants** in ecommerce, mobile payments, blockchain and digital currencies. Existing companies need to be able to stay up-to-date with **current technologies** and **consumer preferences** to maintain market share.

Another factor is a constant **regulatory risk**. Players are expected to adapt to new regulations that mainly focus on **data security and consumer protection**. Figure 29 shows that over the last years companies faced losses due to **payment fraud**. Therefore, regulators see a high need for protection of consumers and minimising fraud. Fulfilling requirements in terms of payment processing, currency conversion, point-of-sale transactions, privacy and data protection might increase costs and needed investments for payment providers and networks. Further **pressure by merchants** on interchange fee as seen in recent years are expected to continue in the near future due to the pricing power of the two biggest player Mastercard and Visa. Visa inc. specifically outlines governmental related risk that might affect their competitiveness through market access barriers especially in the Chinese, Indian and Russian payment market.

Moreover, **ongoing litigation risks** are faced especially by Mastercard and Visa inc. due to pressure by merchants based on competition and antritrust laws that can affect their businesses negatively in the near future.

On the other hand, if companies can **leverage on developing economies** this advantage can be a success factor. **Payment revenue per capita shows** that this metric is significantly lower in developing countries which can lead to **growth opportunities** for companies (see figure 30).

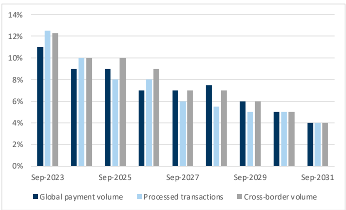
Moreover, further **innovation and technological advancements** can be a successful factor for companies. Companies need to adapt fast to changes in **consumer preferences** in the fragmented industry. In relation to this, a company's ability to diversify revenue flows (P2P, B2C, G2C, B2B) increases market opportunities.

The described risks and success factors are considered in the scenario analyses for the forecasting period explained in later chapters.

Methodology

Discounted Cashflow Method

Figure 18: YoY growth forecast by revenue driver



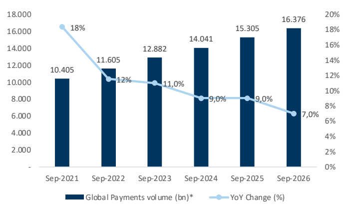
Source: Own estimates

Given the **maturity of the company** and the **stability of its cashflows** and the related predictions a **discounted cashflow method** is applied. Furthermore, the company is **public** and so with the information available of the company and its sector forecasts based on reasonable assumptions can be made. Using an average of the last 5 years, Visa shows a **Debt/Equity ratio of 56.48%.** In order to discount the cashflows with the WACC it is assumed that Visa inc. will continue having a similar capital structure.

Value Drivers

Operational value drivers for Visa Inc.'s valuation are nominal payment volumes, processed transactions and nominal cross border volume.

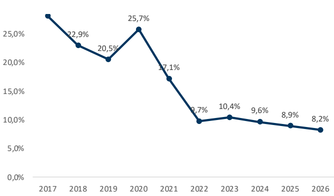
Figure 19: Nominal payment volumes



Source: Visa annual reports, own estimates

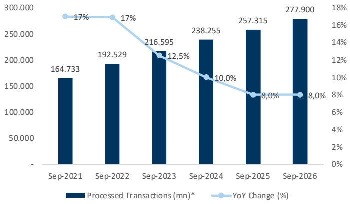
Nominal payment volume is the global money flow via the Visa system measured in USD and current prices. In the case of Visa it can be further broken down **into domestic (USA) and international** payments. However, as described in the company overview, growth rates of both domestic and international are expected to converge in the near future. Therefore, a single growth rate for both divisions is used. Transaction can be made via credit card, debit card and other form factors carrying the Visa, Visa Electron, V PAY and Interlink brands. Nominal payment volumes are related to **consumer spending growth and GDP growth**. Over the years, nominal payments growth has outperformed consumer spending growth globally. Sectors such as **travel, entertainment and restaurants** show some of the highest card penetration. Therefore, in the near future there will still be a rebound from lost activity due to covid in 2020/2021. Payment volume growth is further driven by developments in **Ecommerce and inflation**. Ecommerce revenues are expected to be in **low double digits next year** and growth will slow down further in the next five years (see figure 39). Inflation is expected to decrease to **6.5%** by the end of 2023. Due to the relationship between GDP growth, consumer spending and payment growth as described in the industry overview chapter, high inflation negatively affects payment volume growth. However, Further **replacement of cash** and adoption of digital payments and contactless payments growth in the double digits will be continued in the next years. According to a McKinsey study global payment volume growth is likely to be in **low teens over the next 5 years**. Moreover, for 2023 Visa's management expects net revenue growth to be in **mid-teens**, adjusted for Russia and payment volume growth to be in **low teens for 2023**. Therefore, nominal payment volume growth is expected to be **11% in 2023**, slowing down to **7% until 2026** and to **4% by 2031**.

