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

COMMERZBANK HOLDING THE LEGACY

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

Rosário André

16/12/2022

Abstract: Commerzbank, Germany's second largest & listed universal bank, is in spotlight of investors, outperforming its benchmark YTD, and evidencing high trading volumes in 2022. The bank benefits from increasing interest rates on a short-to-medium run, but an overbanked market and high FinTech competition slows the growth of commission income down. Based on various other assumptions and knowledge, Commerzbank will be valuated with the flow to equity approach, multiples valuation as well as scenario and sensitivity analysis providing price ranges and will offer recommendation based on all the facts available.

Keywords: Equity Research, Commerzbank, Valuation, Flow-to-Equity

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MASTER IN FINANCE

"Commerzbank AG"

COMPANY REPORT

"BANKING & FINANCIAL SERVICES"

16 DECEMBER 2022

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Commerzbank HOLDing the legacy

- Commerzbank as second largest listed bank in Germany is strongly positioned in corporate & retail banking market, with growing focus on online-services on private customer side. The corporate bank serves mostly medium-sized corporate clients, pillar of the German economy

- Branches in every continent supporting German, but also international corporate clients. However, domestic as non-domestic branches will be reduced. Limited growth perspective due to high competition in "overbanked" market may decrease margins further, affecting Commerzbank´s Net Commission Income. Raising FinTech´s taking market share in payment and brokerage services

- Geopolitical tensions between Russia/Ukraine paired with inflation does not affect the industry as much as other companies. While benefitting from interest rate increase by ECB, subsidies such as TLTRO-3 will be removed from 2023 onwards

- Intrinsic valuation applying free cash flow to equity approach results in an estimated share price of €7.42 for 2022, which is supported by the relative valuation. With closing price of €7.70 and an expected dividend yield of 5.5%, investment recommendation is "HOLD"

Company description

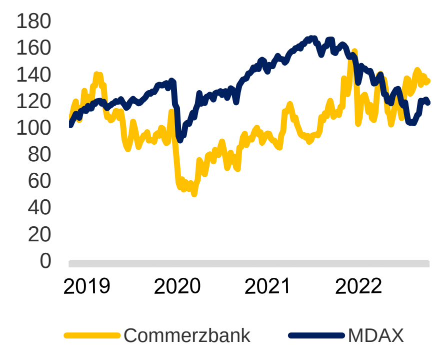
Commerzbank is a universal bank, located in Frankfurt am Main, Germany. The bank is advising over 28,000 corporate and 11mn. private & small business customers offering retail-, corporate, and investment banking products and services

Recommendation:	**HOLD**
Price Target FY22:	**7.48€**
Price (as of 15-Dec-22)	**7.70 €**

Bloomberg: CBK – GR

52-week range (€)	5.168– 9.513
Market Cap (€m)	9,656
Outstanding Shares (m)	1,252

Bloomberg, CBK - GR



Source: Bloomberg, CBK - GR

(Values in € millions)	2021	2022E	2023F
Net Interest Income	4,849	6,025	5,613
Net Comission Income	3,616	3,646	3,881
Net Income	353	1,117	1,516
ROTE (%)	1.37	4.18	5.64
CIR (%)	74	60	62

Source: Bloomberg, Analysts estimate

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Company Overview

History of Commerzbank

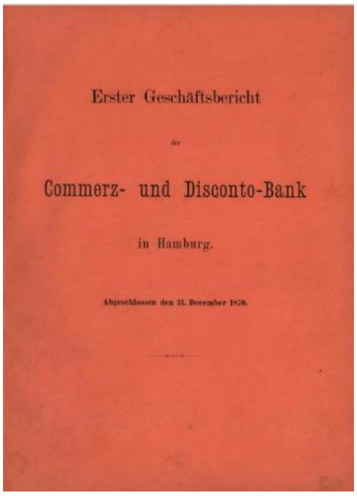

Figure 1: Commerzbank Annual Report from 1870
Source: Commerzbank, 2022

The German economy is carried by the "Mittelstand", and Commerzbank is the "Mittelstandsbank". As the second largest listed player the country, Commerzbank is offering the full range of universal bank product lines, ranging from Retail-to-Corporate & Investment Banking. Due to the Covid-19 pandemic and political instability caused by the war in Ukraine, the bank suffered losses and its economical ability got tested (Commerzbank, 2021). Simultaneously, Manfred Knof became new CEO and Chairman, replacing Martin Zielke in 2021. Knof is known to be a severe and strong leader from his job at Deutsche Bank before, focussing now on the restructuring of Commerzbank. He implemented the new "Strategy 2024", approaching a capital return policy including dividend payments and Return on Tangible Equity being at least 7.00%. *"We intend to resume dividend payments in 2022 and have decided on a capital return policy. We are confident that we will achieve our ambitious goals."* (Commerzbank, 2021).

Figure 2:
First Commerzbank branch in Hamburg
Source: Commerzbank, 2022

Commerzbank played a consistent part in Germanys history, being founded in Hamburg in 1870 by merchants, one year prior to the German Empire. The bank survived in most difficult times and circumstances, ranging from two world wars, occupation of east Germany and all major economic and financial crises. Early on, it was involved in placing government and municipal bonds from the beginning of the 20th century, financing Germany in both World Wars. During the Nazi occupation of Eastern Europe in the 1940´s, Commerzbank opened branches and acquired foreign banks significantly below the fair price. While its balance sheet tripled in size, government bonds accounted for 60% of total assets at the end of the war (Commerzbank, 2021). The last time it was a matter of life and death was during the financial crisis erupting in 2008, acquiring the also struggling Dresdner Bank at the same time. In 2008, the German government had to bail out Commerzbank in form of a "silent participation" boosting its Tier 1 capital and is still owning about 15% up to date (Commerzbank, 2022). In 2022, Commerzbank has ambitious goals, knowing that it needs to become more profitable and efficient. Banks are usually a mirror of the economy and reflecting the country's history. Market is honouring its ambitions, the stock outperformed MDAX by about 27% YTD. If "Strategy 2024" will work, the bank has a bright future and can deliver stable returns to investors. (Commerzbank, 2021).

Stock Performance

Figure 3:
Commerzbank stock in German comparison (€)
Source: Bloomberg, CBK-GR

Figure 4:
Commerzbank stock performance (€)
Source: Bloomberg, CBK-GR

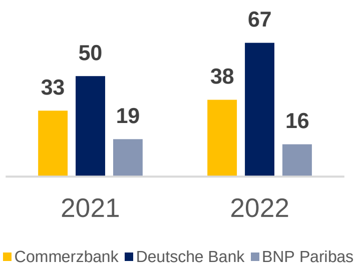

Figure 5:
Trading Volumes (in €bn., yearly average)
Source: Bloomberg, 11/2022

Commerzbank stock is trading under the ticker "CBK" since its IPO in 1989. In the most recent history, Commerzbank stock dropped two times significantly: During the Dotcom-Bubble in 2001/2002 (from €225 to €25) and the financial crisis in 2008/2009 (from €180 to below €20). From the latter, it never recovered. During the last decade, which was characterized by a low-interest environment, the stock moved within a range of €3-€15, most volatile in the Covid-19 crash in 2020. One of its main competitors, Deutsche Bank stock, shows similar movements, already giving a hint about the difficult and competitive banking industry in Germany. Right now, there are 1,252 mio. shares outstanding. With a current price of €7,80 Commerzbank's market capitalization is €9,765 mio. (Commerzbank, 2022).

Investors of Commerzbank suffered more than 90% losses within the last two decades, and the price development shows that the 21st century will become another difficult one. In 2018, the bank got kicked out of the DAX30, the main Index in Germany. It was a member since the foundation in 1988, and got replaced by Wirecard, which later turned out to be a fraudulent company. From that day on, Commerzbank switched to the MDAX, representing medium-sized listed corporates in Germany (Reuters, 2018). Since January 2021, Manfred Knof became new Chairman and CEO of the group. In the period between 01/2021 – 11/2022, the MDAX decreased from 30,950 points to 23,678 points (-23,49%), while Commerzbank stock price increased from €5,34 to €8,17 (+52,99%). This fact is interesting, as other bank stocks neither outperformed nor underperformed their index. Additionally, it also performed better than mBank, their polish subsidiary. This might be connected to the risk of CHF loans in mBanks balance sheet, which had a major impact on their net profit. In general, Commerzbank is interested in selling the subsidiary, if a fair price is offered (Commerzbank, 2021). With the "Strategy 2024", the bank seems to become more interesting to investors. Knof is not just talking but shows action: Dividend payments; a return on total equity >7%; completed the acquisition of Comdirect. Trading volumes are high for a medium sized German bank, proofing the passion of investors. While Commerzbank's average trading volume is €38bn. a day, BNP Paribas is lower with €16bn., but 5 times bigger in terms of market capitalisation. In general, German banks seem interesting, as also Deutsche Bank´s volume is high (€67bn.) (Figure 5). High trading volumes can also explain sharper movements in the stock price (Figure 3), but don't guarantee attractive returns.

Business Model

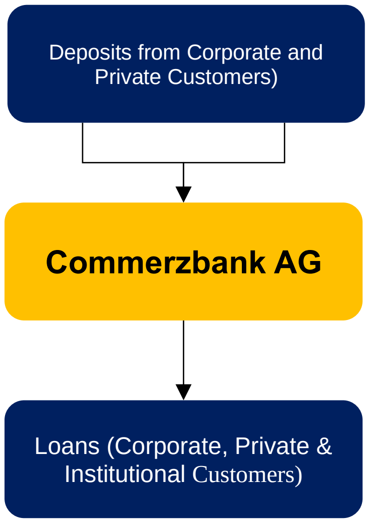

Figure 6:
How banks work
Source: Heffernan, 2005

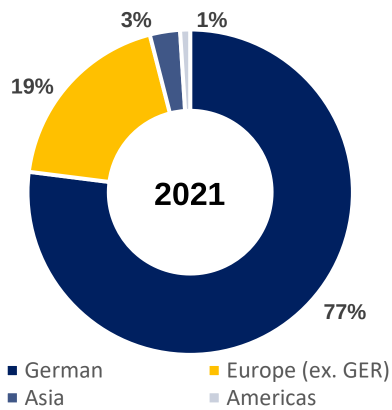

Figure 7:
Income before Risk Result – By Region
Source: Commerzbank, 2021

Commerzbank is the second largest listed universal bank in German, operating in retail, - commercial- and investment banking. It is ranked as Germanys best bank regarding trade finance and other corporate banking solutions provided to medium-sized German clients (The Banker, 2021). In general, banks can be seen as intermediaries between two parties: Depositors and borrowers. Depositors have money, which they do not need, and deposit their money at a bank. Usually, they receive interest payments on their deposits, depending on the prime rate of the European Central Bank (Heffernan, 2005). The borrowers also consist of private people, corporations, governments, and other financial institutions. (Figure 6)

As a universal bank, Commerzbank's main source of income derives from its Net Interest Income (NII). Accounting standards distinguishes between interest income from assets at amortized cost (i), fair value through other comprehensive income (ii) and mandatorily fair value through profit & loss (iii). First are assets which are measured by their initial value reduced by repayments, while the second and third are measured at fair value. The difference between (ii) and (iii) is that latter is recognized in the profit and loss statement, while (ii) will show up in other comprehensive income (PWC, 2017). Most crucial interest income drivers for Commerzbank are retail mortgage financing loans, individual loans, international corporates, and loans to Mittelstand. The banks second most important revenue driver is Net Commission Income (NCI). It includes all fee-carrying banking products and services (e.g., subscription fees for mutual funds). As per 12/2021, Commerzbank's Net Interest Income was €4,848bn. (57.28%), while its Net Commission Income was €3,616bn. (42.72%). NCI can be split up in commissions from commercial banking (Guarantees, payment transaction, fiduciary transactions), investment banking (Intermediary business, security transactions, syndicate business).

The banks main operations are happening in about 550 branches across Germany. Figure 7 shows the net income before risk result and underlines, that 78% of its profit is generated in Germany, and 96% in Europe, respectively. Commerzbank had a huge network of branches, which should further be reduced to 450 branches, being one of the milestones of "Strategy 2024" (Commerzbank, 2022). Branches will still keep part of their business model, arguing that: (1) The whole range of retail banking products shall be provided, including more complex structures such as mortgage finance and (2) Elderly generations, with long-term customer relationships, shall be served independent from the usage of internet.

