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Trabajo Fin de Grado

VALUATION OF IBERCAJA BANCO AND ANALYSIS OF ITS INITIAL PUBLIC OFFER (IPO) VIABILITY

VALORACIÓN DE IBERCAJA BANCO Y ANÁLISIS DE LA VIABILIDAD DE SU OFERTA PÚBLICA INICIAL (OPI)

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ABSTRACT

This Final Dissertation Project presents a comprehensive valuation of a local bank, transitioning from a general overview to a specific analysis. It includes an extensive examination of the Spanish banking sector, featuring a PESTEL analysis, an evaluation using Porter's Five Forces, and additional macroeconomic context. Establishing the framework within which this sector operates is essential for accurately assessing the real value of Ibercaja Banco.

Following this, the project will provide a detailed presentation of the methodologies employed to elucidate what will be calculated, how it will be calculated, and the rationale behind these calculations. Subsequently, these methodologies will be applied to Ibercaja Banco's close competitors. These entities have been carefully selected to offer clear, relative benchmarks for comparison.

Finally, the valuation of Ibercaja Banco will be conducted and compared to the previously established references, with the goal of drawing conclusions regarding the feasibility of becoming a publicly traded company.

RESUMEN

Este Trabajo de Fin de Grado presenta una valoración exhaustiva de un banco local, pasando de una visión general a un análisis específico. Incluye un examen extenso del sector bancario español, presentando un análisis PESTEL, una evaluación utilizando las cinco fuerzas de Porter y un contexto macroeconómico adicional. Establecer el marco dentro del cual opera este sector es esencial para evaluar con precisión el valor real de Ibercaja Banco.

A continuación, el proyecto proporcionará una presentación detallada de las metodologías empleadas para explicar qué se calculará, cómo se calculará y la lógica detrás de estos cálculos. Aunque existen numerosos métodos para valorar empresas, este proyecto utiliza solo aquellos que son pertinentes a este caso específico.

Posteriormente, estas metodologías se aplicarán a los competidores cercanos de Ibercaja Banco. Estas entidades han sido seleccionadas cuidadosamente para ofrecer puntos de referencia claros y relativos para la comparación.

Finalmente, se realizará la valoración de Ibercaja Banco y se comparará con las referencias establecidas previamente, con el objetivo de extraer conclusiones sobre la viabilidad de convertirse en una empresa cotizada en bolsa.

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1 INTRODUCTION OF THE PROYECT

Investing in the stock market and maintaining a consistent profit over the years is one of the most challenging tasks in the world of finance. (Malkiel, 2016) states that not even those who call themselves "experts" achieve this in their entire careers. Only the best among these "experts" have been able to consistently outperform the market.

I began my journey to become one of these top "experts" at the age of 17 when I placed my first buy order in the market. Since then, my enthusiasm for capital markets has been increasing exponentially. I started trading Contracts for Difference (CFDs) based on indexes, using technical indicators such as the Relative Strength Index (RSI) for day-trading operations.

I progressed to trading globally listed stocks from Europe and America, where careful selection of stocks and precise entry and exit prices are essential. Chartist figures and fundamental analysis play a crucial role in this.

Recently, I have been trading futures contracts using the Price and Volume methodology, a minimalist approach that relies on price patterns and volume interpretation to identify market opportunities.

Currently, I am learning a new investing method: fundamental analysis. This interesting approach involves evaluating a specific stock to determine if it is overvalued or undervalued by the market. This method will be used in this project to evaluate our local bank, Ibercaja Banco, to determine if it is advisable for it to go public.

My primary motivation is to expand my knowledge of investing tools to enhance my decision-making in financial matters. Rather than adhering exclusively to technical analysis, I believe in the synergy of combining both technical and fundamental analyses for profitable outcomes.

Moreover, applying these concepts in real-life scenarios is crucial for a complete understanding, which is my second motivation. Simply reading a book does not provide a comprehensive grasp of the ideas presented. Application of learned concepts is necessary for long-term comprehension.

Lastly, as Ibercaja Banco is a local bank with an excellent reputation and expansion plans, it is important to assess whether it should go public and if individual investors should consider investing in it. It holds great potential to become one of the top banks in Spain in the coming years.

These are some of the reasons why I selected Ibercaja Banco for this project. Additionally, as it is not yet publicly traded and is relatively small compared to major Spanish banks, its growth potential makes it an ideal subject for analysis, not to miss the opportunity to invest if it becomes a reality.

The current opportunity to invest in this sector is supported by advanced technologies for cyberattack protection, stability from European institutions, and the credibility of an honest local bank aspiring to become a major player.

It is hoped that this Final Dissertation Project is enjoyed and found useful in making informed investment decisions regarding Ibercaja Banco.

1.1 Objectives

The general objectives of this project are:

- Conduct a valuation of Ibercaja Banco, considering financial ratios, earning forecasts, and banking sector standards to calculate a realistic market price.
- Analyze the viability of Ibercaja Banco becoming a publicly traded company based on fundamentals and objectively forecast positive outcomes with the objective of maximize its IPO price.

On the other hand, the specific objectives are:

- Identify potential competitors that may hinder the company's growth and create drawbacks to its progress.
- Compare Ibercaja Banco's fundamentals with those of direct competitors to reveal weaknesses for improvement.
- Apply a specific methodology to elucidate privileged conclusions, providing an advantage over other investors.

1.2 Application of the Project

This project has been written to be an academic report. This means that it could be helpful in multiple areas including in a business and social perspectives.

This project could be an opportunity to find out if this company has some weaknesses, so they contrast them with their experts and improving them if possible. Also, it may help the company aid in decision-making regarding going public.

Also, this project could help some particular investors to know more about this banking company, understanding its current situation and, in a near future, considering this information to make their financial decisions.

1.3 Contents and Structure of the Project

This project provides a comprehensive analysis, starting with an examination of the entire Spanish banking sector in Part 1. It includes a PESTEL analysis focusing on political, economic, sociocultural, technological, legal, and environmental perspectives. Additionally, a Porter's five forces analysis clarifies the main competitive forces shaping the industry. The section concludes with an explanation of the history of Spanish savings banks, current macroeconomic situation, encompassing European regulation, global institutions, and key indicators affecting the sector.

Part 2 delves into the methodology used, incorporating insights from various authors, including Pablo Hernandez and Benjamin Graham. It applies this information objectively to companies similar in size to Ibercaja Banco, establishing standards for steady growth and competitiveness.

Finally, Part 3 encompasses the valuation of Ibercaja Banco and its viability as a publicly traded company. Conclusions include an assessment of Ibercaja Banco's strengths and weaknesses against competitors, exploring the potential advantages and disadvantages of its Initial Public Offering.

1.4 Theoretical Framework

This project is grounded in the principles of value investment theory and fundamental analysis. Although these two investment theories exhibit nuances, they share sufficient similarities and scholarly support to warrant their application in this

project. The procedural aspects of applying these theories to Ibercaja Banco are elucidated in the "*Methodology*" section below.

Numerous references, including books, economic articles, and annual accounts, underpin this project, with (Fernandez, Valoración de Empresas, 2012) serving as its foundational text. Fernandez, recognized as one of Spain's preeminent financial analysts, has authored an extensive volume on business valuation, drawing from his prolific output of economic articles like (Fernandez, Equivalence of the Different Discounted Cash Flow Valuation Methods, 1999), (Fernandez, Derivados Exóticos, 1996) or (Fernandez, Introducción a la Valoración de Empresas por el Método de los Múltiplos de Compañias Comparables, 1999) and shorter publications at the University of Navarra (IESE). Additional works by Fernandez, such as (Fernandez, Opciones, Futuros e Instrumentos Derivados, 1996) and (Fernandez & Yzaguirre, IBEX35: Análisis e Investigaciones, 1995) , were consulted to gain insights into capital markets and the behavior of the Spanish stock market.

Benjamin Graham's seminal works, (Graham & Dodd, Security Analysis, 1940) and (Graham, The Intelligent Investor, 1949), have exerted a significant influence on this project. These comprehensive texts, while containing informal advice, also offer valuable insights into financial analysis.

(Koller, Goedhart, & Wessels, 2020) has been instrumental in understanding valuation methodologies, particularly in the banking sector. Focused on Discounted Cash Flow (DCF) analysis, the authors present their theory on the enduring value generated by companies and offer objective valuation techniques.

Additionally, influential works such as (Thomsett, 1998), (Damodaran, 2011), (Greenblatt, 1997), and (Fisher, 2003) have contributed to shaping the approach taken in this project. These accessible texts help to elucidate key concepts of fundamental analysis that have proven invaluable during its composition. Specifically, the first two help to build a foundation over what is Fundamental Analysis, how to use it and why it is used for. They also present the basics of business valuations and the tools to make them. The others are divulgative books that add some insights in value investing and market timing for investing.

Understanding these four books are fundamental to stablish a base knowledge of this specific methodology if, like this case, it has not been studied yet. American authors

have more experience in the stock market and in the multiple disciplines that are required to successfully invest capital into stocks.

Finally, two Spanish-authored books, (Salas, 2018) and (Paramés, 2016), have provided insights into qualitative analysis of balance sheets and long-term investment effects. Garcia Paramés, in particular, has garnered acclaim for his successful management of his own asset management company since 2016.

The first author explains deeply how to make a valuation of a company, focusing on the analysis of financial statements, how much value are creating to the shareholder, and specific methods to measure all of this. The second author, in his easy-to-grasp book, writes comprehensive lessons about basic economy including micro and macro. He also reveals some of the key points that led him to where he is. This includes investing rationally, prioritasing the long-run and managing our own capital safely.

This complete bibliography, along with other specific references used in various sections of the project, is provided in a dedicated section at the end of this document.

2. SPANISH BANKING SECTOR ANALYSIS

The organisation of this project is to go from a broad to a narrow viewpoint. This initial layer of study aims to give a better understanding by focusing our issue on a particular sector in a particular nation. It will be demonstrated that the goal of employing these first instruments is to concentrate on macroeconomic data, competition dynamics, and perspective considerations.

There won't be in-depth discussions of every subject, nor will Spanish banks be used as examples. As the project progresses, more and more of this kind of specifics will be included.

A PESTEL analysis covering six distinct viewpoints and particular aspects that may impact this industry is now being provided to you. Next, a Porter's Five Forces Analysis will be conducted, emphasising how the industry is shaped by its rivals as well as its benefits and drawbacks. Lastly, a succinct macroeconomic explanation is provided, including the European Basilea Regulation, foreign organisations influencing the Spanish economy, and factors influencing the banking industry.

2.1 PESTEL Analysis of the Spanish Banking Sector

Firstly, let's delve deep into each PESTEL factor for a preliminary analysis of the Spanish banking sector:

1. Political Factors:

Government stability serves as the cornerstone for sustained economic growth within any nation. The consistent implementation of policies, especially those concerning financial regulations, taxation, and fiscal policies, plays a pivotal role in shaping the operating environment for the banking sector. Fluctuations or shifts in governmental policies can have profound implications for banks, influencing their operations, profitability, and overall stability.

Spain's membership in the European Union further intertwines its banking sector with EU-wide regulations. The evolving landscape of EU policies and directives not only impacts how Spanish banks operate domestically but also shapes their competitive positioning within the broader European market. Additionally, international political relations wield significant influence over economic stability, thereby affecting the banking sector. Diplomatic ties, trade agreements, and geopolitical events can exert considerable pressure on cross-border transactions, investment flows, and overall market sentiment, ultimately impacting the performance of Spanish banks.