Figure 20: Global retail e-commerce revenue growth



Source: Statista

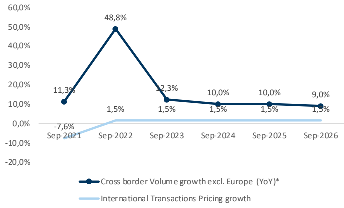
Figure 21: Processed transactions



Source: Visa annual report, own estimates

Processed transactions are the number of transactions in absolute terms of transactions processed by Visa cards or other forms using the Visa network. It follows the underlying rationale of payment volume and growth. Likewise, it is impacted by GDP growth and consumer spending growth. Following the rationale described in the industry overview and macroeconomic outlook, we expect processed transactions to slow down in the next years. In their 2023 guidance Visa's management expect the growth in 2023 of processed transactions to be in **low-double digits**. In 2023 number of transactions will grow at **12.5%** slowing down to **8% by 2026** and to around **5% by 2031**.

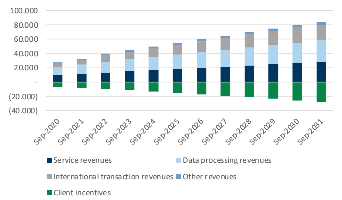
Figure 22: Cross border volume



Source: Visa annual report, own estimates

Cross-border volumes are measured in USD and current prices. Cross-border volume refers to payments and cash volume where the issuing country is different from the merchant country. Cross-border volumes are a major driver and attractive to card networks as they show a high value added. Major drivers of cross-border volumes are **Ecommerce and travel**. In 2022 it can be seen that revenues from travel recovered. Moreover, revenues from cross-border Ecommerce accelerated. According to management's 2023 guidance, cross border growth will be in **low double digits**, adjusted for Russia and cryptocurrency impacts. Therefore, growth for this driver is expected to be **12.3% in 2023**, slowing down to **9% by 2026** and around **4% by 2031**.

Figure 23: Visa's revenue

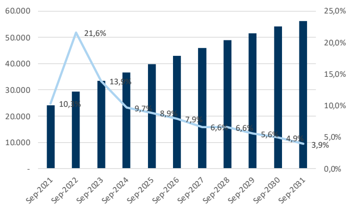


Source: Visa annual report, own estimates

Forecasting - Revenues

Visa's revenue streams are **service revenues, data processing revenues, international transaction revenues and other revenues**. The development is described in the company overview.

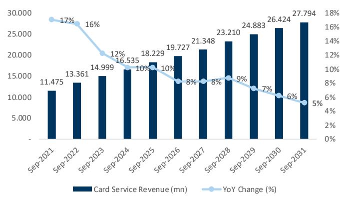
Figure 24: Total net revenues and growth



Source: Visa annual report, own estimates

Service revenues are realised through services provided by Visa to support client usage. Service revenues are primarily driven by the global payment volume as described in previous chapters. Global payment volume growth for Visa is expected to be in **low double digits,** recovering from the covid impact of the last year. However, in Q3 and Q4 2022 the Russian Ukraine war decreased global payment volumes growth slightly. Service revenues grew **17%** in 2021 and **16%** in 2022. Visa's management's guidance for 2023 expects net revenues to show a **mid-teens growth rate**. In order to forecast service revenues, nominal global payment volumes as the main driver are estimated and pricing growth for service revenues is estimated which together form card service revenues. The average pricing growth over the last five periods is **1.14%.** This average pricing growth is also assumed for the future with slightly decreasing growth by **0.01% per year** due to pricing pressure from fintechs, other new entrants and innovation. This results in service revenues forecasted to be **14,999m USD in 2023** growing to about **19,727m USD by 2026** and **27,794m USD by 2031**. The respective growth rates for 2023 is therefore estimated to be **12.3%, 7.0%** in 2026 and **4.0%** by 2031.