Figure 8:
Commerzbank branch split
Source: Commerzbank, 2022

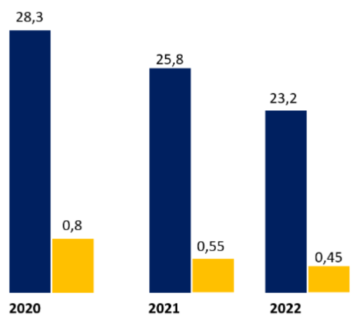

Figure 9:
Number of branches; Commerzbank and Germany (in ths.)
Source: Commerzbank, 2022, ECB, 2022

Many branches had to close during lock-down periods in the pandemic. Back then, executive management decided to never reopen selected branches, particular smaller ones in less crowdy areas. Figure 9 shows the number of branches over time in Germany, and figure 8 presents the split of Commerzbank's new branch strategy: About 73% of customers shall be served online. For private clients, this can be done through the website or the mobile app, which the bank recently updated. All simple banking products and services are offered there, including security purchases. In addition, Commerzbank merged with Comdirect, a previously owned partial subsidiary and online bank. A customer can now open an account at Commerzbank for complex finance products and simultaneously have a Comdirect account connected (including instant money transfer), where security purchases are cheaper. Next, the bank plans to run twelve advisory centres, which are similar to a call centre. But qualified staff will be there all around the clock, offering advice to clients whenever and wherever they want. In addition to their digital and remote channel, Commerzbank is still having a branch network of 450 from 2022 onwards. All 450 branches will be "Quick Advice & Self-Service Centres", mainly in metropolitan areas. The building itself will be smaller, customers can come without an appointment and get advisory for non-complex products (Commerzbank, 2022). Out of the 450 branches, about 220 include "Best-in-Class" branches for premium clients (In bigger buildings). Qualified bankers will provide advice to wealthy clients, especially in terms of investing. While online service, Advisory Centres and Advisory branches are providing better cost efficiency, "best-In-Class" branches take care of older generations, long-term fruitful customer relationships and a stable market share in complex finance products. In Commerzbank's private customer segment, also small businesses are included (total of 11 million customers). This are mostly restaurants, barbers, or craftsmen, which have similar needs as normal employees.

Next to the private and small business customers segment, Commerzbank is advising about 28,000 corporate customers, most of them traditional family-owned medium sized businesses called Mittelstand (revenue <1bn.) (Commerzbank, 2021). This medium-sized corporates are a crucial part of the German economy, operating in the services, construction, or commercial industry (KFW, 2022). Market penetration is with 88% in 2022 among the highest for corporate clients in Germany, followed by Deutsche bank with 75% (Statista, 2022). Relationship bankers are located in the bigger branches, but for customer appointments, business trips or videocalls are done. The relationship banker is in direct touch with the management of the company and gets assistance by his associates. He receives support from Trade Finance & Cash Management (Foreign business), Fixed Income (Hedging currencies and commodities) and Financial Engineering (complex finance structures and capital markets) specialists, which are also responsible for revenue. Each company is allocated to a Credit Officer (CO), depending on the industry. The CO´s are doing a yearly risk assessment about negotiated credit lines of the corporate clients, called prolongation. Additionally, they decide about newly requested credit facilities. International Corporates are served by the investment banking division in Frankfurt a.M., an equity capital markets team (origination and syndication), bond department (origination and syndication), M&A team and the trading floor are supporting depending on the client request. Propriety trading is not done at Commerzbank, as it is forbidden under the German KWG (NRF, 2022). Legal, human resources, audit, compliance, and other divisions which can be centralized are located in Frankfurt, too.

Industry Overview

Banking and Financial Services Industry

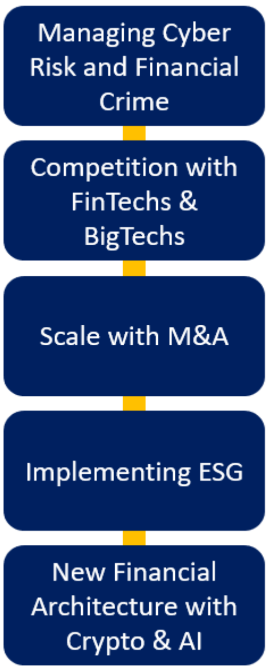

Figure 10:
Trends for the Banking & Finance industry
Source: Deloitte, 2021

The Banking and Financial Services Industry changed rapidly during the last decades, gaining in speed especially since 2020, the start of COVID-19 pandemic. It was a challenge and a chance at the same time: The global economy was in lock-down, catalysed the digitalisation of banks but also other industries. Companies' mindsets changed on a long-run, providing Home-Office for employees, and doing Videocalls instead of business trips, saving money and time for all stakeholders.

Considering these recurrent trends, banks and financial services provider have to implement new strategies to survive and grow in the next decade. With the shift towards digitalization, cyber-threads gained in popularity and can lead to an existential crisis for a company. Cyber-attacks can originate from state and non-state actors. Carnegie provides a database including all attacks on financial institutions, already registering over 20 in 2022. An example is "Lazarus", a trojan virus sponsored by North-Korea. It tried to deliver malware to decentralized finance apps and collect data without authorization from their victims (Carnegie, 2022). Additionally, Russia increasingly launches cyber-attacks on European critical infrastructure, where banks represent a significant part. Keeping this state-actors in mind, having sufficient cyber security is crucial for banks. FinTech´s also threaten the traditional banking landscape: During the pandemic, many young people opened an account and bought stocks for the first time (Figure 11). But instead of going in person to a bank, it was done exclusively online. Banks with no or expensive online brokerage services benefited less from the trend (Deloitte,

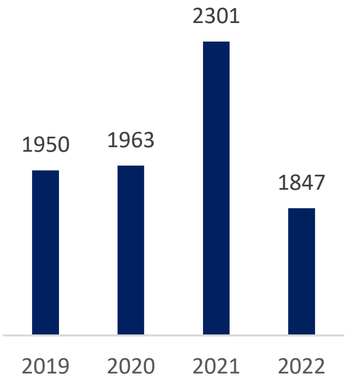

Figure 11:
Value of shares hold in Germany (€bn.)
Source: Statista, 2022

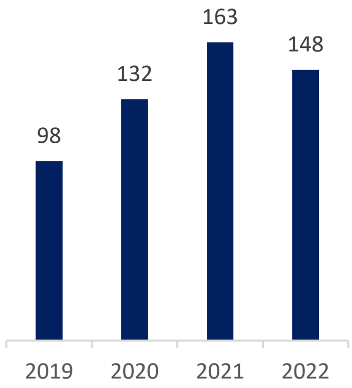

Figure 12:
Transaction volume of neo-brokers in Germany (€bn.)
Source: Statista, 2022

2021). Figure 12 shows, that transaction volume from 2019 to 2021 for Neo-Brokers almost doubled, while total volume of shares just increased by about 20%. Furthermore, BigTech companies from the US, such as Apple, Amazon, or Alphabet, undermine the market dominance of traditional banks. Not just that each of them introduced their own payment services (e.g., Apple Pay, Google Pay), but also offer banking products like credit cards (e.g., Amazons or Apples credit card in cooperation with banks) (Apple, 2022) (Amazon, 2022). Traditional banks such as Commerzbank benefit through experience in the industry, good reputation, and their banking license, which BigTech´s do not have. High industry fragmentation and low margins require investments in digital infrastructure, that banks can operate more profitable and strengthen their domestic position (Deloitte, 2021). Comdirect was a partially owned online broker and subsidiary of Commerzbank. It operated more profitable, had high growth rates, and especially benefitted from increasing popularity in stock market; both merged in November 2020 (Comdirect, 2022).

Another topic which is gaining in relevance are environmental, social and governance (ESG) values. New alliances and standards were introduced, such as the Task Force on Climate-Related Financial Disclosures (TFCD), the Partnership for Carbon Accounting Financials (PCAF), and the newly created Net-Zero Banking Alliance, formed ahead of the United Nations Climate Change Conference (COP26) (Deloitte, 2021). Banks already implemented products connected to ESG criteria, Green Bonds and Sustainable Loans are just two examples. The first describes a bond which funds are used to achieve a positive ESG impact, the latter are loans with interest rates connected to ESG covenants. Commerzbank itself is operating climate-neutral since 2015. Not just ESG, but also new architecture implementing blockchain technology, cryptocurrencies and artificial intelligence is affecting the product line and operations of banks. JPMorgan introduced their own blockchain onyx in 2020, tokenizing money market funds. This increased operational efficiency due to less intermediaries and cost benefits by using smart contracts (JPMorgan, 2021). Not just money market funds, but theoretically every asset can be tokenized. The total value locked (TLV) shows the sum of all assets locked into Decentralized Finance (DeFi) protocols and grew by more than 10 times from 01/2021 to 01/2022 (Figure 13) (DeFi Lama, 2022). Furthermore, Initial Coin Offerings (ICO) can disrupt the traditional IPO market, being less regulated and cheaper. Instead of selling securities, the company sells coins, which can be traded at crypto exchanges. These coins bear a partial ownership as well as cash flow/dividend rights, comparable to a stock. Not only on the product side, but also in operations, blockchain technology is providing higher efficiency.

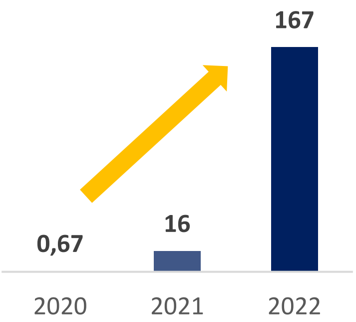

Figure 13:
Total Value Locked (€bn.)
Source: DeFi Lama, 2022

Competitive Banking Market in Germany

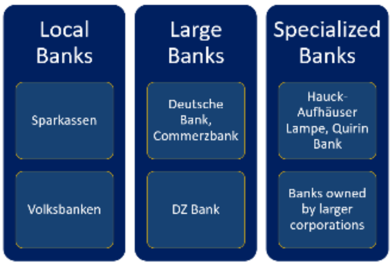

Figure 14:
Banking landscape in Germany
Source: Bain, 2021

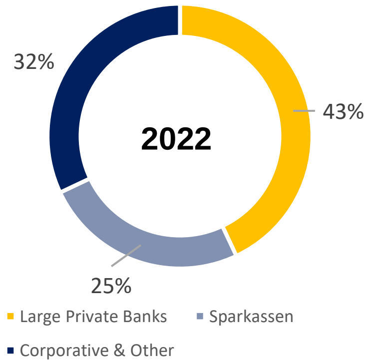

Figure 15:
Total Bank Asset Split in Germany
Source: IMF, 2022

2022	Spark-assen	Coope-rative Banks	Commerz-bank	Interna-tional Banks
ROE	6.1%	5.5%	3.63%	12.5%
CIR	70.8%	52.1%	60%	62.2%
CET-1	15.6%	22.7%	13.27%	14.96%
P/E	-	-	6.68	6.03

Table 1: Banks comparison of profitability and efficiency
Source: Statista, 2022

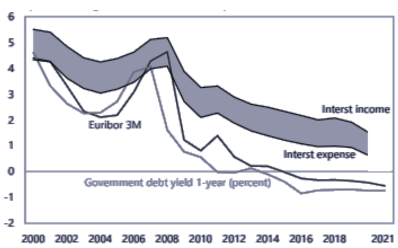

Figure 16:
NII, EURIBOR 3M and Government debt yield (2000-2021)
Source: IMF, 2022

Compared to an international level, the profitability of the German banking sector is low. The European average Return on Total Assets (ROA) is at 0.15, while the Return on Totals Risk Weighted Assets (RORWA) is 0.43. German banks delivered a 0.13 ROA and 0.34 RORWA, which is significantly lower (IMF, 2022). By assessing these values, it is important to consider that Italian, Greek and Spanish banks are included in the European average, and still German banks are performing worse. In general, Germany is overbanked and fragmented, as competition is ranging from local independent financial institutes (Sparkassen and Landesbanken) and listed universal banks (e.g., Deutsche Bank, Commerzbank) to online banks (e.g., N26, Comdirect), niche players (e.g., Hauck-Aufhäuser Lampe, Quirin Bank) and cooperative banks (Volksbanken, DZ Bank). In addition, large automobile corporations such as Daimler or Volkswagen providing inhouse banking services, specialized in financing car purchases (Figure 14). In total, about 1,400 banks competing against each other and differentiate in business model, objectives, ownership structure and branch network (IMF, 2022). Figure 15 shows the percentage of total bank assets for large private banks, sparkassen and cooperative banks in Germany. Sparkassen are not competing with each other, as they are allocated to defined regions and exclusively cover that area, same principle applies with cooperative banks. Table 1 shows profitability and efficiency of bank in a comparison, including an international average.