Locally, Spain operates as a parliamentary monarchy with a multi-party system. Traditionally, power has been dominated by two main parties. However, recent elections have seen a rise in regional and smaller parties, fragmenting the political landscape and making coalition governments more common.

Some of the major topics of political debate in Spain include the economic recovery. Spain, like many countries, is navigating post-pandemic economic recovery. The government's focus on areas like job creation and social welfare programs is likely a key point of discussion. With regional politics, the balance of power between the central government and Spain's autonomous regions is an ongoing debate. Regional parties often advocate for greater autonomy on issues like taxation and infrastructure spending. And Debates on social issues such as healthcare, education, and immigration are also prominent in Spanish politics.

2. Economic Factors:

The economic landscape plays a pivotal role in determining the health and trajectory of the banking sector. Monetary policy decisions, orchestrated by entities such as the European Central Bank (ECB) and the “Banco de España”, wield immense influence over interest rates and the availability of capital. These factors, in turn, dictate the cost of funds for Spanish banks, directly impacting their lending practices, profitability, and liquidity management strategies.

Moreover, economic indicators such as inflation and deflation rates serve as barometers of consumer and business confidence, significantly influencing borrowing and spending patterns. High unemployment rates pose a multifaceted challenge for Spanish banks, leading to increased loan defaults, reduced credit demand, and heightened financial vulnerability among households and businesses alike. Navigating through these economic headwinds requires banks to adopt agile strategies that mitigate risks, seize growth opportunities, and maintain financial resilience in the face of economic volatility.

Spain's current economic situation presents a mixed picture with reasons for both optimism and caution. The good news is that Spain's economy has rebounded well from the initial shock of the COVID-19 pandemic. In 2021 and 2022, Spain's GDP growth rate surpassed the European average, and forecasts anticipate continued growth above the average in 2023 and 2024.

GDP growth reflects the overall economic health of Spain and correlates with increased demand for banking services. Unemployment rates impact individuals' and businesses' ability to meet financial obligations, potentially leading to increased loan defaults and impacting banks' loan portfolios. Central banks' decisions on interest rates influence the cost of funds for Spanish banks, affecting lending and deposit rates, as well as banks' profitability. Monitoring consumer debt metrics helps assess consumer spending patterns and loan repayment capabilities, providing insights into credit risk.

Furthermore, analyzing the investment climate based on macroeconomic indicators helps Spanish banks tailor their lending and investment strategies, guiding risk assessments and sector-specific lending decisions.

3. Social Factors:

Societal dynamics and demographic trends exert a profound influence on the banking sector's landscape. Shifts in population demographics, including aging populations or changes in population density, can fundamentally alter the demand for banking products and services. For instance, an aging population may necessitate increased demand for retirement planning and wealth management services, presenting both challenges and opportunities for Spanish banks.

Moreover, the level of financial literacy within the population significantly shapes individual financial behaviours and decision-making processes. Initiatives aimed at enhancing financial education and literacy can empower consumers to make more informed choices regarding banking products and services, thereby reshaping customer preferences and banking engagement models.

Additionally, socio-cultural shifts, encompassing changes in societal values, preferences, and lifestyle trends, can dynamically influence the types of banking services and products that are in demand. Adapting to these evolving societal norms requires banks to remain attuned to consumer preferences, leverage emerging trends, and innovate in their product offerings and service delivery models.

Spain faces a rapidly aging population. The average age is rising, and the birth rate is below the replacement rate needed to maintain a stable population. This trend has several implications like increased strain on social security as a larger elderly population means a greater burden on social security systems like pensions and healthcare. And a shrinking working-age population can lead to labor shortages in certain sectors of the economy.

Net migration, meaning more people immigrating to Spain than emigrating, helps to partially offset the decline in the native-born population. However, it's important to consider the integration challenges, ensuring successful integration of immigrants into Spanish society is crucial to maximize their contribution to the economy and social fabric. While immigration can address labor shortages, attracting skilled workers is also particularly important for long-term economic growth. Finally, the regional variations is more pronounced in rural areas, while urban centers tend to have younger populations.

4. Technological Factors:

The rapid advancement of technology has ushered in an era of unprecedented disruption and innovation within the banking sector. The emergence of fintech companies has introduced a paradigm shift in the industry landscape, presenting traditional banks with both challenges and opportunities.

Collaboration or competition with fintech firms necessitates banks to reassess their business models, embrace digital transformation, and explore innovative solutions to meet evolving customer needs and preferences. Furthermore, the adoption of artificial intelligence (AI) and automation technologies holds immense potential for enhancing operational efficiency, streamlining processes, and improving customer experiences across various banking touchpoints.

Additionally, the exploration and integration of blockchain technology and cryptocurrencies present new avenues for innovation and disruption within the banking ecosystem. From revolutionizing payment systems to enhancing transparency and security in transactions, blockchain holds transformative potential for reshaping traditional banking services and processes. Embracing these technological advancements requires banks to foster a culture of innovation and forge strategic partnerships to stay ahead of the curve in an increasingly digital landscape.

5. Environmental Factors:

The imperative for sustainable development and environmental stewardship has emerged as a defining theme shaping the future trajectory of the banking sector. Spanish banks are increasingly compelled to align their operations and investments with green finance initiatives, reflecting global efforts to address climate change and promote sustainability. Integrating environmental, social, and governance (ESG) criteria into financing decisions not only mitigates environmental risks but also unlocks opportunities for sustainable growth and value creation.

Moreover, banks face mounting pressures to address physical and transition risks associated with climate change. Extreme weather events, rising sea levels, and shifting climatic patterns pose tangible risks to banks' physical assets and operations, necessitating robust risk management frameworks and resilience-building measures.

Furthermore, transitioning to a low-carbon economy entails navigating complex challenges and opportunities, from decarbonizing lending portfolios to financing renewable energy projects and sustainable infrastructure. Embracing environmental sustainability requires banks to embed ESG principles into their corporate strategies, engage stakeholders proactively, and drive meaningful impact across their value chains.

The Kyoto Protocol is no longer the main international agreement for greenhouse gas emission reduction. The Paris Agreement, adopted in 2015 and entering into force in 2016, has effectively superseded the Kyoto Protocol. It's the primary international treaty for addressing climate change, with a wider range of countries participating compared to the Kyoto Protocol. While overshadowed by the Paris Agreement, the Kyoto Protocol technically remains in effect. However, its second commitment period concluded in 2020, and most developed countries have shifted their focus to the Paris Agreement's more ambitious goals.

Currently, the international community is focused on implementing this agreement including Nationally Determined Contributions (NDCs) by which each country outlines its planned actions to reduce emissions and adapt to climate change. Also, countries are expected to revisit and strengthen their NDCs over time to meet the long-term temperature goals of the Paris Agreement. Finally, Developed countries are expected to provide financial and technological assistance to developing countries to support their climate action efforts.

6. Legal Factors:

The regulatory landscape governing the banking sector is characterized by a complex web of legal frameworks, compliance obligations, and regulatory standards. Anti-Money Laundering (AML) and Counter-Terrorism Financing (CTF) regulations serve as critical safeguards against illicit financial activities, necessitating banks to implement robust compliance measures and due diligence protocols.

Ensuring adherence to data protection laws, such as the General Data Protection Regulation (GDPR), is imperative for safeguarding customer information, preserving privacy rights, and mitigating cybersecurity risks.

Moreover, Spain's regulatory framework for banks, encompassing capital adequacy requirements, stress testing protocols, and prudential regulations, shapes the industry's structural integrity and risk management practices. Compliance with regulatory mandates necessitates banks to maintain high standards of governance, risk management, and transparency, fostering trust and confidence among stakeholders. Embracing a culture of compliance, coupled with proactive engagement with regulators and industry stakeholders, is essential for navigating the ever-evolving legal landscape and ensuring sustained regulatory compliance in a dynamic operating environment. Later on, there will be found a specific section where the regulatory framework is analysed (2.3.2).

Overall, this preliminary analysis provides a nuanced understanding of the various factors influencing the Spanish banking sector, highlighting the interconnectedness and complexity of the industry within the broader economic and societal context. Ongoing monitoring of these factors is crucial for banks to navigate challenges and capitalize on emerging opportunities.

2.2 Porter's Five Forces Analysis of the Spanish Banking Sector

Let's refine our analysis of the Spanish Banking Sector by examining how five competitive forces impact this industry. This management tool helps us understand the ease or difficulty of entering the market and growing within it.

1. Threat of New Entrants:

Regulatory compliance costs present a significant challenge for new entrants, in addition to regulatory barriers. Spain's regulatory framework, aligned with European standards, mandates strict adherence to financial and operational guidelines.

Technological investment is a barrier for new entrants as established banks have made substantial investments in technology, particularly in digital banking, cybersecurity, and data analytics.

Access to skilled workforce poses a challenge for new entrants, given the scarcity of skilled professionals in the financial sector, especially in risk management and compliance.

2. Bargaining Power of Buyers (Customers):

Information empowerment is increasing among customers with abundant information available online, enabling them to demand better services, interest rates, and overall value from banks.

Changing customer expectations, particularly regarding digital banking, compel traditional banks to adapt and invest in user-friendly interfaces, mobile apps, and efficient customer service to retain and attract clients.

Regulatory protections ensure transparent bank operations, empowering customers with knowledge of their rights and fostering a competitive environment.

3. Bargaining Power of Suppliers:

Central banks and regulators wield significant influence over banks, with changes in monetary policy, interest rates, and regulatory requirements directly impacting operations and costs.

IT infrastructure providers influence banks' technological capabilities, making it crucial to negotiate favorable terms to maintain competitiveness in the rapidly evolving digital landscape.

Credit rating agencies impact banks' access to capital markets, with favorable ratings contributing to lower borrowing costs and downgrades having adverse effects.

Due to the increasing prices of the construction sector in Spain and the rising usage of digital platforms, banks have decided to slow-down the opening of new commercial sites and focus on growing their online platforms improving the user-experience.

4. Threat of Substitute Products or Services:

Blockchain technology has the potential to disrupt traditional banking processes such as payments, settlements, and record-keeping beyond cryptocurrencies.

Regulatory sandbox for fintech encourages the development of alternative solutions through regulatory initiatives, posing a threat to traditional banking offerings.

Digital Currencies, including potential central bank digital currencies (CBDCs), could alter the currency transaction landscape, impacting the traditional role of banks.

5. Intensity of Competitive Rivalry:

Strategic alliances are formed by banks to gain competitive advantages, such as collaborations in shared ATMs, joint ventures, or international partnerships to enhance market presence.

Focus on customer experience becomes essential in a saturated market, leading banks to invest in personalized services, tailored financial products, and digital experiences to attract and retain customers.

Consolidation trends, including mergers and acquisitions, play a significant role in the competitive landscape, with large banks acquiring smaller ones to expand market share or enhance capabilities.

The Spanish banking sector operates within a multifaceted environment that demands adaptability, innovation, and resilience. While regulatory barriers and the dominance of established players present challenges to new entrants, the sector is dynamic and responsive to technological advancements. Fintech disruption, changing customer behaviors, and the ongoing digitization of financial services are reshaping the industry. Success in this environment requires a strategic approach, continuous innovation, a focus on regulatory compliance, and the ability to navigate the evolving landscape of financial technology and consumer expectations.