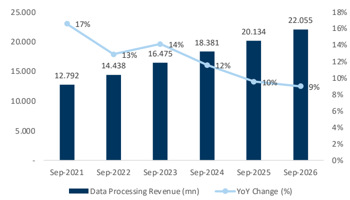
Figure 25: Service revenues



Source: Visa annual report, own estimates

Data processing revenues are realised through authorization, clearing, settlement, value added services, network access and other maintenance and support services. The main driver of this revenue stream is the absolute number of processed transactions. The growth of number of transactions together with data processing pricing growth result in data processing revenues growth. Over the last five years the price per transaction was between **0.07 USD and 0.078 USD**. An average pricing growth over the last years results in **1.43%** which has been applied to future years. Again, it is assumed that pricing growth will slow down in the future by **0.01% per year**. This slowdown in pricing growth also results due to growing pressure in the industry driven by technology advances and increased fragmentation. This will lead to data processing revenues to grow by around **14.1%** in 2023 displaying revenues of **16,475m USD**. By 2026 growth will slow down to **9.0%** and revenues will be **22,055m USD**. By 2031 we estimate growth to be around **5.5%** and revenues to be **30,356m USD** in absolute numbers.

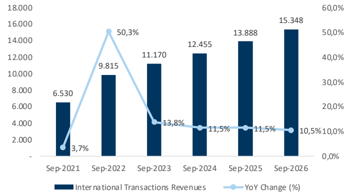
Figure 26: Data processing revenues



Source: Visa annual report, own estimates

International transaction revenues are realised through cross-border transactions and also currency conversion. Hence, the main driver is cross bolder volume growth. Moreover, it is considered that Visa acquired Currency Cloud Group Limited (Currencycloud) in 2021 which provides Visa with further foreign currency solutions and therefore will facilitate more revenues via this stream in the near future. As indicated in the industry overview, cross-border instant, low-cost payments are a recent trend in the industry. Hence, the acquisition of Currencycloud is a strategic acquisition in order to develop Visa's cross-border payment solutions with the aim to maintain their competitive position and market share. For future years the estimates of the main driver cross border volume are used together with a historical analysis of pricing growth. A pricing growth of **1.5%** is applied for future years. This results in international transaction revenues of **11,170m USD** estimated for 2023 which shows a growth of **13.8%** compared to the previous year. By 2026 revenues are expected to be **15,348m USD** and growth is expected to slow down to **10.5%** by 2026. By 2031 we expect revenues to be **21,829m** USD and growth to be **5.5%.**

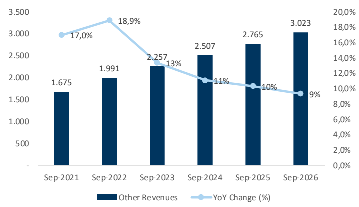
Figure 27: International transaction revenues



Source: Visa annual report, own estimates

Other services revenues consist of value-added services, such as license fees, fees for account holder services, certification, licensing and card benefits. As this serves as a bucket category for other revenue streams there is no direct driver. However, it is expected that value added services and license fees will increase similarly with the revenue streams mentioned before as the same drivers are underlying. The more transactions are processed the more fees for account holder services and other licensing revenues are expected. Therefore, other revenues are measured as a percentage of gross revenue. Other revenues accounted for **1,991m** USD in 2022. Over the last years the other revenues in percentage of gross revenues have only slightly increased over the last five years but has been stable recently accounting for **5%** of gross revenue in 2022. Therefore, the most recent split of 5% of gross revenues is used for the forecasting period. This will result in a growth for this revenue streams of **13.3%** and will lead to