A popular measure to reduce cost/increase efficiency is to fire staff and closing branches, as Commerzbank did. From 2010 to 2020, the number of branches declined from 0.48 to 0.29 per thousand inhabitants, the number of bank employees decreased from 8.2 to 6.9, respectively. Even though German banks are reducing cost, compared to the European average, the values are still high, but in line with international average (IMF, 2022). The cost-to-income ratio of Sparkassen in Germany is with 70.8% one of the highest in Europe. However, the cost-to-asset ratio in Germany of 1.3% is in line with the European average, which is 1.2% (IMF, 2022). This gives a hint, that the problem is not just at the costs side, but more at the revenue side of German banks.

High competition in combination with low interest rates and flat yield curves led to a steady decrease of Interest Income in Germany. Figure 16 provides sufficient overview of the development and shows high correlation between decreasing revenues and EURIBOR in combination with Government debt yield, which even got negative since 2014. In reality, it means that banks have to pay interest on the total amount parked at the central bank. From a historical point of view, it is the

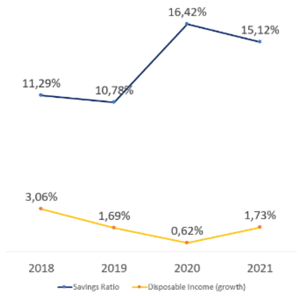

Figure 17:
Savings-ratio and disposable income
Source: Destasis, 2022

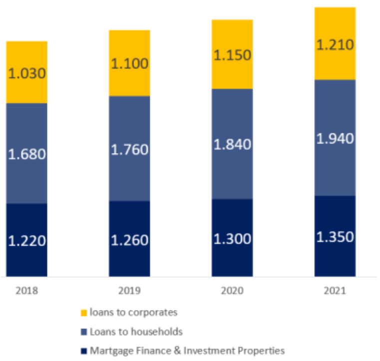

Figure 18:
Split of loans by type in Germany (€bn.)
Source: Statista, 2022

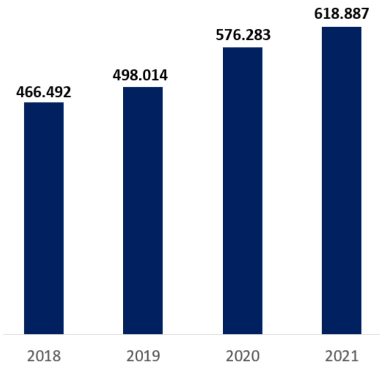

Figure 19:
Sight Deposits – Corporate Customers (€bn.)
Source: Euro Area Statistics, 2022

first-time banks a facing this issue. Germans are risk averse, and even if the shareholders increased during 2021, it fell again in 2022 (Figure 11). But especially investing becomes more important, as there is an increasing pension gap in Germany (Deutsches Aktieninstitut, 2022). Following, people preferably park their money in saving accounts, but receive zero interest. The savings-ratio (Total disposable income/savings adjusted by household growth) grew sharply in the pandemic 2020, peaking at 16,4% (Figure 17). If banks are not able to provide loans by using this savings, they have no other choice than parking the money at the ECB. Furthermore, it is compulsory for banks to park 1% of total deposits with maturities below two years, which can include overnight deposits and debt securities (ECB, 2022). Indeed, the relaxed money policy of ECB leads to higher demand for loans. Supporting the loan demand, prices for real estate grew rapidly between 2020-2021. Counting in the seven biggest cities in Germany, house prices increased by 143% (IMF, 2022). But every loan category (mortgage & investment property finance, individual loans, corporate loans) grew between 2018 – 2021 (Figure 18). Simultaneously, sight deposits of corporates grew in the same period even stronger (Figure 19). In sum, banks were able to increase loan volumes, but did not benefit from that due to low interest rates and high deposits, which carry a negative interest rate, if parked. Another major revenue driver for banks is Net Commission Income (NCI). Commissions can come from investment products (e.g., mutual funds), trade-finance business or other fee carrying banking service. Since banks face high competition, they are afraid of increasing fees and losing customers (IMF, 2022). This trend is catalysed by the high internet penetration for younger generations, which is also the generation becoming more interested in investing. Instead of buying mutual funds at their local bank with management fees up to 5%, they invest in a diversified Exchange Trade Fund (ETF) via online brokers being significantly cheaper. In a European comparison, impairments on faulty loans are lower in the German market. Especially banks in countries with low bank profitability are suffering from non-performing loans, Spain and Italy are leading the list (IMF, 2022).

Private large banks, sparkassen and cooperative banks all three profit ratios declined over the last decade, but to a different extend. Sparkassen and cooperative banks outperformed others in terms of Return on Equity and Return on Assets. This can be explained with more possibilities of scale, as each Sparkasse is independent, does not face regional competition, and sharing IT-systems Germany-wide (IMF, 2022) (Table 1).

Current Trends and Developments in Banking & Finance

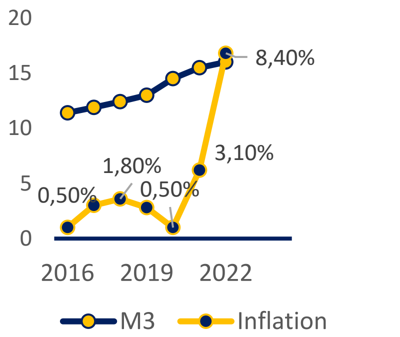

Figure 20:
M3 in €trn. and Inflation in % (2016-2022)
Source: Statista, 2022

40% of total Dollars worldwide have been printed since the outbreak of COVID-19 (Nasdaq, 2021). But also in the Eurozone, ECB had to support the economy financially. Figure 20 shows the development of the money supply (M3) and the inflation rates in Europe. Money supply M3 includes liquid money in circulation and deposits (M1), money market mutual funds (M2) and large saving deposits (M3) (OECD, 2022). In February 2022, Russia started its invasion of Ukraine. NATO countries reacted with sanctions against Russia, cutting trade relations excluding some necessities such as medicine. Especially Germany and other Eastern European countries heavily rely on oil and gas which they imported from Russia before. Figure 21 underlines, how much natural gas Germany imported before the outbreak of the war, and confirms, that's Russia was responsible for more than half of the imports. The logical consequence was an increase in oil and gas prices, which are also directly correlated to energy prices. This affects almost every company, as cheap Russian gas catalysed the growth of the German economy since decades. Excessive money printing due to the pandemic in combination with increased costs and decreased output due to geopolitical tensions fired inflation rates, peaking at 10.9% per 09/2022 (Statista, 2022).

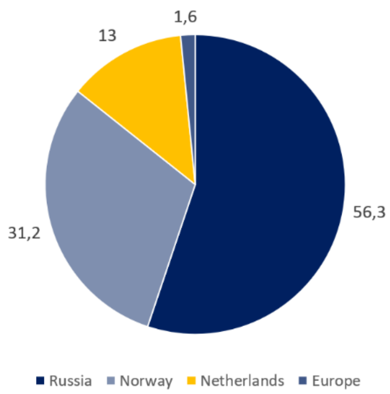

Figure 21:
Imports of natural gas before the war, in bn. m^3 (Germany)
Source: BNA, 2022

Banks are directly not affected by higher energy prices, but indirectly, banks will face mixed consequences. Net interest Income, banks most important source of revenue, may benefit from developments. In Q1 2022, the biggest European banks expected an increase of 6% on NII (Deutsche Bank, 2022). Market interest rates increased sharper than prime rates, affecting each loans category: Housing loans, which had an interest of 1.3%, increased to 2.0%, but also corporate loans increased by 60-70bps. At the other hand, demand for loans in general decrease due to the devaluation of money. Corporates, but also normal population, may wait with bigger investments, also caused by the insecurity about future electricity supply. Contrary to this, loans for corporates as well as private customers grew by 5.1% and 4.7%, respectively. But this is a typical macroeconomic development, as companies try to gather a liquidity reserve in expectation of rising operating cost and interest rates (Deutsche Bank, 2022). Europe and USA are expected to slide into a weak recession during the next year. Total loan loss provision is likely to increase, as some businesses will face bankruptcy, and loans will default. Banks will also feel inflation at their operating expenses, expecting to raise by 7% until 2023 (e.g., office materials, personal expenses, Software…). The liquidity-coverage-ratio (LCR) is with 165% stable, the CET-1 ratio fell by 0.4 percentage points, but the leverage-ratio stayed constant at 4.8%. The CET-1 (Common-Equity-Tier 1) ratio is computed as percentage of risk weighted assets and is held in stock, retained earnings or safe equity instruments, being able to compensate for unexpected losses, without getting liquidity problems. This can be explained with the adjustment of ratings and regulatory due to the international tensions, risk weighted asset increased (Deutsche Bank, 2022). Further developments are difficult to predict, as they depend on Russia's next escalation steps, but other than the financial crisis in 2008/2009, Banks might not be the party suffering most, but also can benefit from rising interest rates.

Company Analysis

Strategy 2024

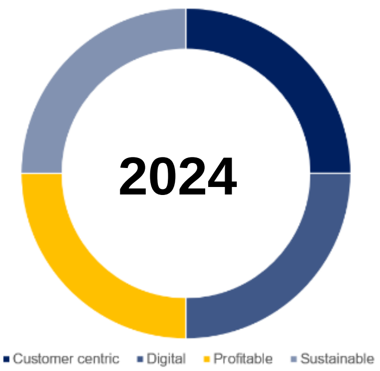

Figure 22:
Strategy 2024 values
Source: Commerzbank, 2022

Commerzbank never completely recovered from the financial crisis in 2008/2009, the stock price development shows it impressively. Since that and under the CEO Martin Zielke, it tried to implement several new strategies to become more efficient, but with little success. Strategy 2024 is the newest and supersedes the previous Strategy 5.0, which was implemented in 2019 and included milestones which need to be fulfilled until 2023. Cornerstones where the rollout of mobile banking in combination with the Comdirect integration, a strong branch network, €750mio. investments into digital infrastructure, higher cost efficiency and the disposal of mBank (Commerzbank, 2019). Ex-CEO Zielke was misguided by the imagination of Commerzbank, a "digital technology company", while losing the focus of a bank's business model.

At a first glance, Strategy 2024 introduced by Manfred Knof seems more promising. Figure 22 shows Commerzbank´s core values: Customer centric, digital, profitable, and sustainable (Commerzbank, 2022). As described in chapter two, the bank's branch strategy changed fundamentally in 2021, keeping smaller branches closed and focusing on fewer branches (~450) with integrated premium client advisory (~220) for better profitability. Additionally, international locations shall be reduced by 15 until 2024. Consequently, the number of full-time employees (FTE) will be reduced from 10,800 in 2020 to 7,300 in 2024. Another major step towards decreasing costs was the outsourcing of research to ODDO BHF in 2021. Commerzbank still beliefs, increased profitability mainly requires cost reductions, planning to keep revenues (NII + NCI) in both Corporate and Private & Small Business Clients (PSBC) segments constant. The Cost-To-Income Ratio (CIR) is computed by dividing operative expenses and income (ECB, 2018), and shall be improved from 78% in 2021 to 61% in 2024. Risk Weighted Assets (RWA) describes all bank assets classified according to their risk, the efficiency is higher if interest rate is higher and RWA lower. Each relationship manager can see the RWA efficiency at any time, and it is a crucial part of yearly feedback. Especially the proportion of portfolios with RWA efficiency >3%shall be reduced from 34% to 22% (Commerzbank, 2022). As the strategy paper was published in the beginning of March 2022 (a few days before Russian invasion), the effect of inflation as well as economic slowdown were not considered. Indeed, Q3 numbers show an increase in interest income by 25.4%, but also increased interest expenses (22.5%) and risk result (from €257mio. to €654mio.), compared to Q3 2021 (Commerzbank, 2022).

Towards the digital infrastructure, Commerzbank is planning to invest €1,7bn. until 2024, and most of their software shall be saved on cloud. It increased operating efficiency and makes it easier to meet regulatory requirements, even though especially banks need to be careful in which country they store customer data (McKinsey, 2011). The integration of Comdirect was also a milestone towards better online product offer, having AuM of 1bn in their Robo-Advisor. As per now, the bank is using Rumba, a software introduced in the 1980´s, storing most of the customer data. Most IT-specialists with knowledge about this software already are retired or passed away. That can bring difficulties if there are major issues with Rumba as well as when switching to newer systems. The €1.7bn especially need to be invested in faster systems for employees, and not undertaking expensive digital ventures, such as Paydirect a few years ago: An app which should replace Paypal for instant online transactions. The project turned out to be a flop, with just 45 out of 1,000 biggest online shops in Germany using it (Grothe & Barsch, 2021). Another approach for banks to grow is to acquirer competitors. Commerzbank launched three funds with a volume of €550mio., acquiring promising companies in FinTech, InsurTech, Blockchain and Defi (e.g., invested in eToro).