2.3 History, European Regulations and Macroeconomics in the Spanish Banking Sector

Finally, it's essential to consider various factors that may impact the banking industry. These encompass the history of former saving banks, the Basel Framework (including the latest update known as Basel III), European regulations such as the Single Supervisory Mechanism (SSM), World Institutions influencing Spanish banks, and Macroeconomic indicators like GDP or the unemployment rate.

2.3.1 History of the Spanish Banking Sector

First of all, we will be dealing with the history of the Spanish Banking Sector and how saving banks play their role in the financial crisis in 2008. From that moment, the sector has become more concentrated due to the merge of multiple saving banks. This implyes less financial entities but the same size and growth for the sector.

The history of savings banks in Spain took a pivotal turn in 1985 with the enactment of the Savings Banks Law (Ley Lorca). This law provided a legal framework that fueled their expansion and consolidation as prominent financial institutions.

Under this umbrella, savings banks experienced exponential growth, opening new branches, diversifying their products and services, and gaining ground on traditional banks. They became key players in financing the Spanish economy, particularly in the mortgage sector.

The following decades witnessed an unprecedented boom for savings banks. Taking advantage of the economic bonanza, they expanded geographically, diversified their product portfolio (including investment banking and asset management), and ventured into new sectors such as real estate.

This growth was not without risks. Competition between savings banks intensified, leading them to make risky decisions in pursuit of greater profits. The real estate bubble artificially inflated the value of their assets, creating a situation of financial fragility that would become unsustainable with the outbreak of the global financial crisis in 2008.

The financial crisis exposed the weaknesses of savings banks. The collapse of housing prices, the rise in non-performing loans, and the liquidity crunch brought them to the brink of collapse. To avoid a massive bailout and ensure the stability of the financial system, the Spanish government implemented a series of measures that culminated in the conversion of savings banks into banks.

Between 2008 and 2013, numerous mergers took place among savings banks, with the aim of creating stronger and more solvent entities. The Orderly Bank Restructuring Fund (FROB in Spanish) was created to inject public capital into the weakest entities. Finally, the savings banks that failed to overcome the crisis

transformed into banks, losing their original character and adopting the legal and regulatory structure of traditional banking entities.

The conversion of savings banks into banks resulted in a more concentrated banking sector, with fewer but larger entities. Some of the largest savings banks, such as CaixaBank and Unicaja Banco, consolidated their position as major players in the Spanish financial landscape.

Ibercaja Banco experienced remarkable growth in the decades following the Lorca Law, mirroring the overall trend in the sector. It opened new branches, diversified its product and service offerings, and expanded geographically, solidifying its position as one of Spain's most prominent savings banks.

Like other savings banks, Ibercaja Banco was not immune to the 2008 financial crisis. The entity suffered significant losses due to its exposure to the real estate sector and the rise in non-performing loans.

In 2011, Ibercaja Banco followed the path of most Spanish savings banks and converted into a bank. And today, Ibercaja Banco stands as one of Spain's major banking institutions, with a strong presence in Aragon and a notable position in the national market. The entity has successfully adapted to the new challenges of the financial sector, embracing innovation and digitalization.

The story of savings banks in Spain is an example of how unchecked growth, excessive risk-taking, and inadequate regulation can lead to a major financial crisis. The conversion into banks has allowed the sector to be sanitized and made more robust, but it has also meant the loss of the original savings bank model, with its local roots and social vocation.

Currently, the Spanish banking sector is undergoing a process of restructuring and adaptation to a more demanding economic and regulatory environment. It remains to be seen how this sector will evolve in the future and what role the entities resulting from the transformation of savings banks will play.

2.3.2 History of the BASEL Framework

The history of modern banking regulation can be traced back to 1985 when the failure of Italy's Banco Nazionale del Lavoro highlighted the need for a more robust

international regulatory framework to strengthen the solvency and stability of the global financial system.

In response to this event, central banks from the G10 countries convened in Basel, Switzerland, to establish a set of common principles to address the identified shortcomings. The outcome was the Basel Concordat, signed in 1988, an agreement that marked a milestone in the history of financial regulation.

The Basel Concordat was formalized in 1988 as the Basel I Capital Accord, the first international agreement establishing minimum capital requirements for banks. This agreement introduced the concept of solvency ratios, mandating that banks maintain a minimum amount of capital in proportion to their risk-weighted assets (RWAs).

The minimum solvency ratio set under Basel I was 8%, composed of Tier I capital (at least 4%) and Tier II capital (up to the remaining 4%).

Tier I capital comprised elements such as common stock and retained earnings, considered the safest components of a bank's capital. On the other hand, Tier II capital encompassed instruments like revaluation reserves, subordinated debt, and subordinated loans, deemed less safe but still capable of absorbing losses in times of crisis.

Basel I represented a significant step forward in banking regulation by introducing a standardized framework for assessing bank solvency. This agreement contributed to preventing future financial crises by establishing a minimum capital threshold that banks had to maintain to cover potential losses.

Despite the advancements achieved with Basel I, banking regulation still had room for improvement. In 2004, the Basel Committee on Banking Supervision (BCBS) began working on a new accord to address the limitations of the existing framework.

The result was Basel II, implemented in 2008, an agreement that introduced a more granular and risk-based approach to bank solvency assessment. This accord recognized that not all bank assets carry the same level of credit risk, hence establishing different risk weightings for various asset types.

Under Basel II, banks could opt for two methods to calculate their capital requirements:

- Standard Approach: This method assigned a predetermined risk weighting to each asset type, simplifying the calculation but potentially being less precise.
- Internal Ratings-Based Approach (IRB): This method allowed banks to utilize their own risk models to calculate their capital requirements, offering greater accuracy but with increased complexity and regulatory oversight.

Basel II also introduced new concepts such as Pillar I and Pillar II. Pillar I referred to the minimum capital requirements set forth in banking regulations, while Pillar II encompassed the regulatory supervisory process that evaluated the adequacy of a bank's capital based on its risk profile and risk management practices. They will be explained within Basel III.

The global financial crisis of 2008 exposed the shortcomings of the Basel II regulatory framework, highlighting the urgent need to strengthen the solvency and resilience of the banking system. In response to this crisis, the Basel Committee on Banking Supervision (BCBS) developed Basel III, a new accord that came into effect in stages between 2013 and 2019.

Key Pillars of Basel III:

- Pillar I: Minimum Capital Requirements: Establishes the minimum capital requirements that banks must maintain, divided into two components:
    - Common Equity (Tier I): Must represent at least 4.5% of risk-weighted assets (RWAs). Within Tier I, the following are distinguished:
        - CET1 (Common Equity Tier 1): The safest component of capital, composed of common stock, retained earnings, and other instruments considered of high quality. It must represent at least 4.5% of RWAs.
        - Additional Tier I (AT1): Hybrid instruments that combine debt and equity features, such as contingent capital instruments (CoCos) and convertible bonds. They can supplement CET1 up to a maximum of 1.5% of RWAs + CET1 (4,5%) = Capital Tier 1 (6%).

- Suplementary Capital (Tier II): Must represent a maximum of 2% of RWAs, composed of instruments such as revaluation reserves, subordinated debt, and subordinated loans.

- Pillar II: Risk-Based Supervision and Corporate Governance:
  - Regulatory Supervisory Process (Pillar IIa): Regulators assess the adequacy of banks' capital based on their risk profile and risk management practices.
  - Internal Review and Evaluation Process (Pillar IIb): Banks must conduct their own risk assessment and establish a sound corporate governance framework to effectively manage risks.

There are some key Solvency Ratios in Basel III that we will take into account later on in the quantitative part of the project:

- Total Capital Ratio (TCR): Total capital (Tier I + Tier II) expressed as a percentage of RWAs. It must exceed 8% to meet minimum requirements.
- CET1 Ratio: CET1 expressed as a percentage of RWAs. As previously stated, tt must be above 4.5% to comply with minimum requirements.
- Leverage Ratio: Total assets expressed as a percentage of common equity (CET1). It must be below a regulator-set limit to prevent excessive leverage.

The impact of Basel III on the global banking system contributed to a stronger bank solvency, reduced systemtic risk and enhanced transparency. Basel III represents a fundamental step forward in banking regulation, establishing a more robust and demanding regulatory framework that has contributed to strengthening the solvency, stability, and resilience of the global financial system.

2.3.3 European Regulations affecting the Spanish Banking Sector

European regulations, such as the Single Supervisory Mechanism (SSM), have a profound impact on Spanish banks. The SSM is a European regulatory body established in 2014 to oversee banks in the eurozone. It enforces stricter capital requirements based on Basel III regulations. This means Spanish banks need to hold more capital reserves, making them more resistant to financial crises. The centralized supervision involves a

more rigorous assessment of banks' risk profiles, identifying potential weaknesses and prompting corrective actions.

The SSM also emphasizes sound risk management practices. Spanish banks have had to implement stronger internal controls, improve risk identification, and develop better mitigation strategies. The focus on good corporate governance encourages responsible decision-making and discourages excessive risk-taking behavior by bank management.

Finally, the SSM promotes transparency in bank operations. This fosters trust in the Spanish banking system, potentially attracting more investment. A well-capitalized and stable banking sector is crucial for overall economic growth in Spain.

There are some considerations to be careful about the SSM. For example, the stricter capital requirements may have initially limited Spanish banks' lending capacity, potentially hindering economic activity in the short term. Then, adapting to the new regulatory environment comes with additional costs for Spanish banks. Last but not least, the effectiveness of the SSM hinges on consistent enforcement across all member states. This prevents "regulatory arbitrage," where banks move to jurisdictions with less stringent rules.

Efforts towards completing the Banking Union aim to strengthen the stability of the European banking sector, potentially influencing risk exposure and deposit protection for Spanish banks.

Furthermore, European regulations facilitate cross-border banking operations, necessitating that Spanish banks navigate complex regulatory landscapes. Compliance with the EU's Digital Finance Strategy is crucial for Spanish banks, as it fosters innovation in financial services and mandates adherence to evolving digital regulations and technological advancements.

World institutions, including the International Monetary Fund (IMF) and Financial Stability Board (FSB), wield significant influence over Spain's economic policies and banking sector. IMF assessments shape Spain's approach to economic reforms, fiscal policies, and financial stability, while FSB guidelines contribute to resilience through recommendations on risk management and corporate governance. Insights from world institutions into global economic trends inform Spanish banks about potential impacts on trade, investment, and currency exchange rates.

Moreover, emphasis on sustainable finance initiatives from world institutions encourages Spanish banks to align practices with global sustainability goals, impacting investment strategies and risk assessments. In times of financial crisis, coordination with world institutions becomes crucial for Spanish banks to align with global responses and leverage international financial support mechanisms.

2.3.4 Conclusion

In conclusion to this section, the interaction of the Basel Framework, European regulations, world institutions, and macroeconomic indicators creates a complex regulatory environment for Spanish banks. While these factors contribute to financial stability, they also impose challenges, requiring banks to continuously adapt. Compliance efforts under Basel III, adherence to European regulations, coordination with global financial institutions, and responsiveness to macroeconomic conditions collectively shape the operational landscape for Spanish banks. Successful navigation through these factors demands a strategic and agile approach, ensuring resilience, risk management effectiveness, and alignment with broader economic objectives.