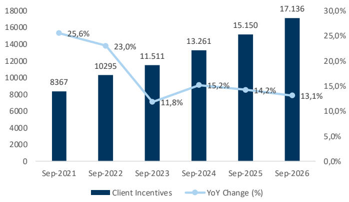
Figure 28: Other service



Source: Visa annual report, own estimates

2,257m USD in other service revenues in 2023. By 2026 we expect these revenues to be **3,023m** USD and growth to be at **9.3%.** Based on our assumptions we expect revenues to be **4,232m** USD by 2031 and growth to be at **10.0%** by then.

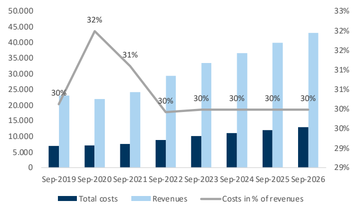
Figure 29: Client incentives



Source: Visa annual report, own estimates

Moreover, Visa pays **client incentives** to increase product acceptance and maintain market share. As indicated in the industry overview, the payment landscape is expected to become more fragmented over the years with further technological innovation and a high threat of new entrants. In the near future, Visa needs to compete with new fintechs and needs to further maintain market share. Therefore, we use the latest split of client incentives in percentage of gross revenues of **26.0%** and expect this base to increase **by 0.01 percentage points** until the industry reaches a steadier state in 2031. Our expectation for 2023 is in line with the forward guidance of the full year 2023 given by Visa. According to their guidance they expect client incentives for 2023 to be between **25.5% and 26.5%.** This will lead to client incentives to be **11,511m USD** in 2023 with a year over year growth rate of **11.8%.** By 2026 we expect client incentives to be **17,136m USD** showing a growth rate of **13.2%** when compared to the previous year. By 2031 we then expect client incentives to be **27,988m USD** showing a growth of **8.5%.**

Figure 30: Total costs to revenues



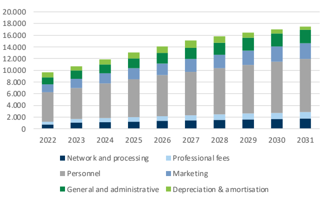
Source: Visa annual report, own estimates

Forecasting - Costs

Costs related to the core business are **cost of goods sold** that include network and processing and professional fees, as well as **overhead costs** such as personell, marketing, general and administrative costs, depreciation, amortization.

Network and processing costs are related to the operation of Visa's network. It can include maintenance, fees for data processing and other expenses**. Professional fees** consist of expenses related to consulting, legal and other services. As the cost of goods sold are directly related to revenues, a five-year historical average of **5.1%** of net revenues is applied to future years. This leads to COGS to account for **1,690m USD** in 2023, **2,177m USD** in 2026 and will rise to **2,845m USD** by 2031. Overhead costs such as personell, marketing and general costs are not directly related to Visa's revenue growth. However, it is assumed that the more revenues Visa generates, the more personell and marketing expenses it will have. Therefore, it is still forecasted using a five-year average of **25%** of net revenues. This leads to SG&A expenses to be **8,319m USD** in 2023, **10,717m USD** by 2026 and **14,007m** USD by 2031.

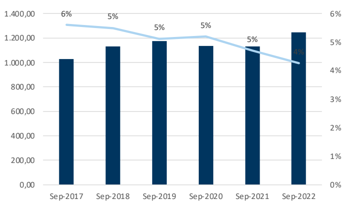
Figure 31: Cost estimates



Source: Visa annual report, own estimates

To estimate **depreciation and amortization** a D&A schedule was computed taking into account capital expenditure of the last years.

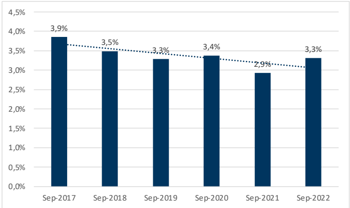
Figure 32: COGS in relation revenues



Source: Visa annual reports

For **capital expenditure** a historical five-year average of **3.4%** of net revenue was calculated and applied to estimate this cost for future years. As stated in Visa's annual report, the average useful life of property, equipment and technology ranges between 2 and 10 years. Therefore, we applied an **average of 6 years average useful life** to calculate future D&A. We expect D&A expenses to be **710m USD** in 2023 and growing to **1,114m USD** by 2026.