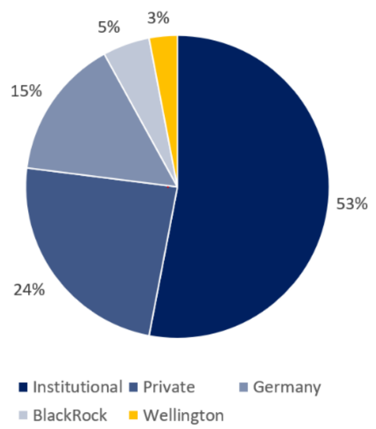

Figure 23:
Shareholder Structure
Source: Commerzbank, 2022

Commerzbank is operating carbon-neutral since 2015 and wants to undertake further steps towards more sustainability. But climate neutrality just means compensating carbon emission with CO2-Certificates, which can be bought and traded any time. The bank wants to become "Net Zero" for its own operations in 2040, and their customer portfolio in 2050, respectively. ESG is not just important to behave in a moral way, but also provides space for new products, increasing revenue. Green bonds share was 3% out of the total bond issues in 2021, but grew on average 50% from 2015-2021, estimated doubling again until 2023 reaching a total volume of €1,000bn (EPRS, 2021). With Strategy 2024, Commerzbank will introduce a Capital-Return policy. Investors did not have easy times with Commerzbank stock for longer than a decade, and even the German Government had to infuse equity as a result from the financial crisis in 2008/2009. Figure 23 shows the shareholder structure. The largest part are institutional investors with >50%, followed by private with 24%. Asset Managers BlackRock and Wellington are holding 5% and 3%, respectively. In 2022, the bank is planning to pay out 30% of net profits as dividends. Most important condition is a CET-1 ratio, which has to be 200bps above the minimum, after pay-out. Dividends could be also replaced with share buy-backs and can range from 30%-50% of net profits (Commerzbank, 2022). As recently reported in Q3, the bank already reached net profits of €963mio. and sticks to the intentioned dividend pay-out. Its CET-1 ratio is with 13.8% percent also higher than in the previous year (13.6%). The current CET-1 minimum requirements are 10.6%, steadily increased from last year's 10.5% (ECB, 2022). Investors are happy, and in contradiction the market, Commerzbank stock is performing well, interest rates facilitate earnings, the money dig might turn into a bonanza, considering huge deposits from corporate and private clients.

Risk Assessment

The European Banking Authority (EBA) is doing a yearly risk assessment about the European banking system. It considers assets, liabilities, capital, and operational resilience. Commerzbank´s risk will be assessed by using a similar structure and comparing results.

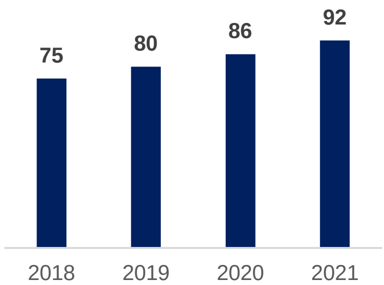

Figure 24:
Mortgage Finance Commerzbank (€bn.)
Source: Commerzbank, 2021

Total loan volumes increased by 2% from 2020 to 2021, mainly driven by loans to households and consumer loans. Especially mortgage finance is raising due to increased liquidity of households and low interest rates. During lockdowns, people spend less money for consumption and started saving more (EBA, 2021). Also, Commerzbank´s mortgage finance volume increased steadily during the last years (Figure 24) (Commerzbank, 2022). It is also the bank´s largest loan segment, followed by corporate and consumer loans. Interest rates for mortgage loans can be fixed or variable. As ECB increased interest rates during 2022, people qualified for a mortgage loan in 2020/2021, agreed on a variable interest rate, are under greater financial pressure now, and an increase of risk result for mortgage finance at Commerzbank is expected, too. This assumption is also confirmed by a different EBA paper, released in 10/2022: Due to inflation in combination with increasing interest rates, high energy prices and economic uncertainty, housing prices fall. This would be challenging for banks, as the property is pledged as collateral. In case of default, the bank still owns the property, and doesn't lose the full loan amount. With decreasing house prices, the value of pledged collateral would decrease, leaving the bank with higher risk (EBA, 2022). The EBA is suggesting monitoring the loan-to-value ratio (LTV), which also decreased in quality since the outbreak of the pandemic. While mortgage finance with LTV <60% increased,

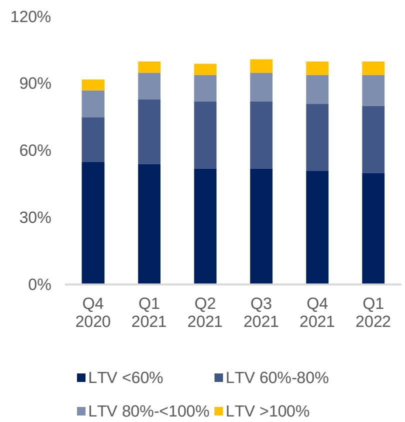

Figure 25:
Loan-to-Value Ratio Europe
Source: EBA, 2022

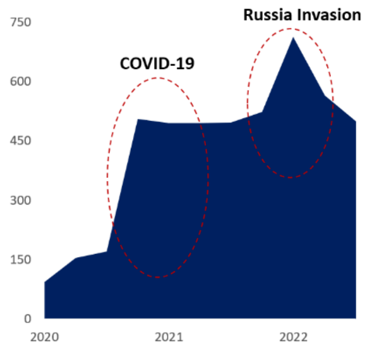

Figure 26:
Commerzbank´s Top Level Adjustments (€mn.)
Source: Commerzbank, 2022

mortgage finance with LTV of >100% and LTV of 80%-100% decreased (Figure 25).

Loans to non-European counterparties hold a significant and stable share in bank´s portfolios (20% of loans, advances, and debt securities in 2021). The Russian invasion changed the geopolitical situation of Europe on a long run. Equity and debt investors gained awareness about exposures in dictatorship-like countries. Human Rights Watch (HRW) introduced a platform, showing total exposure for a country in e.g., an ETF (HRW, 2022). Commerzbank´s Exposure at Default (EaD) in Russia is totalling €1,3bn., which includes €400mio. to Russian corporates and €500mio. to Russian banks, mainly through Trade Finance. The major stake is very short-term (> 1 year), and combined Ukraine and Belarus exposure is not exceeding €100mio. (Commerzbank, 2022). Commerzbank reported in Q3 2022 with €654mio. a significant higher risk result compared to Q3 2021 with €257mio. Since Covid-19, the regulator is allowing banks to use so called "top level adjustments" (TLA), which are part of their risk result. This TLA´s serve the purpose to cover losses from defaulted loans. Banks are computing Expected Credit Losses (ECL) under IFRS 9 by developing judgments about the future and applying this data in models, based on historical developments (PWC, 2020). In time of great economic uncertainty, these models exceed their limits. Commerzbank started to build up a TLA in the beginning of the COVID-19 pandemic (Figure 26), reaching €505mio. in Q4 2020. In the beginning, it was planned to remove the TLA, when Covid situation normalized. As soon as the next external shock came with the war, the bank was allowed to keep its TLA, totalling still €500mio. in Q3 2022 (Commerzbank, 2022).

Considering all uncertainties, Commerzbank´s Non-Performing Loan ratio (NPL) is with 0.9% better than average European banks, reaching 1.85% (ECB, 2022). Every bank´s exposures receive an internal rating, ranging from 1.0 (best) to 6.5 (worst). Commerzbank loans with the following rating classes are included in the Loan Loss Provision (LLP), which is needed to compute the NPL ratio: Loans with a rating of 6.0 are >90 days due, 6.2/6.3 includes companies which are unlikely to pay-back, the bank is expecting concessions. Ratings from 6.5 or 6.5 are customers which reached insolvency and the bank has to recall the loans (Commerzbank, 2022). The ratings are provided by the sector CO's and carry a probability of default (PD). Total amount of collateral needs to be considered for the calculations as well, with higher collateral, the bank will suffer lower losses in case of default. The NPL ratio decreased European-wide in all segments, for both corporate and private customers. EBA is considering loans to SME´s and commercial real estate as most risky, holding NPL ratios of 5.7% and 5.9% in 2021, respectively (EBA, 2021). However, comparing 2020 with 2021 shows a decrease in both segments. Large part of Commerzbank´s business is depending on SME´s, which are also dominating the German economy. NPL is also decreasing for Commerzbank loans to SME´s and mortgage finance, and additionally being below average. An unusual movement was found in the NPL ratio for loans to large international corporates. Different to all other segments, the ratio increased by 50bps from 2020 to 2021 in Europe. Commerzbank´s core business is not big international corporates, even though it has a specialized relationship banking team in Frankfurt.

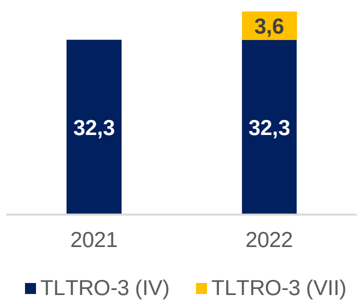

Figure 27:
TLTRO volume Commerzbank in €bn.
Source: Commerzbank, 2021

On the liabilities side, deposits and ECB funding continuously increased in Europe. To counter the effects of the pandemic, ECB improved the TLTRO-3 program in April 2020. Further TLTRO-3 operations were introduced, and discounts offered, the interest rate remains at 50bps lower than the average rate applied in the Eurosystem and the maximum amount possible was increased from 50% to 55% of stock eligible loans (EBA, 2021). These favourable conditions can even result in a negative interest applied, i.e., free money. Commerzbank used the TLTRO-3 opportunity as well, reported in the balance sheet under deposits from central banks. The bank takes advantage of the maximum possible amount, totalling €35.9bn. in 2021 (Commerzbank, 2021) (Figure 27). However, the EBA is warning banks not to become too dependent on central bank funding, as the ECB provides since 2011. Even though the liquidity ratio of banks is good and would allow a payback, most of TLTRO-3 volume will expire in 2023 (EBA, 2021. In Q3 2022, Commerzbank reported liquidity totalling €127,2bn., which would be more than enough to repay the whole TLTRO-3 programme. Most of the European banks have high liquidity, mainly due to high deposit inflows from customers. The Net-stable-funding ratio (NSFR), other than the LCR, provides indication about the liquidity on a long-run, setting incentives to fund with stable sources. Total available sources of stable funding need to be divided by total required stable funding and should exceed 100%. The European average is 129% and increases steadily (EBA, 2021). Especially deposits with longer maturities are important for that calculation. Commerzbank is not providing a detailed overview about deposits and their maturities but distinguishes between long- and short-term assets and liabilities (Figure 28). Especially for longer-term assets and liabilities, Commerzbank is in a comfortable position, having way more assets than liabilities. Just at the short-term positions, liabilities exceed assets. The €127,2bn. in high liquidity is necessary to cover for unexpected events.

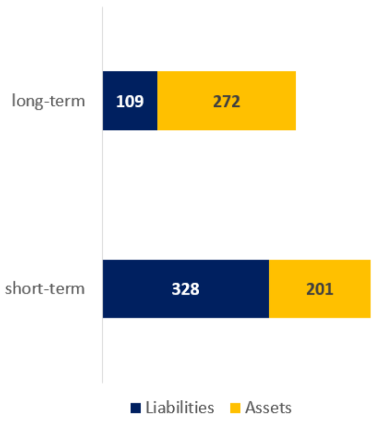

Figure 28:
Assets and Liabilities by maturity in €bn.
Source: Commerzbank, 2021

Connected to the favourable funding opportunities ECB provides, capital ratios of European banks continuously improved over the last years. CET-1 ratio was

15.8% way above the minimum amount required, and also increased compared to 2020. With 13.8%, Commerzbank´s CET-1 ratio was below average, but still above minimum. It can be explained with higher earnings for Commerzbank, but for all banks in Europe in general, which were retained. Banks leverage ratio went up by 60bps from 2020-2021 to 5.9%, explained with the ECB decision allowing to exclude certain central bank exposures (EBA, 2021). Commerzbank's leverage ratio is in Q3 2022 with 4.5% below average, but above minimum requirement of 3%. RWA increased for Commerzbank as well as for the European average, but with a lower slope than total assets. This is connected to the rise in cash balances from central banks, which are counted as risk-free. Guarantees securing the credit flow support lower RWA, too.