3 METHODOLOGIES

This section entails the exposition of the theory used on how the valuation is going to be made. Then, in chapter 4, there will be a valuation of three different Spanish banks: Ibercaja Banco, Kutxabank and Cajamar. Analyzing banks of similar size allows for comparison with the valuation of Ibercaja Banco, thereby facilitating conclusions drawn from the results. These banks were selected due to their comparable situation to Ibercaja Banco: exhibiting high growth rates, possessing similar asset sizes, and not being publicly traded companies.

As (Fernandez, Valoración de Empresas, 2012) asserts in his book, the most accurate valuation of a company involves discounting future cash flows to the present moment, followed by an analysis of financial multiples. This approach represents the company as a cash-generating asset and values it based on its capacity to generate wealth for shareholders.

Various methods exist for valuing a company, including those based on the balance sheet, income statement, and goodwill. However, valuations solely reliant on financial multiples do not provide a comprehensive representation of the company, as they rely solely on annual financial statements. Such an approach is akin to defining a person solely by a photograph of their face.

Furthermore, certain valuation methods requiring a market price are not applicable in this case, as there is no market price for Ibercaja Banco shares, despite the publicly known number of shares and share capital. Therefore, valuation methods not reliant on market price will be utilized to provide valuable insights into the company, prioritizing the present discounted value of future cash flows for Ibercaja Banco. Those other methods that require a market price will not be mentioned neither calculated.

The economic feasibility of Ibercaja Banco going public will be assessed based on differences with its competitors and potential impacts on Ibercaja Banco's valuation. As it is not possible to definitively determine whether the share is overvalued or undervalued, this approach represents the most suitable method for valuing the bank.

Finally, multiple models will be calculated including those based on the Balance Sheet, Income Statement, Goodwill, and Cash-flow discounting. The latter will be prioritized over the others to explain the final conclusions, despite taking into account the former ones.

3.1 Solvency Ratios and Weighted Betas

First of all, the solvent capacity of the companies will be calculated. Basilea III stablished multiple requirements for avoiding a similar situation as that of 2008. Three ratios are chosen in order to analyze how these banks can face their short-term debts with its resources.

The Common Equity Tier 1 Ratio is calculated by dividing the common components of an equity by their Risk Weighted Assets. It must be above 10% to accomplish regulations.

The Tier 2 Ratio uses unusual components of equity like subordinate debt and other hybrid instruments, reflecting a comprehensive measure of the bank's capital strength. It has to be above 2%.

Finally, the Total Capital Ratio is the sum of these two and represents a fair image of the solvency of the companies. In order to calculate the betas, it has been used a weighted average between Tier 1 and Tier 2 Ratio. First, the beta from Unicaja Banco was chosen due to similar financial characteristics. Then, the other betas have been calculated depending on the capacity of solvency that each bank has demonstrated through these ratios.

3.2 Multiples Based on the Balance Sheet

The calculated values in this model are estimated based on the accounting information obtained from the Balance Sheet at the end of the fiscal year. This method poses several issues, such as not considering the time value of money, the future evolution of company values, future options, organization of the company, economic situation, etc.

As stated previously, this method relies solely on historical values, which contradicts the objective of valuing a company by quantifying its ability to generate income in the future, as it assumes that its value is fundamentally static.

This valuation is based on accounting information, and it is necessary to mention that this type of information is manipulable. There exists significant accounting engineering that, within legal bounds, operates in various ways to pay fewer taxes or give the impression that the company is in a better situation than reality, either by inflating profits or reducing losses.

3.2.1 Book Value

The book value represents the value of shareholders' equity. It is the value of the company's assets that belongs to the shareholders, thus representing the total asset value of the company after deducting all liabilities. Alternatively, it can be defined as the difference between the assets and rights of the company minus the liabilities assumed.

This is the formula:

$$Total\ Assets - Total\ Liabilities = Book\ Value$$

$$\frac{Book\ Value}{Nº\ of\ shares} = Book\ Value\ per\ share$$

3.2.2 Substantial Value

The Substantial Value is the value of the investment required to replicate the company under the same conditions as it currently exists. The main characteristic of valuating banks is that only the assets necessary to continue operations are considered for the investment; investments that are not truly necessary for the core activity should not be included, such as vacant land, financial investments, investments in other companies, and real estate not used for the companies' core activity. In this valuation, it must be noted that banks are financial companies, so financial investments are part of their core activity.

We can distinguish three types of Substantial Value:

Gross Substantial Value: This is the value of the assets necessary to replicate the company valued at market value. In banks, assets not necessary to replicate the company, include non-current assets for sale and investments:

$$GSV = Total\ Assets - Non\ Current\ Assets\ Held\ For\ Sale - Investments$$

Net Substantial Value: It is the Gross Substantial Value minus the exigible liabilities, coinciding with the Adjusted Book Value.

$$NSV = GSV - Total\ Liabilities$$

Reduced Gross Substantial Value: It is the Gross Substantial Value minus the debt without cost, which typically corresponds to suppliers.

$$Reduced\ GSV = NSV - Debt\ Without\ Cost$$

As we are dealing with a financial company that does not work with suppliers (in its main activity) nor has creditors for services rendered on its balance sheet, we can conclude that its Reduced Gross Substantial Value coincides with its Gross Substantial Value.

3.3 Multiples Based on the Income Statement

With this model, the company's value is calculated based on a metric from its income statement. In some cases, the aim is to establish a relationship that allows

comparison between the market value assigned to companies in the same sector and the value of the company itself.

In the cases of the P/E ratio and the ratio of Market Value to Book Value, we encounter very quick valuation methods, as we only need to multiply the value of the calculated multiple in the sector by a metric from the Income Statement such as dividends, profits, sales, etc.

Generally, this method is better than those based on the Balance Sheet as they are more dynamic comprehending an entire fiscal year of the company.

3.3.1 P/E Ratio and Price Value to Book Value Ratio

Despite having the Income Statement of the banks, we cannot calculate the P/E multiples or the Market Value to Book Value Ratio because there is not a market price for the shares.

3.3.2 Enterpise Value/EBITDA Ratio

The Enterprise Value/EBITDA ratio is a valuable indicator of how efficient is the company in terms of expenses and income. This ratio divides the market capitalization of the company by the earnings before interest, taxes, depreciation, and amortization.

As banks are being valuated, paying and receiving financial interests are a common operation so it is technically being used the EBTDA for this ratio. Also, these companies are not publicly traded yet, so there is not a market capitalization. Instead, the book value will be used as it should provide a relative fair value of the companies.

3.3.3 Model Based on Discounting Future Earnings

This model is based on discounting the future profits that the company is expected to achieve in the coming years. Within this model, it will be considered only one hypothesis: that the profit obtained in the year 2023 is the same but it will grow inevitably due to inflation. It is assumed that the companies should, at least, maintain this situation over 5 years, using then a finite forecast. This means that it will be growing at an equal rate as inflation due to its macroeconomic situation.

This is because, as explained later, Ibercaja Banco has recently presented his new Strategic Plan for years ahead. The bank has forecasted the benefits to be maintained with no growth[1]. The main focus is the consolidation and expansion on the national territory. Even though earnings are not expected to increase, they will be affected by inflation so this indicator will be used as the growing rate (g) for each bank valuated.

For the use of this model, as well as the dividend discount model and the discounted cash flow model, we need to determine the following parameters and values (Assuming that the number of shares remains constant over time):

Risk-free interest rate: This is an interest rate applied to investments that do not carry any risk, meaning that it is certain that the total investment will be recovered. We will denote it as "R_f".

The risk-free rate is taken as the interest rate paid by the state on its 10-year debt, because in theory, states are free to issue currency, and furthermore, the state comprises all its inhabitants, meaning that sovereign debt is backed by all the inhabitants of that country who pay the taxes needed for government financing.

Risk premium: This is the amount by which each unit of systematic risk, non-diversifiable risk, is compensated. A risk-free monetary unit is worth more than a unit with risk.

It can also be defined as the difference between the return on the market portfolio (E_m) and the risk-free interest rate ($E_m - R_f$). The return on the market portfolio is the return on a fully diversified portfolio. As (Fernandez, Valoración de Empresas, 2012) states in its book, there is not a general Risk Premium for a market but a specific one for each investor.

Beta: This is a measure of the systematic risk of assets. It measures the volatility of the asset, or in other words, its sensitivity or variation in its return in relation to the variation in the return of the market portfolio.

To calculate the beta of a company listed on the capital market, we divide the covariance of the asset's return and the market portfolio return, COV (R_i, E_m), by the market variance VAR (E_m).

[1] For more information, please find the Strategic Plan in the bibliography along with the "BolsaManía" piece of news.

In this specific case, the betas will be calculated with a weighted average from the one of a company which is being publicly traded. The solvency ratios will stablish if the betas should be higher or lower depending on how solvent each entity is.

Cost of Capital: We will use the Capital Asset Pricing Model (CAPM), which expresses the relationship between the expected return and the risk of a financial asset "i", in this case Ibercaja Banco, in a market in equilibrium.

$$E(R_{Ibercaja}) = R_f + (E_m - R_f) * \beta_{Ibercaja}$$

The expected return consists of the return on the risk-free asset, which is the minimum we would obtain if Ibercaja Banco had no risk, and a premium for each unit of systematic risk. This return is used to discount the incomes obtained by Ibercaja Banco shareholders, as it truly reflects the opportunity cost.

A very important factor to consider is that this is not the actual return on Ibercaja Banco shares, but rather the return demanded by investors, which is the only one we can know "a priori". The actual or effective return would be obtained "a posteriori", once we have the closed results of the 2024 period.

Expected earnings per share: Earnings per share are obtained dividing the earnings by the number of share. This specific ratio is used to determine how many benefits is the business creating for their investors. Due to the specific situation of Ibercaja Banco, the expected earnings will be based on a constant growth affected by inflation for the next 5 years. This method will be applied to the others with the objective of provide a fair comparison.

Pay-Out Ratio: This is the percentage of profit earned by the company in that period that is distributed to shareholders. It is the income that we will discount in the dividend discount method. However, in this valuation method, we will use it to calculate the internally sustainable growth. Specifically, we need the company's Pay-Out, which is the percentage of profits distributed as dividends, denoted by the letter "p":

$$p = \frac{DPS}{EPS}$$

Model of Constant Growing for a Specific Period of Time

In this model, we assume that the profit forecasted for the year 2024 will remain constant over time into the next 5 years (until 2030). To do this, we use the formula for discounting a growing income, affected by inflation, at the discount rate that we calculated earlier, which is proportional to the risk assumed by Ibercaja Banco shareholders. We refer to the rate calculated from the CAPM:

$$e_{2023} = \frac{EPS_{2024}E * (1+g)^n}{E(R_{Ibercaja})}$$

3.3.4 Model Based on Discounting Dividends

In this model, we discount the monetary income actually received by the company's shareholders, namely, the dividends, which represent the portion of profits distributed to shareholders.

It should be noted that this model is only applicable to companies that are growing and distribute dividends. There are highly profitable companies that prefer to reinvest their profits rather than distribute them as dividends; for these companies, this model is not suitable.

In the case of Ibercaja Banco, it has a policy of stable dividends, meaning that despite obtaining different results in different fiscal years, it always aims to maintain the same dividend. For this reason, this is a suitable model for valuing Ibercaja Banco:

Model of Constant Growing for a Specific Period of Time

We assume that the dividend projected for 2024 will be growing at the same rate as earnings for the next 5 years of the banks' life, which we assume to be a realistic calculation.

$$e_{2023} = \frac{DPS_{2024}E * (1+g)^n}{E(R_{Ibercaja})}$$

Ibercaja Banco has a policy of growing dividends, and we can infer that it will strive to preserve it in the future. Therefore, within the assumptions of the dividend discount model, this would be the most appropriate. However, the problem with this model is that it only considers dividends for valuation and not other important factors that would likely increase the value of the stock.