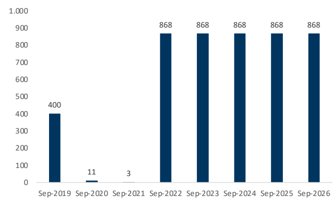
Figure 33: CAPEX in relation to revenues



Source: Visa annual report

A cost that needs further attention are **litigation expenses**. This cost is not considered to be related to Visa's core business. However, the litigations are still related to Visa's operations. In its annual report Visa states that litigation provisions are mainly recorded due to pressure from merchants. Visa along with Mastercard face litigation risks as merchants argue that fees are too high. In relation to litigation, Visa established an escrow account with restricted cash covering the litigations. In the future it is assumed that the restricted cash relates to **100%** of the litigation in each year. Due to the relation of these litigation to Visa's business and continuing pressure by merchants it is expected as a risk factor also for the forecasting period. Several litigation processes have been in the past 6 years. Therefore, the current provisions are likely to continue in the next years of the forecasting period, therefore, **remaining constant**. The underlying rationale is that the industry continues to become more fragmented with higher pricing pressure from new entrants. Therefore, this risk of merchants establishing litigation processes will persist in the near future. However, it is expected that the litigation processes will end at some point and will not exist forever. Therefore, we expect the litigations to continue in the **next 4 years**. Then the cash will be paid out of the escrow account, so that restricted cash equivalents and the related **litigations equal 0 from 2027 onwards**.

Figure 34: Litigation expense

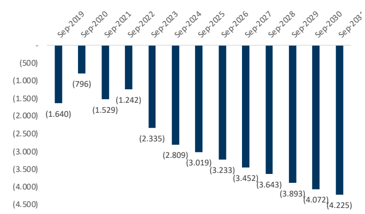


Source: Visa annual reports, own estimates

Forecasting - Invested Capital

Operating cash is assumed to be **2%** of net revenues as this is a common assumption for the industry. Core business items are measured in percentage of net revenues and for each item a five-year average has been applied to determine future values. Net working capital is directly related to revenues. **Net working capital** follows therefore a five-year average in percentage of revenue. Based on our assumptions we estimate Net working Capital to be **negative 2,335m USD in 2023**, further decreasing to **negative 3,223 by 2026** and to be **negative 4,225m USD by 2031**. To determine **PPE** a historical average capital expenditure rate in relation to revenues is applied and adjusted for D&A resulting from the D&A schedule. We expect **PPE** to be **3,607m USD in 2023**, **4,495m USD by 2026** and **8,478m USD by 2031**. The litigation and linked restricted cash account follow the same rationale as described in the litigation expense section. **Client incentives** are as explained before assumed to be related to revenues and Visa's market share. They serve to increase product acceptance and to maintain and gain market share. Over the years long-term client incentives as a share of revenues have increased. With increasing competition in the market (see industry overview) it is assumed that client incentives in percentage of revenues will increase **by 3%** each year in the forecasting period. This will lead to **long-term client incentives** of **3,928m USD in 2023**, **5,530m USD by 2026** and **8,380m USD by 2031**.

Figure 35: Net working capital development

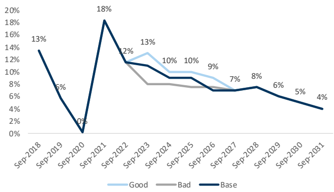


Source: Visa annual reports, own estimates

Goodwill, other intangible assets and other long-term assets are expected to remain constant.