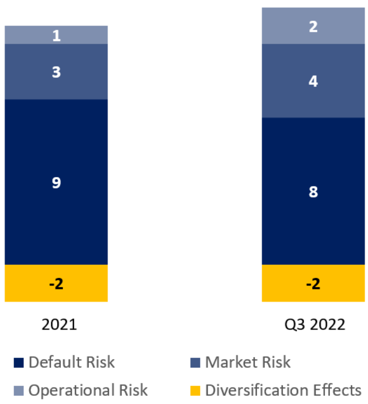

Figure 29:
Economic required capital (€bn.)
Source: Commerzbank, 2022

In sum, Commerzbank's proofed a stable risk management in past, and is equipped for future scenarios. Its Risk Bearing Capacity ratio (RBC) remained in Q3 2022 with 177% on a decent level (176% in Q3 2021) and is above the required 100%. Figure 29 shows the economic required capital, which slightly increased due to the increase in market risk connected to recent Russia-Ukraine war. This outlook also gets confirmed by comparing credit risk parameters for Commerzbank´s different segments: While the exposure at default was totalling €572bn. in Q3 2022, the bank just had EaD of €470bn. in Q3 2021. The PSBC segments remained constant, while CC grew both in EaD and Expected Loss (EL). However, the risk density (=EaD/EL) decreased, comparing both quarters (Commerzbank, 2022). If divided into regions, Eastern Europe is attributing the most risk density bps. in 2022 (Figure 30). Next to financial risks, Commerzbank bears legal risk, caused by its Polish subsidary mBank. It offered foreign currency loans (in CHF) to customers, but the PLN/CHF lost in value, customers now requirer compensation. Additionally, mBank loan contracts with customers were faulty, and the court decided in favour of borrowers (1,338 cases, whereof 95 decided in favor of the subsidiary). MBank build provisions totalling €1.4bn. for upcoming risk regard that matter in future, including settlement payments and lawsuit actions (Commerzbank, 2022).

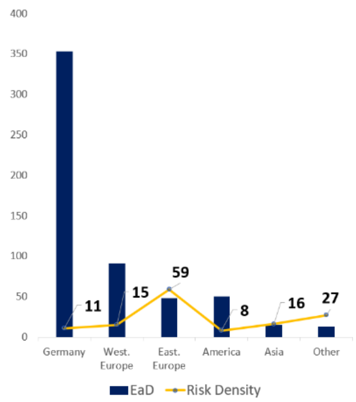

Figure 30:
EaD in €bn. and Risk Density in bps.
Source: Commerzbank, 2022

Cost & Revenue Drivers

Retail and Commercial banks nowadays face a lot of competition, ranging from Fintech´s, BigTech´s and an overbanked landscape. More and more players are trying to get a piece of the cake, catalysing technical innovation, such as blockchain and AI. At the other hand, margins are tight, and negative prime rates put pressure on banks deposits.

Commerzbank, as all other banks, shifting to a customer-centric approach. The customer, for both CC and PSBC segments, it is the major source of revenue. As technology es evolving fast, new approaches, serving customers with more comfort and faster services, gain in relevance. 20 years ago, people had to go to branches, sign physically and pay up to 5% fees for stock purchases, while nowadays, it can be done in a couple of minutes almost for free. With an adjustment of business model, new revenue streams can be discovered. Banks collect huge amount of customer data every day, but they need to be careful which is allowed to be sold or shared. Banks can charge intermediaries for services such as identity authentication (KPMG, 2021). Commerzbank has to do a Know-Your-Customer process for every onboarded client anyways, preventing money laundry and violation of possible sanctions against countries or individuals. Lockdowns due to Covid-19 were a lucky coincidence for the bank, as many branches had to shut down. In that time, the bank analysed, which branches are really needed, and kept the others still after lockdown restrictions closed. This will save cost in future, but not for the price of angry customers not having a branch anymore.

$$\boxed{P_t = NII_t + OI_t - (BI_t + Oc_t)}$$

Figure 31:
Profit equation for banks
Source: Bolt et al. 2012

In terms of financial cost and profit drivers, studies have found, that the GDP growth is correlated to banks profits. For each percent decrease in GDP, Return on Total Banks Assets (ROT) decrease by 0.25 percentage points. Additionally, they found that correlation is higher in times of recession, rather than under normal economic conditions (Bolt et al. 2012). This is due to the loans-loss provisions, which are the main driver for this asymmetry. Net Interest Income is the main source of revenue, followed by Net Commission Income. An equation showing banks profit can be defined, including NII, Other Income (including NCI), Bad loans (defaulted loans) and Operating cost (Figure 31). Putting this data into a regression model shows that there is also evidence between the high correlation of NII and long-term interest rates. An increase in one percentage point of long-term interest rates leads to an increase in NII of 0.11%. The ECB is providing three key interest rates, changing on a regular basis, depending on macroeconomic conditions as inflation. Main financing rate describes the interest rate for commercial banks if they want to borrow money from the ECB on medium term (2,00% per October 2022). The Marginal Lending Rate includes the interest rate for commercial banks if they want to borrow money on a short term (2.25% per October 2022). Last but not least, the rate on deposits facilities says, how much banks receive/have to pay on deposits, which they park at the central bank (1.50% per October 2022) (Figure 32) (ECB, 2022). This is also the rate which was negative (since 2019 -0,50%) and a huge burden to banks.

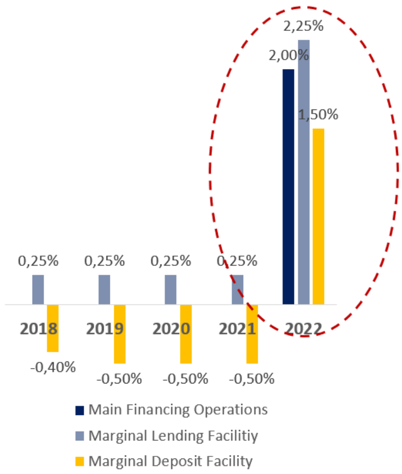

Figure 32:
ECB Key Interest Rates
Source: ECB, 2022

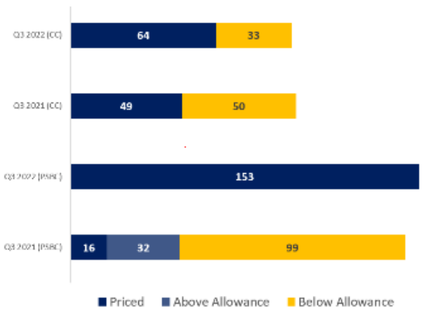

Figure 33:
Deposits of PSBC and CC in €bn.
Source: Commerzbank, 2022

Especially during Covid-19 pandemic, deposits grew, and banks had to pay more and more negative interest rate. After some time, Commerzbank was able to pass that expanse in the CC segment to their customers, but in the PSBC segment, clients would not accept a negative interest rate on their deposits. Courts in Germany decided in favour of customers, not allowing banks to take negative interest rates from private customers, saying: Just someone who hast debt, needs to pay and interest rate (Verbraucherzentrale, 2022). In particular, the increase in deposit facility interest rate in 2022 will boost profits and milder costs. As seen in Figure 33, Commerzbank has deposits in Q3 2022 similar to Q3 2021. But in 2021, the bank classified PSBC deposits with (i) above allowance, (ii) below allowance, (iii) priced (Commerzbank, 2021). (i) includes deposits, where the customer did not pay the negative interest rate but are above allowance. Allowance in that sense describes a negotiated cap, that the customer can deposit money without paying negative interest (e.g., €100,000). Next, (ii) reflects all deposits, which are below allowance (cap) and consequently not priced. Just (iii) includes deposits, which are priced. Comparing both years, Commerzbank will have €131bn. worth of PSBC deposits less in their books, which are unpriced. The impact of CC segment is a little lower but will still save the bank from €33bn. worth of deposits, which would be unpriced. But the change in the deposit facility key interest rate will not just decrease expenses due to missing negative not to customer forwarded interest. Commerzbank will receive a positive interest rate (1.50% since October 2022), which they will partly forward to the customer, but also keep a spread for itself. The key interest rates are expected to increase further, adding 50bps in December 2022, and another 25bps in 2023 (Reuters, 2022). This can further increase profits, but at some point, interest rates will normalize.

In exchange for higher key interest rates, the ECB wants to cut subsidies for banks. TLTRO-3 programmes provided banks with very cheap money, but Christine Lagarde will increase borrowing costs, as the ECB´s balance sheet shall become smaller (Reuters, 2022). It makes sense, because for now, banks can park their cheap TLTRO-3 money at the central bank and benefit from a risk-free return. The difference between 1.50% on deposit facilities and the 0,00% or even negative interest rate on TLTRO-3 loans would be a simple arbitrage-strategy, which the ECB will remove. Banks cost, such as operational costs or provisions for defaulted loans, are correlated with the GDP as well as with the number of unem ployed people in a country. For each percentage point of fall in GDP, a bank will suffer 0.9% additional loan losses in a recession scenario. The number of unemployed is correlated with net provisions, higher unemployment leads to more defaulted loans (Bolt et al. 2012).

Regulatory Required Capital

Due to the risky nature of banks business, authorities require them to hold a minimum amount of capital. The capital requirements are defined in the Capital Requirement Regulation (CRR), which consist of different components.

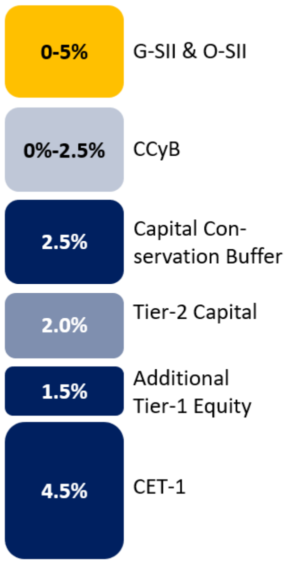

Figure 34:
Banks required capital
Source: Bundesbank, 2019

Basel III was introduced after the financial crisis in 2008/2009. The Common Equity Tier-1 ratio (CET-1) builds the fundament and has to be 4.5%. It includes retained earnings, common shares, other comprehensive income, and surplus resulting from the issuance of shares. ECB introduced another component called additional Tier 1 Equity, which need to be 1.5%. In total, Common Tier-1 Equity needs to be 6%. Tier-2 capital is due to its worse liquidity less secure than Tier-1 capital and includes subordinate term debt (less senior than normal debt) hybrid instruments (e.g., preferred stock) and revaluation reserves (e.g., revaluation of real estate). It needs to be at least 2%. Next comes the capital conservation buffer, totalling 2.5%, and includes similar items as CET-1. Banks are required to build up such a conservation buffer, that they are able to cover losses in downturns. If a bank had a loss in the prior year, it could use its capital conservation, which will decrease. In financial crisis, even banks in losses paid dividends, and melted down reserves. With the introduced buffer, certain rules apply, when it comes to pay-outs to investors: When the bank has a CET-1 ratio of at least 250bps above the minimum requirement, it can pay out as much as it wants. From 250bps-187.5bps, it can pay out up to 60% of net profits. Between 187.5bps-125bps above minimum CET-1 ratio, the possible amount decreases to 40%. From 125bps-62.5bps, just 20% of net profits can be paid out to investors, and all banks with a conservation buffer smaller than 62.5bps above minimum CET-1 requirement are not allowed to pay out anything (Bundesbank, 2019).

This is also relevant to Commerzbank, as it plans to distribute 30%-50% of net profits to shareholders annually, which will be done through dividend pay-outs and share buy-backs. As per Q3 2022, the bank had a CET-1 ratio of 13.8%, comfortably above the current required 10.6%. Commerzbank itself stated out, that the promised pay-out just will be done, if CET-1 ratio is at least 200bps. above requirement. (Commerzbank, 2022)

Countercyclical Capital Buffer (CCyB) has to be built up by banks in economic prospering times, that they can cushion risk in crisis, without breaking any minimum capital requirements. If they would do so, they legally wouldn't be allowed to provide further loans, which could put the whole domestic economy into a downward spiral. CCyB can range from 0.00%-2.50%, and per decision dating 11/2022, banks are required to hold 0.75% from 02/2023 onwards (BaFin, 2022).

Other systemically important institutions buffer (O-SII) also has to be hold in CET-1 capital and applies just to systematically relevant institutions in a country. Commerzbank is defined as systematically relevant in Germany and is obligated to keep 1.25%. Global systemically important institutions (G-SII) does not apply to Commerzbank, just Deutsche Bank is obligated to hold 1.50% in Germany (Bafin, 2022)

Forecast Rationale

Forecast – Assets & Liabilities

At the very first, balance sheet of a bank needs to be forecasted. Depending on the balance sheet, the Profit & Loss statement will be forecasted secondly. Lastly, the Cash Flow statement can be derived from both, taking change in assets & liabilities, net profits, and adjustments regarding equity (Massari et. Al, 2014).