Comparison between the dividend discount model and the earnings model

There is a relationship between the earnings model and the dividend model, specifically through the Pay-Out ratio. We can observe that the relationship between both valuation methods is the dividend payout rate:

$$DPS = EPS * p$$

$$e_{2023} = \frac{DPS_{2024}E}{E(R_{Ibercaja})} = \frac{EPS_{2024}E * p}{E(R_{Ibercaja})}$$

3.4 Models Based on Discounting Cash-Flows

A Cash Flow is the set of cash inflows and outflows within a specific period of time, in this case, a fiscal year. An essential characteristic of this value is its "objectivity," meaning it cannot be manipulated. Profit, for instance, can be manipulated through various amortization methods; however, Cash Flow is a factual measure.

The fundamental difference between Profit and Cash Flow is evident from the following definitions: "Profit is the difference between income and expenses within a specific period of time," and "Cash Flow is the difference between receipts and payments within a specific period of time." Here lies the distinction: income does not necessarily have to be realized, i.e., received, but it is recorded. Therefore, we are not certain about when we will receive or if we will receive that monetary amount. The same applies to expenses and payments.

Another significant difference is that Cash Flow can be reinvested or financed because it is within our control. However, Profit cannot be reinvested or financed since it is a potential flow, and we are uncertain about its availability date.

In addition to the aforementioned points, we must consider why discounting Cash Flows is preferable to discounting dividends. This is easily explained: when a company does not distribute dividends, if we were to discount them, the shares would have a value of 0, which is false. The company continues to generate Cash Flow that may be entirely reinvested in the company and creates more value for shareholders than distributing it as dividends.

Moreover, Cash Flow is a measure of remuneration for all participants in the company, whereas dividends measure only the remuneration received by the shareholder. Another problem solved by this method is the different remuneration of shareholders, such as net dividends, in-kind dividends, bonus shares, reduction of par value, which do not have a solution in the dividend discount model.

Financial Statement

To calculate the different Cash Flows, we need to know the Financial Statement and some concepts that have not yet been mentioned.

Firstly, the Asset is comprised of Fixed Assets or immobilized assets and secondly, the Liability is formed by Permanent Capital (Equity and Long-Term Creditors) plus Short-Term Financial Debtors.

The Net Fixed Asset Variation is the Gross Fixed Asset Variation minus the amortization of Fixed Assets, denoted as ΔNFA.

In the following valuations, when referring to Debt, it is important to note that we are only referring to Debt With Cost (E), as cost-free debt is not used for the calculation of any Cash Flow.

3.4.1 Cash Flow from Equity (CFeq)

It is the Cash Flow generated and available after paying taxes, repaying Debt principal, and the capital needed for new investments in Fixed Assets.

This flow represents what is left for the shareholders, which will be allocated to dividends and share buybacks. Therefore, by discounting this flow, we obtain the value of the shares that we must add to the value of the debt to obtain the total value of the company.

The CFeq is composed of Net Profit from which we deduct the necessary money for new investments in NFA, and to which we add the new money entering the company from the new debts acquired.

The calculation to obtain the CFeq starting from the NP or from the FCF is as follows:

$$CFeq = NP + Amortization + \Delta D - \Delta NFA$$

$$CFeq = FCF - k_D * D * (1 - t) + \Delta D$$

k_D = return demanded by creditors, price that the company pays for the debt it holds. As we are dealing with banking institutions, it is more complicated than for other types of companies since a major source of financing is the deposits of customers in retail banking, which barely accrue interest, unlike other companies that obtain financing in capital markets. In this case, it will be used the corporative debt of each of the entities when they issue debt for the long term.

t = tax rate.

3.4.2 Free Cash-Flow (FCF)

This flow is based on not considering the company's debt; we assume that our company is financed solely by equity.

The Free Cash-Flow is the cash flow generated by the company after paying taxes and deducting the capital needed for investments in Fixed Assets and covering the Operating Fund Needs.

To calculate it, we subtract from the Net Profit (NP) the new investments in Net Fixed Assets (NFA). Additionally, we must consider that since we are assuming a debt-free company, we need to add back the portion of interest that we have paid and subtracted when calculating the NP. Since having debt has resulted in what is known as Tax Shield, ($k_D * D * t$), we still need to add the rest of the interest paid, i.e., $k_D * D * (1 - t)$.

Alternatively, it can also be calculated through EBIT, Earnings Before Interest and Taxes; we subtract taxes before paying off the debt, thus eliminating the tax shield, then deduct the necessary amounts for NFA.

$$FCF = NP - \Delta NFA + k_D * D * (1 - t)$$

3.4.3 Valuation based on Cash Flow

There are 2 valuation methods by discounting the flows mentioned above. Those are substitutive; therefore, they perform the same valuation of the company. To simplify in this work, we will use the method of discounting the CFeq.

We will only use the first method which assumes stable growing (inflation) for the 5 next years. This is because it is the best option for Ibercaja Banco which forcast is to maintain profit over the next 3 years but affected to inflation, they will grow at this rate. To calculate the value of the shares according to the first method, we will discount the CFeq at a rate suitable for this flow, which is k_E.

k_E is the return that shareholders obtain for the money they have invested in the company, i.e., the ROE, the financial return.

We calculate the value of the company assuming that g=inflation as Ibercaja Banco has stated in his new Strategic Plan:

Assuming a constant growth and specific years Cash Flow: CFeq=NP

$$E_{2023} = \frac{CFeq * (1+g)^n}{k_E}$$

$$e_{2023} = \frac{E_{2023}}{n^{\underline{o}}\ of\ shares}$$

$$V_{2023} = E_{2023} + D_{2023}$$

Summary:

Having presented the methodologies, it is time to present the results for Ibercaja Banco and comment them. Then, the same will be done for their competitors Kutxabank and Cajamar. Afterwards, in chapter 5, you will find a comprehensive comparison with all the data recollected. Finally, the project will end with some conclusions in chapter 6.

4 METHODOLOGIES APPLIED TO IBERCAJA BANCO AND ITS COMPETITORS

In this section, the results will be presenting following the methodology for each specific case of these banks. First, Ibercaja Banco will have a more extensive explanation and then his competitors will follow. Kutxabank and Cajamar were the competitors chosen due to a similar financial situation so a fair comparison with

Ibercaja Banco could be done. Both have not yet announced his Initial Public Offer, both have similar volume of assets, and both operate mainly in Spain.

Due to a limit of length of the project, the mathematical calculations of the three companies can be found in the Annexes section as Annex I. Now, it will only be presented the results and some comments and interpretations to facilitate their correct understanding.

4.1 Methodologies applied to Ibercaja Banco

In this section, it is found the valuation of Ibercaja Banco through the methodology previously presented. Some explanations will be given before presenting the table:

Three solvency ratios have been calculated in order to determine a fair value of beta. This is used when discounting future earnings and dividends and stablish a right price per share. It is remembered that the CET1 Ratio should be above 10% and the Tier 2 Ratio above 2%. When these are calculated, they have been compared to those of Unicaja Banco, which provides a beta of 0,99. Then, depending on how much solvency the entity is lacking or surpassing, the beta will increase or decrease respectively.

The Enterprise Value/EBITDA Ratio has been calculated with the book value of the shares of each company. This should not be like this but there is not a market capitalization for these banks, so it has been used this instead. Also, the EBITDA is different for banks when their main incomes and expenses are financial interests. They will have to pay if customers/businesses/investors lent their money, and they will use that capital to lent money to other customers and earn interests. In this case, the "EBTDA" has been used due to the fact that it is impossible to avoid interests in that quantity. It is advisable to observe lower values because it means more efficiency managing own resources when earning money.

For income statement multiples, it is needed a Risk-Free Rate, a Premium Rate and a Beta. For global companies, the Risk-Free rate is usually taken as the rate on 10-year US bonds. However, despite the fact that these 3 banks operates in other countries, the majority of their businesses is conducted in the same country where their headquarters are located, Spain. Therefore, we will take the rate on Spanish 10-year

bonds. The risk-free rate used for the entire project is the one auctioned on 01/01/2024 which is 2,98%[2].

Then, a Risk Premium of 7,95%[3] is used to get a total portfolio performance of 10,93% (2,98% + 7,95%). This specific percentage was chosen because it is the average profitability of the Spanish Index, IBEX35, of its entire history (30 years). The main sector influencing this index are banks and therefore, it is a realistic expectation.

Furthermore, as stated before these companies are not listed on the market, so the betas of each company are calculated based on the solvency of their accounts.

On April 27th, Ibercaja Banco presented his new Strategic Plan for the period 2024-2026[4]. Among other new objectives, Ibercaja Banco wants to build a sustainable client base for future profits and to increase their solvency ratios. The total budget for each year will be around €110 million per year. And also, the forecast is to stabilise the profit in €300 million during these years but inflation still will be affecting those.

That is why the project is based on using the same quantity of earnings but being affected by an expected inflation rate for Spain in 2025. This rate is expected to be 2,5%[5] for 2025 and it is assumed that it will stay the same until 2030. The discounted method will take into account 5 years ahead, meaning that Ibercaja Banco is supposed to be able to continue its operations until 2030.

[2] Refer to the bibliography where an official source states this Risk-Free Rate.
[3] Refer to the bibliography where an official source states this Risk Premium.
[4] The Strategic Plan can be found in the bibliography.
[5] Refer to the bibliography where an official source states this Inflation Rate.

31/12/2023 in Euros	Ibercaja Banco
Assets	54.516.480.000
Liabilities	51.199.021.000
Book Value (Equity)	3.317.459.000
CET1 Ratio	13,36%
Tier 2 Ratio	2,24%
Total Capital Ratio	15,60%
Beta	1,38
Nº of shares	214.427.597
Non-Current Assets Held for Sale	143.750.000
Investments	274.079.000
Debt without cost	0
GSV	54.098.651.000
NSV	2.899.630.000
Reduced GSV	2.899.630.000
EBITDA	1.186.464.000
Enterprise Value Ratio	2,80
Risk free rate	2,98%
Risk premium	7,95%
Em	10,93%
Cost of Capital, E (Expected return)	13,99%
Expected Inflation Rate 2025	2,50%
Number of years	5
Current earnings	328.711.000
EPS	1,53
Dividends paid	168.247.000
DPS	0,78
Pay-Out Ratio	51%
e2023 (Discounting Earnings)	12,40
e2023 (Discounting Dividends)	6,35
NFA	1.344.199.000
Amortization	-81.671.000
Variation NFA	63.099.000
Variation Debt	-1.324.583.000
Cfeq	1.798.064.000
D (Debt with cost)	42.399.639.000
Current Net Profit	328.711.000
Tax (t)	30%
kD	2,75%
FCF	1.126.332.051
kE (ROE)	9,91%
E (Debt without cost)	18.146.650.399
e2023 (Discounting Cash Flows)	84,63
V2023	60.546.289.399

Table 1: Results of Ibercaja

31/12/2023 in Euros	Unicaja Banco
CET1 Ratio	14,70%
Tier 2 Ratio	3,80%
Total Capital Ratio	18,50%
Beta	0,99

Table 2: Solvency Ratios of Unicaja

4.2 Methodologies applied to Kutxabank and Cajamar

In this section, the results of the methodology applied to both competitors are shown. Every comment necessary to be able to understand them have been done in the previous part. Having presented this, the next section will focus on analyzing and comparing Ibercaja Banco with its competitors in order to find strengths to exploit and weaknesses to improve.