Scenario Analysis

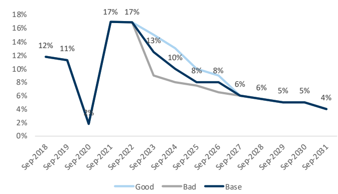
Figure 36: Global payment volume YoY change (%)



Source: Visa annual reports, own estimates

Regarding the significant risks, in particular increased geopolitical tensions and implied volatile markets which can have a strong impact on Visa's cash flows, some critical scenarios are considered which can bring greater volatility to the company's future returns. It is important to include these in a scenario analysis when determining the total value of equity. Three possibilities are described below: (i) a base case which essentially reflects the forecast described so far, (ii) a bad case scenario in which Visa faces lower revenue growth than expected and (iii) a good scenario in which Visa benefits from critical market situations. The risks considered in these scenarios result from the macroeconomic environment as well as risks related to the industry and sector development described in previous chapters. Specifically, a bad scenario assumes high losses for Visa mainly driven by higher inflation as expected leading together with higher energy prices leading to decreased consumer spending and therefore lower payment volumes. Moreover, a high impact on revenue growth due to the Russian Ukraine war is expected. It is then also considered that Visa is threatened by new entrants in the industry which results in a lower market share and lower revenue growth. On the other hand, in the good case scenario it is assumed that Visa leverages on the success factors, will expand their revenues by new products, services through innovation as well as expanding in emerging markets.

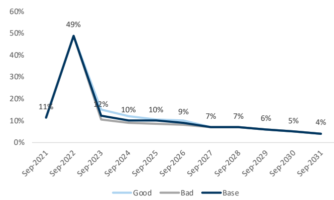
Figure 37: Processed transactions YoY change (%)



Source: Visa annual reports, own estimates

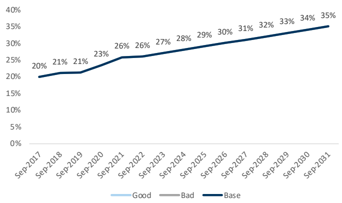
In the **bad case scenario**, it is expected that the main value drivers global payments volume, number of Processed Transactions and Cross border Volume show significant lower growth rates from 2023 until 2026 than in the base case. Specifically, global payment volume growth is expected to grow at only **8%** in 2023 and is expected to decrease slowly to **7%** until 2026. Numbers of transactions are expected to grow at **9%** in 2023 and expected to slow down to **6.5%.** Cross border volume in this case is expected to only grow at **9%** and slows down to **7.5%** by 2026. From 2026 onwards the growth rates of the base scenario are assumed. Factors taken into account in the bad case scenario are a worsening of the Ukraine/ Russian war. This would affect Visa's global payment volumes which are heavily dependent on cross-border spending more precisely number of transactions and international transactions because increasing tension between eastern and western countries can bring more sanctions regarding payment transactions and let them decrease. Moreover, in this scenario, we assume that the current high inflation is somewhat reduced by the actions of the central banks in form of interest rate increases, but that energy prices, especially in Europe, remain at a high level in the foreseeable future and thus lead can lead to a significant decrease in consumer spending growth. The areas most penetrated in the payment industry are

Figure 38: Cross border volume growth excl. Europe YoY change (%)



Source: Visa annual reports, own estimates

Figure 39: Client incentives in % of gross revenues



Source: Visa annual reports, own estimates

Ecommerce and travel are also sensitive to consumer spending. Therefore, persistent high energy prices have a significant impact on the value drivers. We assess this scenario with a probability of **10%**, as it can be assumed for the time being that Russia is ready for a long war in Ukraine and that inflation will be reduced by Q3 2023.

For the **good case scenario,** a faster recovery of the economy is assumed. Payment volume growth is expected to grow at **13%** in 2023 slowing down until it reaches **9%** by 2026. Number of transactions are expected to grow at **15%** slowing down to **8.5%** by 2026. International transaction volume is assumed to grow at **15%** until it reaches **7.5%** in 2026. For the good case a probability of **20%** is attributed. It is assumed that inflation will ease off in the first half of 2023 with a faster recovery of the economy. With higher GDP growth and higher consumer spending growth as in our base case, the main drivers of Visa's revenue streams are expected to grow at higher levels.

In our **base case** we assume inflation will remain relatively high around **6.5%** until it will ease of by Q3 2023 and the global economy is expected to recover. We assume the likelihood of the base case scenario to be **70%**. Overall, the recommendation is **BUY.**