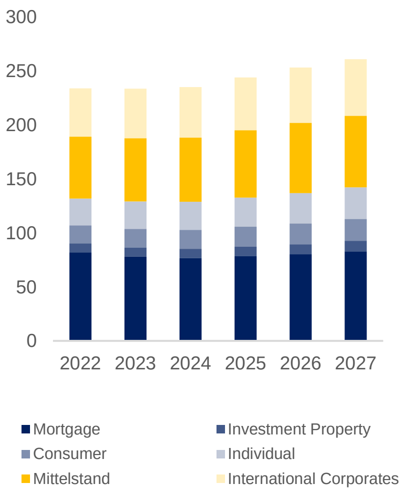

Figure 35:
Forecast – Loans (€bn.)
Source: Analysts estimate

A crucial part of the active side on the Commerzbank balance sheet are loans. Other than for normal companies, loans are raw material for banks. Figure 35 shows the loan volume forecasted, divided by type of loans. Other than mortgage finance, every loan type is slightly increasing until 2027. This is due to the increased interest rates, which make mortgage finance, such as every loan, more expensive. But different here, due to cheap money, a lot of people bought real estate on credit, only being able to afford it due to almost zero interest rates. It became a popular business model to buy property, rent it, and repay the credit with the rent. This will not be possible to that extend anymore. Each loan category got forecasted with an individual growth rate, equal to the total volume forecasted for Germany. E.g., Individual loans are expected to increase from 2022 to 2023 by 1,15%, so will Commerzbank individual loan portfolio increase by the same rate, and a constant market share derived from the four years average is assumed. If no reliable forecast was found, the expected total volume in Germany for the specific loan type was forecasted with the expected GDP. In 2022, Commerzbank´s loan portfolio is expected to reach €230bn., slightly lower than in previous year. Due to inflation, money gets devaluated, which would result in strongly increasing loan volumes. But at the same time, companies and private households are saving more, instead of doing big investments, offsetting the effects.

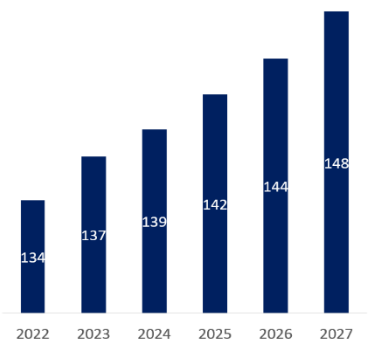

Figure 36:
Forecast – Securities (€bn.)
Source: Analysts estimate

Next to loans, active side of Commerzbank forecasted business balance sheet contains debt and equity securities, such as bonds. A money parking position is also included, as banks are obligated to deposit 1% of total deposits with maturity <2 years at the ECB. They are forecasted with the inflation and adjusted GDP growth.

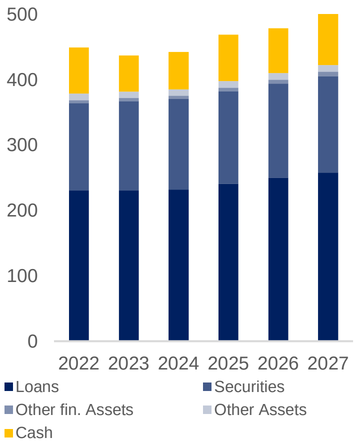

Figure 37:
Forecast – Assets (€bn.)
Source: Analysts estimate

Other financial assets in the business balance sheet include trading assets, derivatives, and hedging instruments. Their growth rate depends on deposit development, asset held for sale and disposal of groups decrease linear until 2026, with the assumption that Commerzbank will not dispose any major business units. The other assets section contains tangible, intangible and tax assets. Goodwill is staying zero, assumed Commerzbank will also not do any major acquisitions. Other fixed assets, such as land and building or material for offices depend on the number of branches and inflation. Figure 37 shows forecasted securities, financial assets, other assets, and total assets until 2027. Commerzbank balance sheet is forecasted to slightly increase until 2027, reaching about €500bn. This is lower than the published Q3 result, which stated out total assets and liabilities at over €500bn. But it is a common strategy for banks to decrease their total balance sheet value at the end of the year, mainly for regulatory purposes regarding capital requirement and stress tests.

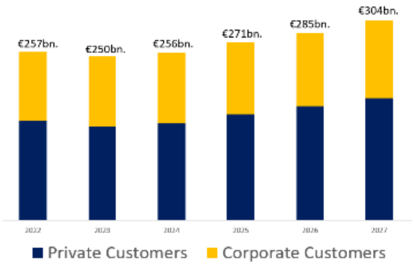

Figure 38:
Forecast – Deposits (€bn.)
Source: Analysts estimate

On the liabilities side of banks and Commerzbank, deposits are the most important position (Massari et. Al, 2014). They are classified in the business balance sheet as sight deposits from private customers and deposits from corporate customers, which also include FX and term deposits (foreign currency). They got forecasted with disposable income, consumption and savings of private households and forecasted corporate deposit volumes in Germany, respectively. Figure 38 shows Commerzbank´s forecasted deposits until 2027. Other than 2023, deposits are expected to grow steadily reaching €304bn. in 2027. The decrease in 2023 can be explained with lower disposable income and savings, connected to inflation and the Russia Ukraine war. Other than in the last decade, deposits became a source of revenue for banks, instead of paying a negative interest rate. With solid growing amounts of deposits, the bank will be able to improve net income significantly from the last years.

(€bn.)	2022	2023	2024	2027
Money Parking	106	99	90	96
Bonds	45	46	49	59
Total	**151**	**145**	**148**	**155**

Table 2:
Forecast – Bonds (€bn.)
Source: Analysts estimate

Other than deposits, bonds on the business balance sheet are also an important source of financing for Commerzbank, including debt securities, money from other banks and central bank. Their growth rate depends mostly on forecasted deposit volume. Most interesting position there are Target long term refinancing operations (TLTRO-3), provided by the ECB to banks, and was especially used since COVID-19 pandemic. TLTRO-3 had very favourable conditions, which even allowed an arbitrage strategy by enjoying a negative interest rate and deposit this money to a positive interest rate at ECB again. This will change from 2023, following, no discounts are included in the forecast, and Commerzbank´s total €35,9bn. in TLTRO-3 are forecasted to be paid back until 2024 completely. Connected to this, the total volume of bonds is decreasing until 2024, seen in the money parking position, where TLTRO-3 is included. From 2024 onwards, bonds are increasing again, peaking at €155bn. in 2027 (Table 2). Trading liabilities got the same growth rate as trading assets but are in 2022 with €2bn. just a minor position. Other liabilities include tax liabilities and other liability positions, depending on loan or deposit development.

Lastly, the equity is most important for calculating minimum capital requirements, and the later valuation. It contains subscribed capital, capital reserve, other reserves, retained earnings and non-controlling interest. Subscribed capital and capital reserve is forecasted to stay constant until 2027. In the retained earnings position, net profits from the income statement, but also dividends to shareholders and additional equity components need to be considered. As stated out in Strategy 2024, Commerzbank intends to pay 30%-50% of net profits after AT-1 payment as dividends to shareholder, if CET-1 ratio is at least 200bps above minimum requirement (Commerzbank, 2022). The bank used AT-1 bonds to improve its CET-1 ratio, this are counting as additional equity components, forecasted to receive a dividend of €190mn. a year, also in line with Q3 2022 results. Figure 39 shows Commerzbank`s equity until 2027. As seen, the equity will increase slowly in the forecast, mainly driven by higher retained earnings, reaching abut €36bn. in 2027. This will allow the bank to increase risk-weighted assets, without jeopardizing minimum capital requirements.

Figure 39:
Forecast – Equity (€bn.)
Source: Analysts estimate

Forecast – Profit & Loss

Commerzbank´s P&L statement is partly deriving from the forecasted business balance sheet and brings with net profits and important component for later valuation. Its main revenue drivers are interest and commission income.

Interest income can be forecasted by applying interest rates on the interest earning assets, which depend on the Euribor and a computed average spread (Massari et. Al, 2014), applied until 2027 for Commerzbank. Interest expenses are computed accordingly, matching interest income and expense result in net interest income (NII). However, Euribor interest rate experienced significant changes due to external circumstances during 2022, forecasted to peak in 2023 at almost 3%, while in the last decade, it was slightly negative. Applying average spreads can become unrealistic, especially because just small percentage changes can lead to a huge difference. If the forecast with average interest spread was not in line with reported Q3 2022 results, individual assumptions have been made and are highlighted in the spreadsheet. Figure 40 shows Commerzbank`s net interest income. Both interest income and expenses increase from 2022 to 2023 due to assumed average spread.

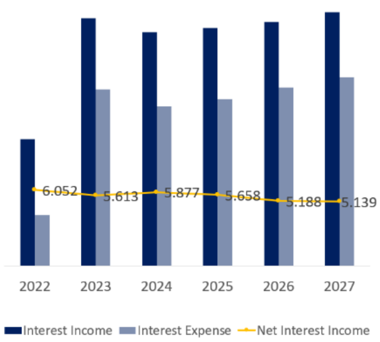

Figure 40:
Forecast – Net Interest Income (€mn.)
Source: Analysts estimate

Net interest income is with over €6bn. also improved compared to €4.8bn. in 2021 but will slightly decrease until 2027. This is because it is also more expensive for banks to refinance at the ECB and lower demand for loans in a recession

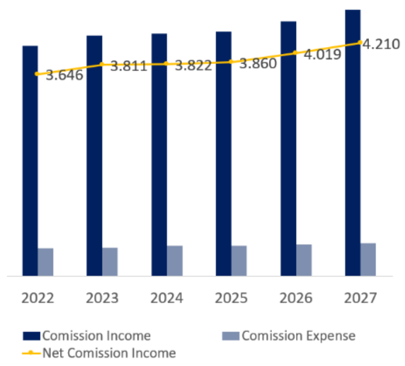

Figure 41:
Forecast – Net Comission Income (€mn.)
Source: Analysts estimate

Next to interest income, commission income will be Commerzbank´s second most important source of revenue. Caused by an overbanked market in Germany, margins in fee business are decreasing and low. Commerzbank confirmed this in their Q3 report, expecting NCI to on a similar level (Commerzbank, 2022). The forecast rationale for NCI is expected volumes for Germany. E.g., commissions from guaranteed business are forecasted with forecast of foreign trade volume, assuming a constant market share, while expenses depend on commissions. To be in line with Q3 2022 results and to reflect the competitive banking landscape, adjustments in the future market share have been made and are marked in the spreadsheet. Figure 41 shows NCI until 2027, which is slightly increasing from 2023 onwards, as the economy is expected to recover from that point. Risk result position in P&L reflects the bank´s expected losses for faulty loans. It is important to mention that the bank has a top-level adjustment, approved by the regulator totalling €500mn. in Q3 2022 (Commerzbank, 2022). Following, the minimum risk result has to be €500mn. in 2022, even if no loan defaulted. However, the forecasted value is about €882mn. and almost double than in 2021, reflecting geoeconomic tensions and inflation. On the costs side, Commerzbank is promising to become more efficient, closing branches and reducing staff. Q3 confirms this outlook, as bank´s do not suffer as much from inflation as other industries. Operating expenses are forecasted as a relative value from numbers of branches and employees. Smaller positions of operating expenses such as audit fees are forecasted with inflation. Taxes depend on net profits, using the corporate tax rate in Germany and historic averages. As seen in figure 42, the banks net profits are increasing until 2024, peaking and €2,094mn. After that, they slightly decrease in stabilize from 2027 onwards, reaching about €1,356bn. This can be explained with the forecasted 3m Euribor rate, for which the forward curve is used. It is expected to increase until end of 2023 to 2.97%, and from 2024 onwards, falling again stabilizing in 2025/2026 at about 2.30% (Chatham, 2022). Furthermore, it was assumed that by 2024, the new strategy will be fully implemented, including closing branches and reducing full time employees. From that year, e.g., salaries will increase with inflation, but in total, personal cost is not decreasing anymore, as no further full-time employee reduction will happen.