31/12/2023 in Euros	Kutxabank	Cajamar
Assets	64.135.005.000	60.156.442.000
Liabilities	57.695.967.000	56.147.683.000
Book Value (Equity)	6.439.038.000	4.008.759.000
CET1 Ratio	17,20%	12,30%
Tier 2 Ratio	2,20%	2,00%
Total Capital Ratio	19,40%	14,30%
Beta	1,28	1,53
Nº of shares	200.000.000	1.059.028.000
Non-Current Assets Held for Sale	327.382.000	94.242.000
Investments	266.253.000	216.409.000
Debt without cost	0	0
GSV	63.541.370.000	59.845.791.000
NSV	5.845.403.000	3.698.108.000
Reduced GSV	5.845.403.000	3.698.108.000
EBITDA	1.331.216.000	815.000.000
Enterprise Value Ratio	4,84	4,92
Risk free rate	2,98%	2,98%
Risk premium	7,95%	7,95%
Em	10,93%	10,93%
Cost of Capital, E (Expected return)	13,14%	15,16%
Expected Inflation Rate 2025	2,50%	2,50%
Number of years	5	5
Current earnings	315.442.000	157.702.000
EPS	1,58	0,15
Dividends paid	150.284.000	28.541.000
DPS	0,75	0,03
Pay-Out Ratio	48%	18%
e2023 (Discounting Earnings)	13,58	1,11
e2023 (Discounting Dividends)	6,47	0,20
NFA	1.210.464.000	1.153.228.000
Amortization	-20.362.000	-74.516.000
Variation NFA	15.050.000	46.507.000
Variation Debt	-2.692.793.000	-2.457.080.000
Cfeq	3.043.647.000	2.735.805.000
D (Debt with cost)	55.704.753.000	55.239.173.000
Current Net Profit	315.442.000	157.702.000
Tax (t)	30%	30%
kD	2,75%	2,75%
FCF	1.382.446.495	1.193.047.080
kE (ROE)	4,90%	3,93%
E (Debt without cost)	62.129.198.685	69.543.714.829
e2023 (Discounting Cash Flows)	310,65	65,67
V2023	117.833.951.685	124.782.887.829

Table 3: Results of Kutxabank and Cajamar

5 ANALYZING RESULTS AND COMPARING COMPANIES

First of all, the solvency of the companies will be analyzed and then the betas will be calculated.

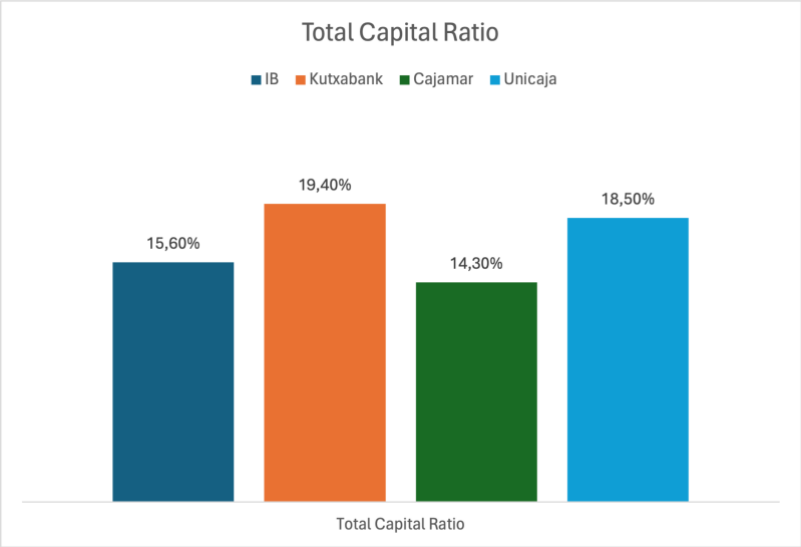

Figure 1: Total Capital Ratio

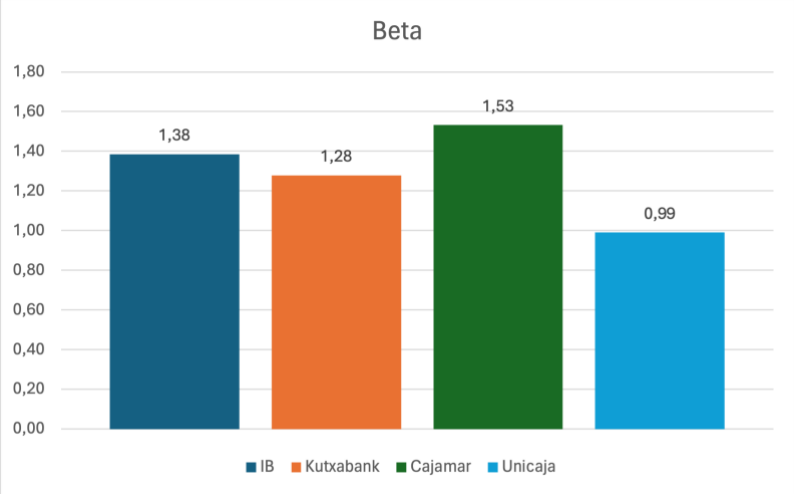

Figure 2: Calculated Betas

Unicaja is the reference point for this case. It has a Total Capital Ratio of 18,50% and a beta of 0,99. The Total Capital Ratio is the sum of both CET1 Ratio and Tier 2 Ratio which makes a lot of sense using it as a general indicator of solvency. Ibercaja Banco (dark blue column) has a lower solvency than Unicaja (15,60%) and therefore, a higher beta is stablished for it. Later on, it will be used when discounting dividends and earnings in order to stablish a share value.

Now, the Enterprise Value is compared. Cajamar and Kutxabank has a very similar value around 5. But Ibercaja Banco has only 2,80 which is almost half the value compared to its competitors. This shows how Ibercaja Banco should focus on being more efficient with the EBITDA that is generating. It is recommended that the bank consolidates its business in national territory and keep an eye on growing steadily as these last years.

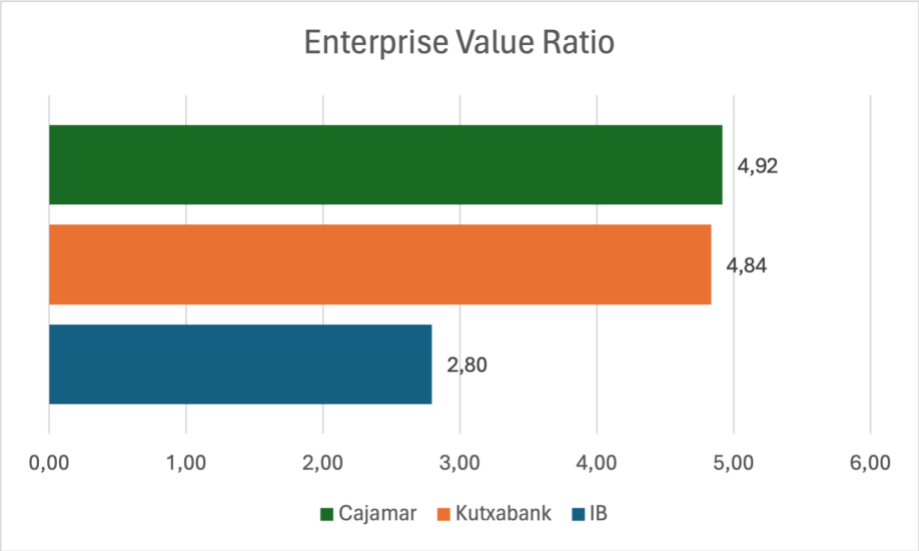

Figure 3: Enterprise Value Ratio

The EPS, DPS and Pay-Out Ratio shows a different perspective. In this case Cajamar is lagging behind and Ibercaja Banco has a better DPS and Pay-Out Ratio than Kutxabank. Investors of Ibercaja Banco are probably satisfied on how much value the bank is generating for them. This is also really good when, in the future, Ibercaja becomes a publicly traded company and shows how well are paid the investments in the company.

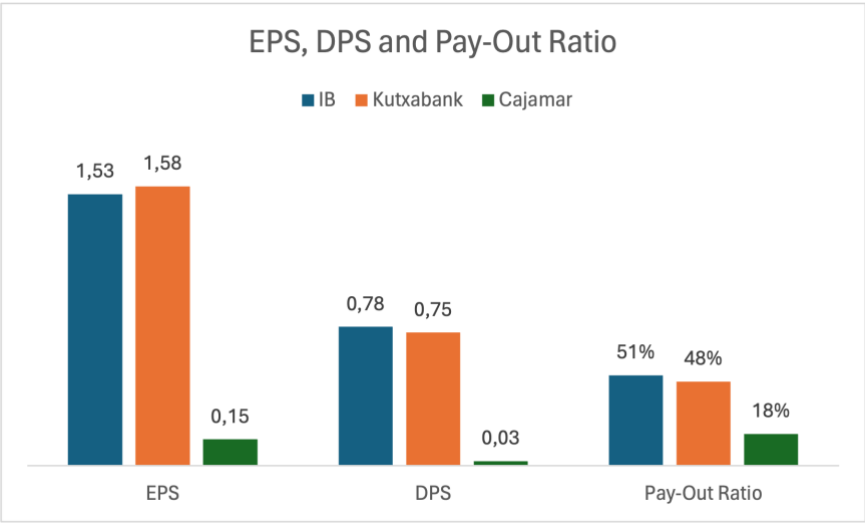

Figure 4: EPS, DPS and Pay-Out Ratio

Moving in, the share value discounting earnings and dividends is compared. Like before, Ibercaja Banco and Kutxabank are leading compared with Cajamar. Even though, Kutxabank is bigger in terms of assets and has a faster growth, Ibercaja Banco is really similar when comparing share value. These prices are very reliable, and it provides security to those who are prone in investing in Ibercaja Banco.

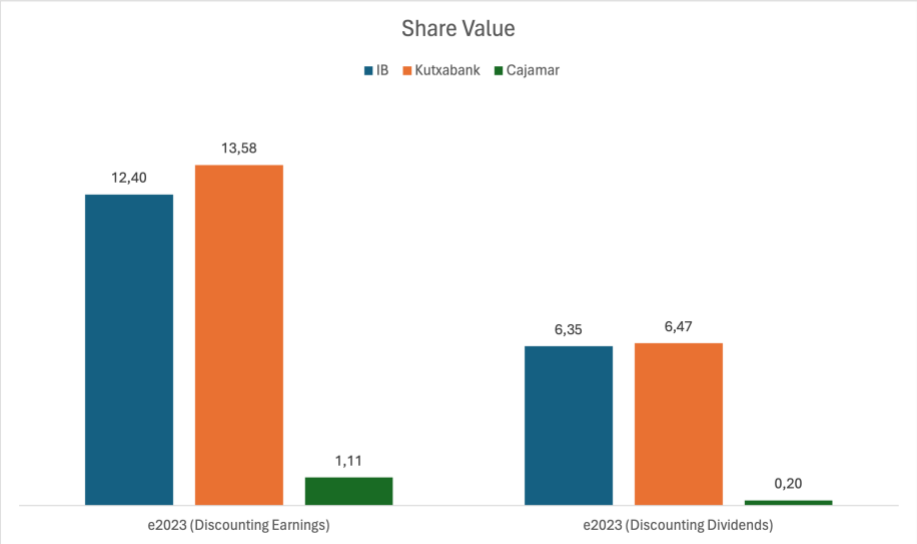

Figure 5: Share Value Discounting Earnings and Dividends

Now the Free Cash Flow and the Equity Cash Flow are shown. In these values, all three banks are very similar in FCF, there is no insights available. But the Equity Cash Flow is different. Once again, Ibercaja is behind its competitors due to its small equity base and debt variation. Ibercaja Banco is the bank which has a lower decrease of its debts compared to the last year. While the others have paid back €2.500 million of debt last year, Ibercaja Banco's debts only decreased €1.300 million in the same period.

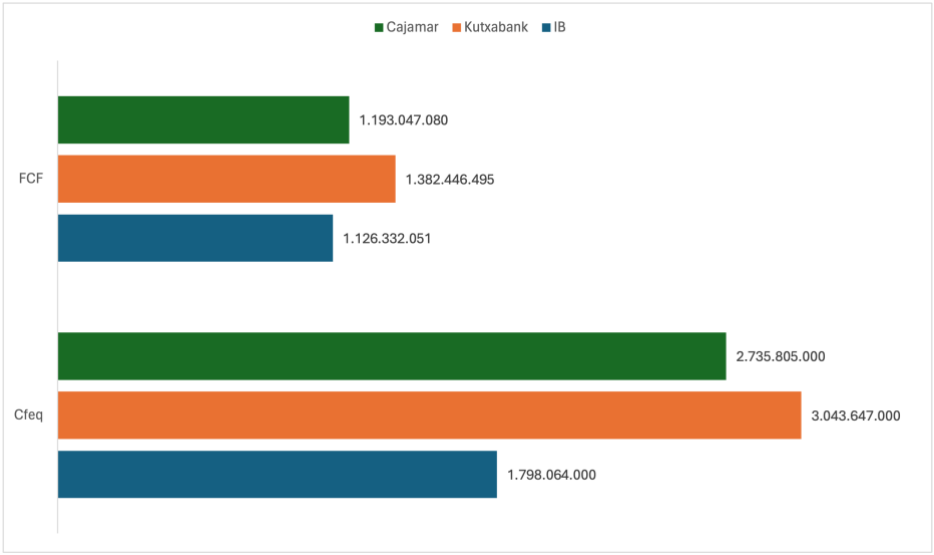

Figure 6: Free Cash Flow and Equity Cash Flow

Finally, the ROE and Total Value of Companies are analyzed. The ROE is an extraordinary strength in Ibercaja Banco. In this case, the low equity base allows to generate a huge return. This is a demonstration of high efficiency because Ibercaja Banco is able to earn a good profit with its own resources. This is why, as it will be stated in the conclusions, Ibercaja Banco should grow and consolidate in Spain, so a higher benefit is achieved.

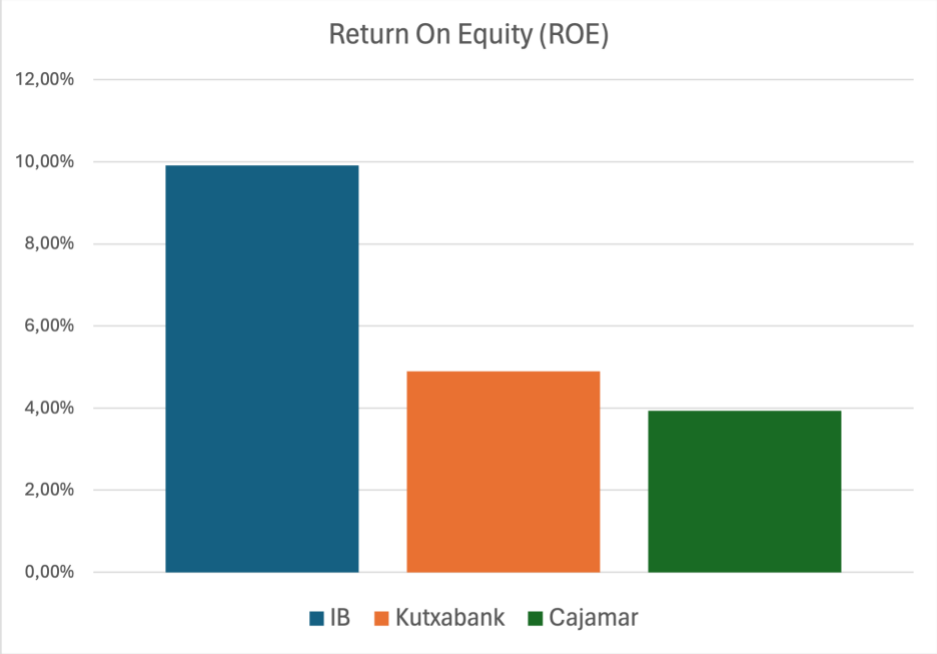

Figure 7: Return On Equity

The Total Value of the Company provides little to no insights. Ibercaja Banco is still a small company compared to the others. Its capacity to generate cash flows in the future is still developing but it has a great potential.

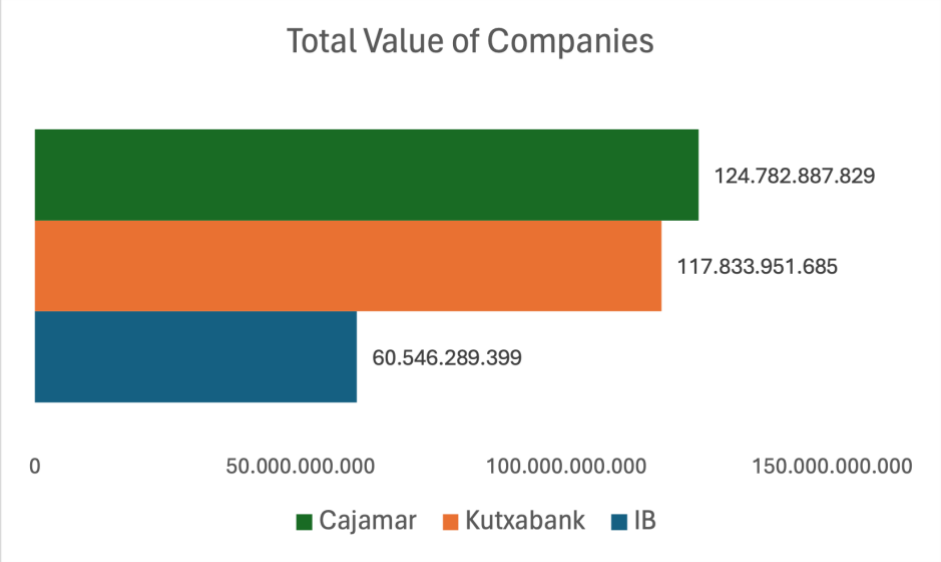

Figure 8: Discounted Value from Cash Flows

6 CONCLUSIONS, THE VIABILITY OF AN IPO AND ITS FUTURE BENEFITS

In this section, some conclusions are presented, including the viability of an IPO, and the potential benefits that this decision has on the stock. There are some insights that need to be explained before concluding with a definitive answer.

The analysis begins by acknowledging Ibercaja Banco's seemingly smaller size compared to its competitors. Its lower equity and final value (over 47€ billion) suggest potential limitations in its overall size. However, this initial observation needs further exploration.

Examining the Earnings Per Share (EPS), Dividend Per Share (DPS), and Pay-Out Ratio reveals key insights. While Cajamar appears larger than Ibercaja Banco, its significantly higher number of outstanding shares dilutes the value returned to individual shareholders, as evidenced by its low EPS and DPS. This highlights Ibercaja Banco's strength in rewarding shareholders with a higher Pay-Out Ratio.

Furthermore, discounting future earnings and dividends reveals a more realistic valuation for Ibercaja Banco's shares compared to the seemingly undervalued valuation of Cajamar and the potentially overvalued position of Kutxabank. This suggests a potential "sweet spot" for Ibercaja Banco's share price (between €12,40 and €6,35) that could attract investors and enhance liquidity.

Unfortunately, the CF_{eq} and FCF are smaller than the competitors. It can be observed that Cajamar and Kutxabank has similar values, despite the differences between the other 3 mentioned earlier. This is because the D (Debt with costs), is higher than expected in this companies. In Cajamar, from the total liabilities of over 56€ billion, 55 are debts costing them. But in Ibercaja Banco is not the same. From those 51€ billion, only 42 are debts with costs, and that leads to a huge improvement. This is a differential factor for the company in which should be focused on improving even more. As improving solvency and liquidity aspects will lead to more strength and stability of their income.

Moving on, Ibercaja Banco's ROE nearly doubles that of Kutxabank. This can be attributed to its ability to generate the highest net profit despite having a lower equity base. This translates to Ibercaja being a more efficient and valuable company, effectively generating higher returns with fewer resources. This strength presents an opportunity for continued growth, especially if the bank can maintain its high Pay-Out Ratio, leading to both stable growth and attractive dividends for shareholders.

Now, that the results have been analyzed, it is possible to conclude if going public is a good idea or not. After getting these results, it is not recommended to Ibercaja Banco to fill an IPO yet. It could be concluded that Ibercaja has multiple of hindered strengths but filling for an IPO now will not benefit any of them.

It is recommended to focus on increasing their profit over time, expanding their business over all parts of Spain, and maintaining those dividends. Reinvesting the vast majority of earnings in growing more quickly is advised, as it was shown the huge efficiency of Ibercaja Banco in earning more with few own resources (Equity).

Only then, when earnings are slowing down and the Equity Cash Flow (CFeq) is improved, it will be recommended to start growing in equity attracting multiple investors to increase their own resources.

Also, being publicly traded will attract more consumers and facilitate the expansion over the country as more people will know how reliable Ibercaja Banco can be. A bigger equity base and more clients will inevitably lead to higher profits and prosperity for this bank.

The Spanish banking sector presents promising opportunities for growth. Ibercaja Banco, with its existing strengths and untapped potential, has the capacity to become a major player in the Spanish market. Careful strategic planning and execution will be key to unlocking this potential and solidifying its position as a leading financial institution.

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Although the content of this project is original, an artificial intelligence tool has been utilized to enhance certain aspects of its redaction.