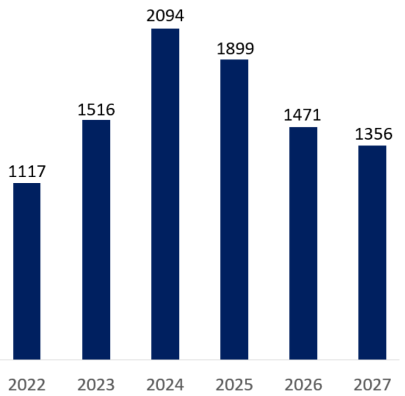

Figure 42:
Forecast – Net Profits (€mn.)
Source: Analysts estimate

Ratio Analysis & Capital Requirement

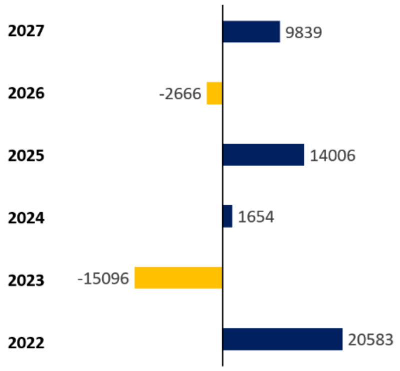

Figure 43:
Forecast – Cash Flows (€mn.)
Source: Analysts estimate

After forecasting the business balance sheet and P&L, cash flow statement can be derived. From net profit, change in assets need to be deducted, and change in liabilities added. Furthermore, adjustments regarding capital distributed, other comprehensive income and changes in ownership interest need to be reduced. Figure 43 shows Commerzbank´s forecasted cash flows. However, total cash flows are not that important when valuing financial companies. Banks usually are high levered entities and restricted in dividend pay-out policy due to minimum capital requirements, following cash flows to investors highly depend on that. A more appropriate approach is e.g., the Cash Flow to Equity (Massari et. Al, 2014). As seen in the figure, cash flows for 2023 are forecasted to be negative (except 2026). This can be explained with the extraordinary high outflow of liabilities, which decreases the cash flow. Behind this outflow are TLTRO-3 liabilities to ECB, which have a duration of 3 years and will be fully repaid in 2024. In 2024, the cash flow is relatively low, too. By comparing the cash flows with Commerzbank's highly liquid cash, no liquidity shortage is expected (€70bn. in 2023).

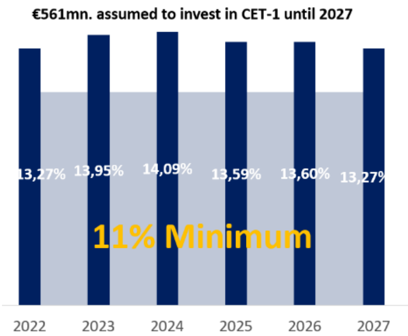

Figure 44:
Forecast – Forecast CET-1
Source: Analysts estimate

As pointed out in chapter three, Commerzbank has to fulfil minimum capital requirements according to CRR. Currently, 10.6% of total risk weighted asset needs to be covered with common equity tier 1. A minimum CET-1 ratio of 11% is assumed, including a buffer. Figure 44 confirms the forecasted ratio always to be higher than 13%, 200bps above minimum requirement. It was assumed that CET-1 ratio is last year's average for the start and end of forecast period, linearly growing until 2027. Next, the dividend pay-out ratio is forecasted to be 30% in 2022, as it was confirmed in Q3. Higher pay-outs are forecasted for 2023 and 2024 with a pay-out ratio of 40% and 50%, respectively. The bank will reach its peak of profitability when new strategy is implemented, for the following years, higher costs are anticipated. The forecast assumes a decrease in dividend pay-out in 2026 to 40% and from 2027 onwards back to 30%, which can be sustained on a long run, without going below minimum capital requirements. As written in their Strategy paper, the bank is aiming for a Return on Tangible Equity (ROTE) of >7,3% in 2024. Figure 45 confirms this outlook and shows, that ROTE will already improve in 2022 to about 4.2% and increases steadily until 2024 slightly above 7%. After that year, it is expected to decrease again, reaching about 4.3%. This decrease can be explained as well with higher forecasted costs from 2024 onwards, furthermore, forecasted profits in figure 42 show a similar movement. Next to ROTE >7%, Commerzbank is also aiming for a cost-to-income (CIR) ratio of about 60%. For that, operating cost is divided by operating income, and forecasted values are regardless of inflation still in line with the bank´s ambition (Figure 46). Connected to previously said, CIR is

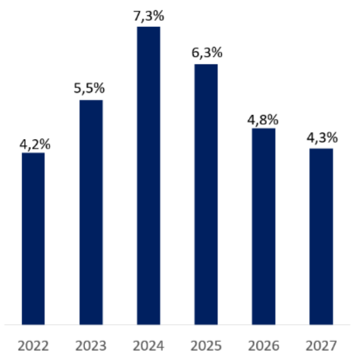

Figure 45:
Forecast – Forecast ROTE
Source: Analysts estimate

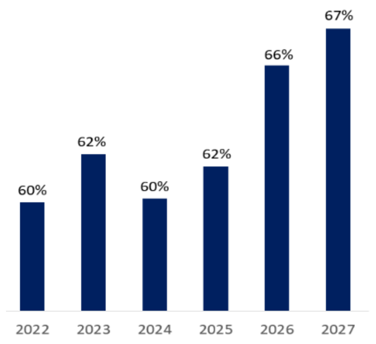

Figure 46:
Forecast – CIR
Source: Analysts estimate

Valuation Metrics	
Risk-free Rate	1.93%
Market Risk Premium	5.7%
Market Return	7.63%
Growth rate	1.99%
Discount Rate	10.02%
Beta (5Y)	1.42

Table 3:
Valuation metrics assumptions
Source: Analysts estimate, Blomberg 12/2022, Statista, 2022

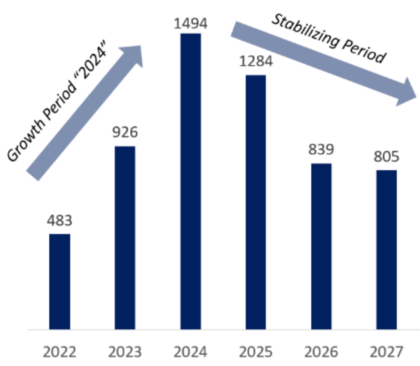

Figure 47:
Forecast –Free Cash Flow to Equity
Source: Analysts estimate

being stable at 60%-62% from 2022-2024. From 2024 to 2027, it will increase slightly. Even with reduction of full-time employees and number of branches, the bank will not be able to reduce costs forever. A certain number of people and branches are necessary to keep operations running, and costs will also increase for banks with inflation on a long run. ´

Valuation

Free Cash Flow to Equity

Valuating banks and financial companies require different techniques than doing a DCF valuation for normal companies. Low Asset/Equity ratios are normal for banks, also Commerzbank´s was and is forecasted to be smaller than 10%. Next, banks core business is financing, and capital is rather a raw material than a source of funding. It will have implication on the valuation, as it will be approached exclusively from the equity side. Discounting free cash flows from operations with the weighted average cost of capital (WACC), such as for traditional companies, makes economically no sense (Massari et. Al, 2014), but the Free Cash Flow to Equity model is more suitable. To estimate cost of capital, the common CAPM formula can be used (E(r)=Rf + Beta *(Rm – Rf)). The risk-free rate can be obtained from liquid long-term government bonds (stable countries). As per 03/12/2022, the yield of a German 10Y government bond was 1.93% (Bloomberg, 2022). The market risk premium is taken from Statista for Germany in 2022, totalling 5.7%. Following, the return of the market (Rm) can be derived, by adding risk free rate and market risk premium together (7.63%). Putting the numbers into equation results in a 10.02% cost of equity and will be used as the discount rate. To obtain the beta, the slope of Commerzbank´s share price development to MDAX was computed, on a weekly basis for three and five years, respectively. For the industry beta, the average from a selected peer group was taken, following the same approach. Due to the nature of business, beta does not need to unlevered (Massari et. Al, 2014).

Figure 47 shows Commerzbank´s forecasted Free Cash Flows to Equity. Starting point for the calculation is net income, which is assumed to also contain investment and financing components. Next, planned changes in Equity needs to be added or subtracted, and separately, further investments in regulatory capital need to be subtracted (Massari et. Al, 2014). This is particularly important for banks, which are expected to increase their RWA base. If instead of retaining earnings, banks would distribute 100% to investors, their CET-1 is decreasing with every increase of RWA and can lead to Capital distribution restrictions by authorities. Free cash flows to equity were discounted for five years until 2026, 2027 represents the terminal value. The eternal growth rate is assumed to be the forecasted inflation of 1.99% for the same year (Statista, 2022).

Scenario Analysis

To show possible share price development under different scenarios, a scenario analysis was made, including best and worst case. This will provide a price range, showing risk and return profile.

Most impactful on a banks free cash flow to equity is consolidated profit or loss, the starting point of calculations. As previously mentioned, Commerzbank´s main source of revenue is net interest and net commission income. Risk result reflects the expected amount of defaulting loans including TLA, operating income are the bank´s major cost to keep operations running. In best case, revenues increase (2%) and Commerzbank will be able to work more efficient, so operating expenses decrease. Risk result stays constant as predicted, no unexpected risk will arise in their loan portfolio. This scenario may include increasing market share due to high online and branch presence, and also fast recovery from geopolitical tensions. In worst case scenario, revenues are decreasing (2%), while costs stay constant and risk result also increases. This can happen, if Russia/Ukraine war escalates more, less loans will be demanded, and Germany will suffer higher recession. Additionally, subsidiary mBank is bearing legal risk regarding CHF loans, which can lead to unexpected cost in future. A decrease in interest rates by ECB earlier than expected would also jeopardize Commerzbank´s growth perspectives. Combined with removed subsidies (e.g., TLTRO-3), Strategy 2024 would be impossible to complete. In excel, percentage increase/decrease can be adjusted (1,5%, 2,0%, 2,5%), allowing to assume different intensities. Figure 48 shows price ranges derived from the analysis. Computed share price in base case is €7,48, using Commerzbank´s 5Y weekly beta. In best case, share can grow by 27.0% to €9,50, while the downside potential is 17.4%.

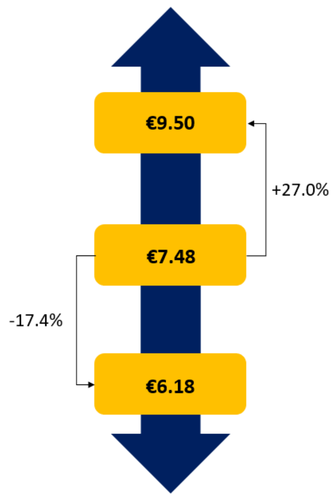

Figure 48:
Scenario Analysis – 2% change
Source: Analysts estimate

Sensitivity Analysis

With a sensitivity anaysis, valuation model becomes more objective and resistant against result manipulation as well as allowing assumption quantification (Patena, 2012). This sensitivity analysis was performed to show the impact of a change in discount rate and eternal growth rate for the terminal value, which is currently with 1.99% forecasted inflation. Terminal value has the largest impact of the later share

Change in Discount Rate	Terminal Value Growth Rate (change)				
	-0,5	-0,25	**0**	0,25	0,5
0,5	6,84 €	6,95 €	**7,06 €**	7,19 €	7,32 €
0,25	7,02 €	7,14 €	**7,27 €**	7,40 €	7,55 €
0	**7,22 €**	**7,35 €**	**7,48 €**	**7,63 €**	**7,78 €**
-0,3	7,43 €	7,57 €	**7,71 €**	7,87 €	8,04 €
-0,5	7,65 €	7,80 €	**7,96 €**	8,13 €	8,31 €

Table 4:
Sensitivity Analysis – Stock Price (€)
Source: Analysts estimate

Change in Discount Rate	Terminal Value Growth Rate (change) -0,5	-0,25	0	0,25	0,5
0,5	8561	8700	**8848**	9004	9170
0,25	8795	8944	**9102**	9271	9450
0	**9042**	**9202**	**9373**	**9554**	**9748**
-0,3	9304	9477	**9661**	9857	10067
-0,5	9582	9768	**9967**	10180	10408

Table 5:
Sensitivity Analysis – Stock Price (€)
Source: Analysts estimate

price, eternal growth rate is not influencing discounted periods before 2027. Possible prices ranges from €6.84 to €8.31, having a downside/upside potential of 8.6% and 11.1%, respectivly. Similar to the scenario analysis, the upside potential is larger than downside potential, underlining a fair investment profile. However, particulary in times of economic downturn and insecurity, risk-free rates and risk premiums can change very quickly, changing discount rates. Across all industries, cost of capital increased in 2022. Especialy business modells depending on political and regualory factors are affected (KPMG, 2022).