ANNEX I: MATHEMATICAL PROCEDURE TO RESULTS OF IBERCAJA

The Book Value is first calculated.

$$Total\ Assets - Total\ Liabilities = Book\ Value\ (Equity)$$
$$= 54.516.480.000 - 51.199.021.000 = 3.317.459.000$$

Then the Gross Substantial Value, the Net Substantial Value, and the Reduced Gross Substantial Value (which, again, is the same as the NSV due to the fact that banks do not have debt without cost).

$$Gross\ Substantial\ Value$$
$$= Total\ Assets - NonCurrent\ Assets\ held\ for\ sale - Investments$$
$$= 54.516.480.000 - 143.750.000 - 274.079.000$$
$$= 54.098.651.000€$$

$$Net\ Substantial\ Value = Gross\ Substantial\ Value - Total\ Liabilities$$
$$= Reduced\ Gross\ Substantial\ Value$$
$$= 54.098.651.000 - 51.199.021.000 = 2.899.630.000$$

Moving on into the income statement methods, it is now calculated the Expected Return, the Earnings per Share and Dividends per Share.

$$Expected\ Return = Risk\ Free\ Rate + (Risk\ Premium * Beta)$$
$$= 2{,}98\% + (7\% * 0{,}99) = 9{,}91\%$$

$$Earnings\ per\ Share = \frac{Earnings}{Nº\ of\ shares} = \frac{328.711.000}{214.427.597} = 1{,}53€\ per\ Share$$

$$Dividends\ per\ Share = \frac{Dividends}{Nº\ of\ shares} = \frac{168.247.000}{214.427.597} = 0{,}78€\ per\ Share$$

Then, it is feasible to calculate the Pay-Out Ratio, and the respective value per share when discounting earnings and dividends.

$$PayOut\ Ratio = \frac{DPS}{EPS} = \frac{0{,}78}{1{,}53} = 51\%$$

$$e_{2023}(Discounting\ Earnings) = \frac{EPS}{Expected\ Return} = \frac{1{,}53}{9{,}91\%} = 15{,}47\ per\ Share$$

$$e_{2023}(Discounting\ Dividends) = \frac{DPS}{Expected\ Return} = \frac{0{,}78}{9{,}91\%} = 7{,}92€\ per\ Share$$

Finally, it can be found the calculations for the Cash Flow for equity and the Free Cash Flow.

$$CashFlow\ for\ equity$$
$$= Net\ Profit + (\Delta\ Net\ Fixed\ Assets - Amortization)$$
$$+ \Delta\ Operating\ Funds\ Needs - \Delta\ Debt$$
$$= 328.711.000 + (63.099.000 - 81.671.000) + (-1.148.871.000)$$
$$- (-1.324.583.000) = 485.851.000€$$

$$FCF = NP + (\Delta\ NFA - Amortization) + \Delta\ OFN + k_D * D * (1 - t)$$
$$= 328.711.000 + (63.099.000 - 81.671.000) + (-1.148.871.000)$$
$$+ 5\% * 42.399.639.000 * (1 - 30\%) = 645.255.365€$$

At the end, here it is calculated the ROE, the Debt Without Cost and the Total Value of the Company.

$$k_E = ROE = \frac{Earnings}{Equity} = \frac{328.711.000}{3.317.459.000} = 9{,}91\%$$

$$E\ (Debt\ without\ cost) = \frac{CF_{eq}}{k_E} = \frac{485.851.000}{9{,}91\%} = 4.903.367.312€$$

$$e_{2023} = \frac{E(Debt\ without\ cost)}{Nº\ of\ shares} = \frac{4.903.367.312}{214.427.597} = 22{,}87€\ per\ Share$$

$$V = E + D = 4.903.367.312 + 42.399.639.000 = 47.303.006.312€$$

ANNEX II: MATHEMATICAL PROCEDURE TO RESULTS OF KUTXABANK

Kutxabank has more than 64€ billion in assets and 57€ billion in liabilities, amounting to 6.4€ billion in Book Value (Equity):

$$Total\ Assets - Total\ Liabilities = Book\ Value\ (Equity)$$

$$64.135.005.000 - 57.695.967.000 = 6.439.038.000€$$

Having 327€ million in Non-Current Assets Held for Sale and more than 250€ million in investments, the Gross Substantial Value is:

$$Gross\ Substantial\ Value$$
$$= Total\ Assets - NonCurrent\ Assets\ held\ for\ sale - Investments$$

$$64.135.005.000 - 327.382.000 - 266.253.000 = 63.541.370.000€$$

Now, subtracting the total liabilities to that number we get the Net Substantial Value and the Reduced Gross Substantial Value as there is no debt without cost for banks:

$$Net\ Substantial\ Value = Gross\ Substantial\ Value - Total\ Liabilities$$
$$= Reduced\ Gross\ Substantial\ Value$$

$$63.541.370.000 - 57.695.967.000 = 5.845.403.000€$$

$$Expected\ Return = Risk\ Free\ Rate + (Risk\ Premium * Beta)$$

$$3\% + (7\% * 0{,}99) = 9{,}91\%$$

Then the Earnings per Share and Dividends per Share ratios are calculated with the results of this year and the number of shares stated in their annual accounts.

$$Earnings\ per\ Share = \frac{Earnings}{Nº\ of\ shares}$$

$$EPS = \frac{315.442.000}{2.000.000} = 157{,}72€\ per\ Share$$

$$Dividends\ per\ Share = \frac{Dividends}{Nº\ of\ shares}$$

$$DPS = \frac{150.284.000}{2.000.000} = 75{,}14€\ per\ Share$$

Finally, we are ready to calculate the Payout Ratio and the proposed value per share by the method of discounting earnings and dividends with no growth.

$$PayOut\ Ratio = \frac{DPS}{EPS}$$

$$PayOut\ Ratio = \frac{75{,}14}{157{,}72} = 48\%$$

$$e_{2023}(Discounting\ Earnings) = \frac{EPS}{Expected\ Return}$$

$$e_{2023}(Discounting\ Earnings) = \frac{157{,}72}{9{,}91\%} = 1.592€\ per\ Share$$

$$e_{2023}(Discounting\ Dividends) = \frac{DPS}{Expected\ Return}$$

$$e_{2023}(Discounting\ Dividends) = \frac{75{,}14}{9{,}91\%} = 758€\ per\ Share$$

The last group of calculations are based in Cash-Flows leading to a final valuation of how much the company is worth and its value per share.

$$CashFlow\ for\ equity = Net\ Profit + (\Delta\ Net\ Fixed\ Assets - Amortization) + \Delta\ Operating\ Funds\ Needs - \Delta\ Debt$$

$$CFeq = 315.442.000 + (15.050.000 - 20.362.000) + 874.718.000 - (-2.692.793.000) = 3.877.641.000€$$

Then, assuming a total debt with cost (D) of 55.704.753.000 (Cash lent), a tax rate (t) of 30% and an interest (k_D) of 5% on the debt, we calculate the Free Cash Flow, the Cash Flow for debt and the Capital Cash Flow.

$$FCF = NP + (\Delta\ NFA - Amortization) + \Delta\ OFN + k_D * D * (1 - t)$$

$$FCF = 315.442.000 + (15.050.000 - 20.362.000) + 874.718.000 + 5\% * 55.704.753.000 * (1 - 30\%) = 3.134.514.355€$$

$$CF_d = k_D * D$$

$$CF_d = 5\% * 55.704.753.000 = 2.785.237.650€$$

$$Capital\ Cash\ Flow = CF_{eq} + CF_d$$

$$Capital\ Cash\ Flow = 3.877.641.000 + 2.785.237.650€$$

Later on, we can calculate the expected profitability of the share capital (k_E), which will be the same as the Return on Capital (ROE), and the Debt with Cost (E).

$$k_E = ROE = \frac{Earnings}{Equity} = \frac{315.442.000}{6.439.038.000} = 4{,}90\%$$

$$E\ (Debt\ without\ cost) = \frac{CF_{eq}}{k_E} = \frac{3.877.641.000}{4{,}90\%} = 79.153.307.896€$$

Finally, we are able to calculate the value per share discounting cash-flows $(e_{2023)})$ and the total value of the company (V).

$$e_{2023} = \frac{E(Debt\ without\ cost)}{Nº\ of\ shares} = \frac{79.153.307.896}{2.000.000} = 39.577€\ per\ Share$$

$$V = E + D = 79.153.307.896 + 55.704.753.000 = 134.858.060.896€$$

ANNEX III: MATHEMATICAL PROCEDURE TO RESULTS OF CAJAMAR

Now it is the turn of Cajamar being evaluated exactly the same process as it was followed with Kutxabank. First, the Book Value will be calculated.

$$Total\ Assets - Total\ Liabilities = Book\ Value\ (Equity)$$
$$= 60.156.442.000 - 56.147.683.000 = 4.008.759.000$$

Then the Gross Substantial Value, the Net Substantial Value, and the Reduced Gross Substantial Value (which, again, is the same as the NSV due to the fact that banks do not have debt without cost).

$$Gross\ Substantial\ Value$$
$$= Total\ Assets - NonCurrent\ Assets\ held\ for\ sale - Investments$$
$$= 60.156.442.000 - 94.242.000 - 216.409.000 = 59.845.791.000€$$

$$Net\ Substantial\ Value = Gross\ Substantial\ Value - Total\ Liabilities$$
$$= Reduced\ Gross\ Substantial\ Value$$
$$= 59.845.791.000 - 56.147.683.000 = 3.698.108.000€$$

Moving on into the income statement methods, it is now calculated the Expected Return, the Earnings per Share and Dividends per Share.

$$Expected\ Return = Risk\ Free\ Rate + (Risk\ Premium * Beta)$$
$$= 2{,}98\% + (7\% * 0{,}99) = 9{,}91\%$$

$$Earnings\ per\ Share = \frac{Earnings}{Nº\ of\ shares} = \frac{157.702.000}{1.059.028.000} = 0{,}15€\ per\ Share$$

$$Dividends\ per\ Share = \frac{Dividends}{Nº\ of\ shares} = \frac{28.541.000}{1.059.028.000} = 0{,}03€\ per\ Share$$

Then, it is feasible to calculate the Pay-Out Ratio, and the respective value per share when discounting earnings and dividends.

$$PayOut\ Ratio = \frac{DPS}{EPS} = \frac{0{,}03}{0{,}15} = 18\%$$

$$e_{2023}(Discounting\ Earnings) = \frac{EPS}{Expected\ Return} = \frac{0{,}15}{9{,}91\%} = 1{,}50€\ per\ Share$$

$$e_{2023}(Discounting\ Dividends) = \frac{DPS}{Expected\ Return} = \frac{0{,}03}{9{,}91\%} = 0{,}27€\ per\ Share$$

Finally, it can be found the calculations for the Cash Flow for equity, the Free Cash Flow, the Cash Flow for the debt and the Capital Cash Flow.

$$CashFlow\ for\ equity = Net\ Profit + (\Delta\ Net\ Fixed\ Assets - Amortization) + \Delta\ Operating\ Funds\ Needs - \Delta\ Debt$$

$$CF_{eq} = 157.702.000 + (46.507.000 - 74.516.000) + (-1.089.499.000) - (-2.457.080.000) = 1.497.274.000€$$

$$FCF = NP + (\Delta\ NFA - Amortization) + \Delta\ OFN + k_D * D * (1 - t)$$

$$FCF = 157.702.000 + (46.507.000 - 74.516.000) + (-1.089.499.000) + 5\% * 55.239.173.000 * (1 - 30\%) = 973.565.055€$$

$$CF_d = k_D * D = 5\% * 55.239.173.000 = 2.751.958.650€$$

$$Capital\ Cash\ Flow = CF_{eq} + CF_d = 1.497.274.000 + 2.751.958.650 = 4.259.232.650€$$

At the end, here it is calculated the ROE, the Debt Without Cost and the Total Value of the Company.

$$k_E = ROE = \frac{Earnings}{Equity} = \frac{157.702.000}{4.008.759.000} = 3{,}93\%$$

$$E\ (Debt\ without\ cost) = \frac{CF_{eq}}{k_E} = \frac{1.497.274.000}{3{,}93\%} = 38.060.459.747€$$

$$e_{2023} = \frac{E(Debt\ without\ cost)}{Nº\ of\ shares} = \frac{38.060.459.747}{1.059.028.000} = 35{,}94€\ per\ Share$$

$$V = E + D = 38.060.459.747 + 55.239.173.000 = 93.299.632.747€$$