Multiples Valuation

For financial companies, not just the intrinsic valuation, but also relative valuation differs from that of normal companies. In practice, multiples valuation is most common, but in this equity research, it will just be complementary in finding the share price. Multiples such as EV/EBITDA or EV/EBIT do not make sense for banks, as due to their nature it is difficult to estimate. Instead, equity multiples are more suitable (Damodaran, 2009). The most common used are price/earnings (p/e) and price/book value of equity (p/b) multiple. But both vary, when looking at different companies inside the industry, and depend on many factors. Assumption upfront a multiple analysis is, that comparable assets have similar prices. Next, a peer group needs to be selected (Figure 51), matching in market size, geography, business model and growth rates. Furthermore, product offer, liability structure (securities/deposits), target customers and profitability (e.g., ROTE). In reality, completely identical companies do not exist, and the choice of a peer group is subjective. There will be a trade-off between number of financial companies included and comparability within the peer group (Massari et. Al, 2014). When selecting peer groups, the current share price should not be influenced by market illiquidity, and an appropriate closing price has to be chosen (e.g., instead of last day, average of last week).

Figure 51:
Selected Peer Group
Source: Analysts estimate, Bloomberg 12/2022

For this relative valuation, the harmonic mean and median will be used to compute a price and price range. Harmonic mean is more precise than arithmetic mean, as it smooths extremes at upper and lower bound of values (= $1/((x_1 + x_2 + x_n)/n)$). Other multiples next to p/e and p/b will be price/deposits, price/tangible book value, price/revenues price/operating profit (Figure 52) (Massari et. Al, 2014). Price/deposits and price/revenues are indirect multiples and not handy on stand-alone basis but can be used additionally to profitability ones. Price/tangible book value is similar to p/e, but intangible assets are reduced, and Tier-1 capital can be used as an estimation. Further adjustments on multiples can be made, if e.g., the

Multiple	Implied Share Price
P/E	€7,29
P/B	€9,14
P/TB	€10,45
P/Deposits	€7,99
P/Revenue	€9,36
P/Op. Profit	€3,36

Figure 52:
Implied Price – Median
Source: Analysts estimate, Bloomberg 12/2022

bank holds large amount of excess capital (capital which is not needed due to lower risk-weighted assets to sustain capital requirements). Figure 52 shows selected multiples. Following, a regression analysis was made, using p/e as the dependent variable, and market capitalization, Securities/Deposits and 3M beta as independent variables.

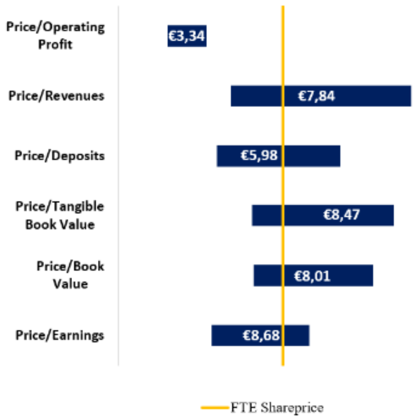

Figure 53:
Football Field & HM – Multiples Valuation
Source: Analysts estimate, Bloomberg 12/2022

From that, Commerzbank's share price was computed for p/e multiple, resulting €7,42. The different used multiples lead to huge price ranges, depending on the multiple. The football field graph (Figure 53) shows price ranges for the selected multiples, considering the 25% and 75% quartile as well as the computes share price via flow to equity approach. However, Figure 52 represents selected multiples and implied share value by using the median and is slightly higher than the harmonic mean. Additionally, multiples imply partly significantly different share prices such as Price/Operating Profit (€3,36) vs. Price/Tangible Book Value (€10,45). Taking the average of implied multiples via median results in a share price of €7,93. These values will be used to support the FTE valuation but is due to big price ranges and subjectiveness of peer group choice not sufficient on a stand-alone basis.

Conclusion

Previous analysis in chapter one and two show, that the German banking industry is facing high competition, profitability is suffering from that. It also hit Commerzbank; NCI growth opportunities are restricted (Commerzbank, 2022). In addition, low interest rates were a huge burden for banks in the last decade, making customer deposits a burden bearing negative 0.4% interest. This changed in 2022: With Covid-19 pandemic and government support for economy, large portion of money was printed during the last years, geopolitical tensions catalysed inflation. ECB was pushed to increase interest rates, which is particularly beneficial for banks, as for all, NII grew YoY. At the other hand, risk of loan default increases, especially with mortgage loans, but also hitting other loan categories (Bloomberg, 2022). Commerzbank was allowed by the regulator to keep TLA, which implies they are expecting higher losses due to the current crisis.

But regardless of external effects, Commerzbank restructured with Strategy 2024 internally, showing first signs of improvement. KPI´s of Strategy 2024 are FTE and branch reduction, but also ROTE >7% and CIR of 60% (Commerzbank, 2022). Even though slightly below, forecasted values confirm the positive outlook. CIR will just grow above 60% to 65% after 2024 due to inflation, ROTE of about 7% will be reached by 2024. However, higher interest rates and cost reduction cannot continue forever, also depending on the outcome of the current crisis. ROTE as well as net income and free cash flow to equity are forecasted to peak in 2024, but higher cost and from that year, decreasing interest rate will decrease values again, stabilizing from 2027 (Terminal Value) onwards. Intrinsic valuation using discounted free cash flow to equity approach provides a share price of €7,48, when taking 10.02% as discount rate. Different discount rates can be applied, depending on Commerzbank/industry beta, weekly over 3 or 5 years, respectively. 5 years was chosen, as it reflects the bank´s risk more independent from recent crisis years. In Commerzbank´s case, its own beta is also more appropriate than industry beta. The bank carries higher risk than other banks, taking legal risk due to mBank´s CHF loans and several previously failed strategies including management change into account. Resulting cost of capital with 10.02% at the upper range in German average (10,0%) (PWC, 2022). Multiples valuation supports intrinsic value of €7,48 but providing different ranges depending on the multiple. While p/e suggest a price of €7,42, median, and harmonic mean of all multiples total €7,93 and €7,80, respectively. Scenario and Sensitivity analysis change assumption about profitability, eternal growth rate and discount rate, and show a little more upside than downside potential. The bank confirmed its dividend outlook (Commerzbank, 2022), forecasted dividends for 2023 of €0,42 per share to a current share price of €7,70 result in expected dividend yield of 5.5%. Both combined delivers an expected return of 2.7%. Even though strategy 2024 is more promising and Commerzbank was able to deliver results in 2022, stock grew rapidly since its all-time-low of €5,17 this year, market already anticipated favourable developments.

Investment recommendation: HOLD

Appendix

Balance Sheet

€m	A 2018	A 2019	A 2020	A 2021	E 2022	F 2023	F 2024	F 2025	F 2026	F 2027
Cash on hand and cash on demand	53.914	41.163	75.603	49.507	70.278	55.323	57.073	71.133	68.476	78.324
Loans	211.517	224.220	224.011	236.125	230.764	230.487	231.939	241.054	249.998	257.827
Securities	128.548	130.770	139.839	131.784	133.522	136.829	138.886	141.503	144.231	147.785
Other financial assets	1.900	4.412	6.071	6.544	4.342	4.613	4.934	5.472	6.005	6.507
Other assets	24.249	19.508	11.354	10.486	10.394	9.909	9.733	9.847	10.011	10.532
Total assets	420.128	420.073	456.878	434.446	449.299	437.161	442.566	469.009	478.721	500.975

€m	A 2018	A 2019	A 2020	A 2021	E 2022	E 2023	E 2024	E 2025	E 2026	E 2027
Deposits	223.459	236.826	256.172	239.973	257.219	250.024	261.218	280.812	285.455	301.353
Bonds	145.156	135.046	161.657	153.737	150.771	145.696	139.471	145.242	149.646	155.066
Trading	3.140	1.602	415	1.382	1.987	1.985	1.997	2.076	2.153	2.220
Other liabilities	18.954	16.083	10.060	9.529	8.503	7.595	6.911	6.823	6.547	6.590
Total liabilities	390.709	389.557	428.304	404.621	418.481	405.299	409.597	434.953	443.801	465.229
Total equity	29.410	30.508	28.574	29.828	30.818	31.862	32.969	34.055	34.920	35.745
Total liabilities and equity	420.119	420.065	456.878	434.449	449.299	437.161	442.566	469.009	478.721	500.975

Profit & Loss Statement

€m	A 2018	A 2019	A 2020	A 2021	E 2022	F 2023	F 2024	F 2025	F 2026	F 2027
Net interest income	4.748	5.071	4.975	4.849	6.052	5.613	5.877	5.658	5.188	5.139
Dividend income	36	35	37	22	47	48	48	48	48	49
Risk result	(446)	(618)	(1.749)	(571)	(882)	(584)	(596)	(623)	(648)	(670)
Net commission income	3.089	3.056	3.317	3.616	3.646	3.811	3.822	3.860	4.019	4.210
Net income from financial assets and liabilities measured at fair value through profit or loss	366	244	66	980	147	136	126	118	110	102
Net income from hedge accounting	48	105	207	(96)	(94)	(94)	(94)	(98)	(102)	(105)
Other net income from financial instruments	26	27	(66)	27	24	21	18	15	12	9
Current net income from companies accounted for using the equity method	12	10	6	6	9	9	9	9	9	9
Other net income	245	93	(357)	(944)	(282)	(269)	(264)	(270)	(276)	(285)
Operating expenses	6.460	6.312	6.161	6.240	5.871	5.883	5.886	5.896	6.070	6.299
Compulsory contributions	423	453	512	466	435	415	407	417	426	440
Impairments on goodwill and other intangible assets	-	28	1.578	-	-	-	-	-	-	-
Restructuring expenses	-	101	814	1.078	946	473	-	-	-	-
Pre-tax profit or loss from continuing operations	1.241	1.129	(2.629)	105	1.415	1.920	2.651	2.405	1.863	1.717
Taxes on income	268	421	264	(248)	298	404	558	506	392	361
Consolidated profit or loss from continuing operations	973	708	(2.893)	353	1.117	1.516	2.094	1.899	1.471	1.356
Consolidated profit or loss from discontinued operations	(10)	(18)	30	-	-	-	-	-	-	-
Consolidated profit or loss	963	690	(2.863)	353	1.117	1.516	2.094	1.899	1.471	1.356
Consolidated profit or loss attributable to non-controlling interests	102	100	9	(77)	8	11	15	14	11	10
Consolidated profit or loss attributable to Commerzbank shareholders and investors in additional equity components	861	590	(2.872)	430	1.109	1.505	2.078	1.885	1.460	1.346

Free Cash Flow to Equity

€m	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total Comprehensive Income	**621**	**612**	**-3.237**	**773**	**1.274**	**1.624**	**2.151**	**1.907**	**1.430**	**1.356**
Planned Changes in Equity		**1.106**	**1.246**	**257**	**-175**	**-136**	**-96**	**-62**	**-30**	**10**
Other reserves (with recycling)		119	-306	-94	-184	-148	-112	-77	-41	0
Non-controlling interests		102	-182	-145	9	12	16	14	11	10
Additional Equity Components		885	1.734	496	0	0	0	0	0	0
Additional regulatory required capital										
Risk Weighted Assets	180.498	181.765	178.581	175.188	183.736	178.772	180.982	191.796	195.767	204.868
Total Equity	29.410	30.508	28.574	29.828	30.818	31.862	32.969	34.055	34.920	35.745
Common Equity Tier-1	23.260	24.366	23.611	23.765	24.381	24.942	25.503	26.064	26.624	27.185
CET-1 Ratio	12,89%	13,41%	13,22%	13,57%	13,27%	13,95%	14,09%	13,59%	13,60%	13,27%
Required CET-1 (%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Additional investments in required capital		**1106**	**-755**	**154**	**616**	**561**	**561**	**561**	**561**	**561**
FCFE		**612**	**-1.236**	**876**	**483**	**926**	**1.494**	**1.284**	**839**	**805**
Free Cash Flow to Equity	**-**	**612**	**(1.236)**	**876**	**483**	**926**	**1.494**	**1.284**	**839**	**805**

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Disclosures and Disclaimers

Report Recommendations

Buy	Expected total return (including expected capital gains and expected dividend yield) of more than 10% over a 12-month period.
Hold	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
Sell	Expected negative total return (including expected capital gains and expected dividend yield) over a 12-month period.

This report was prepared by *Lars Hnerik Müller*, a Master in Finance student of Nova School of Business and Economics ("Nova SBE"), within the context of the Field Lab – Equity Research.

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