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RANDOM
WALK
TEAM

Nubank

GICS Sector: Financials Industry: Financial Services | Exchange (NYSE)

BUSINESS DESCRIPTION

NU Overview

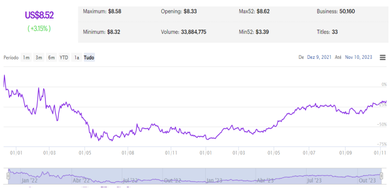
Exchange:	NYSE
Ticker:	NU
Valuation Date:	11.17.23
Recommendation:	BUY
Free Float:	30.000
Industry:	Financial Services
Current Price:	8.07
Target Price:	9.18
Upside:	13,75%
Market Cap:	38.272
P/E (TTM):	112,14
52 W Range:	3.39 - 8.87
P/BV (LTM):	6.60

TOP INVESTORS

Investor Name	% Outstanding	Position (M)
Sequoia Capital Partners Inc	11,35	414,28
Galileo (PTC) Ltd	9,44	344,54
Capital Research Global Investors	3,43	125,29
Baillie Gifford & Co.	3,28	119,79
Technology Crossover Ventures	3,18	116,21
Investor Name	% Outstanding	Position (M)
Rua California Ltd	0,62	22,65
SoftBank Group Corp	0,60	22,00
Junqueria (Cristina H Z)	0,13	4,59
Banco Santander SA	0,00	0,02

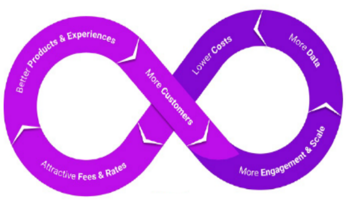
Source: Refinitiv

PRICE HISTORY

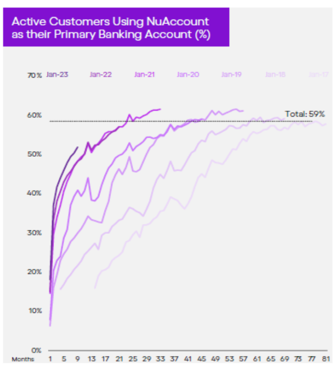


Source: Refinitiv

NU's BUSINESS MODEL



Source: Nu 3Q23 Results



Overview

Nu has emerged as a major player in the financial industry, boasting 90 million customers thanks to a strategic underwriting model with low entry costs. Their approach involves analyzing individual customer behavior to tailor solutions. Using ARPAC as a growth metric, the company has rapidly expanded into Mexico and Colombia, capturing 51% of the Brazilian population. Despite entering these markets recently, Nu exceeded expectations, reaching 565,000 and 3.2 million clients in Colombia and Mexico by December 2022. Starting in 2014 with a credit card, Nu has diversified its product offerings over the years, continuously seeking new opportunities for expansion.

Business Model

Nubank provides digital banking services to individuals and small and medium enterprises (SMEs) through a ecosystem of solution and services across the five financial seasons: 1) spending with credit and debit cards, QR code-based and Pix instant payment arrangements; 2) saving with NuAccounts; 3) investing with direct-to-consumer NuInvest digital investment platform; 4) borrowing with credit cards and personal loans; and 5) protecting with Nubank Vida insurance solutions. The success strategy hinges on a dynamic credit underwriting model tailored to individual customers, allowing for faster iteration and understanding of credit history. This approach, particularly effective for lower limit credits, has reduced delinquency risks, impacting costs positively.

Interest income and gains (losses) on financial instruments: Nubank generates interest income from loans, credit card operations, and short-term investments. Key drivers include: Maturity Transformation; Funding, Interest Rates, Credit Default Risk.

Non-interest income: Nubank also generates revenue through 1) Interchange fees to authorize and provide settlement on credit and debit card transactions 2) Reward revenues related to the Nu's Rewards subscription fee and related interchange fee 3) Recharge fees.

Revenue ($ million)	Q3'23	Q3'22
Interest Income and Gains (Losses) on Financial Instruments	1,732.7	987.3
Fee and Commission Income	404.1	319.6
Total	**2,136.8**	**1,306.9**
FX Neutral		
Interest income and Gains (Losses) on Financial Instruments	1,732.7	1,058.3
Fee and Commission Income	404.1	342.6
Total	**2,136.8**	**1,400.9**

Keys for a successful model:

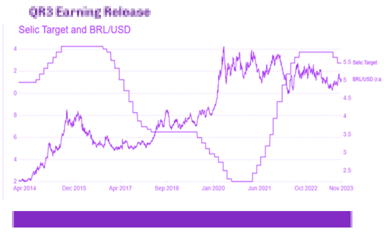
Nubank has clear objectives and performs agreements to keep a healthy long term business. Following this point, they perform partnerships, as a license with Mastercard for credit card creations. Also, its acquisition of **Easyinvest** enables Nubank to offer investment products. Underwritten by Chubb, the company could launch *Nubank Vida*, which is the life Insurance product. In 2021, an investment of 107 million shares on Nu Holdings from **Berkshire Hathaway** helped for a worldwide expansion, because all people around the world would put an eye on Buffet´s investments.

INDUSTRY OVERVIEW AND COMPETITIVE POSITIONING

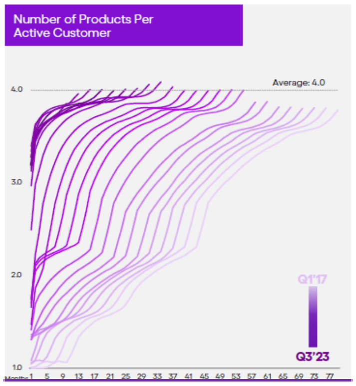
On November 1st, the Central Bank of Brazil announced a decisive 50-basis-point reduction in its reference interest rate, marking the third consecutive cut and bringing rates down to 12.25% from the previously held 13.75% annual rate until August. This unanimous decision by the Monetary Policy Committee (Copom) reflected their view that, despite Brazil's current economic growth, a forthcoming slowdown is anticipated.

The Copom, foreseeing unanimously further reductions of the same magnitude in upcoming meetings, deems this gradual pace appropriate to sustain a necessary contractionary monetary policy for the ongoing disinflation process. However, they acknowledge an "adverse" external environment for emerging economies, prompting a cautious approach in the conduct of monetary policy.

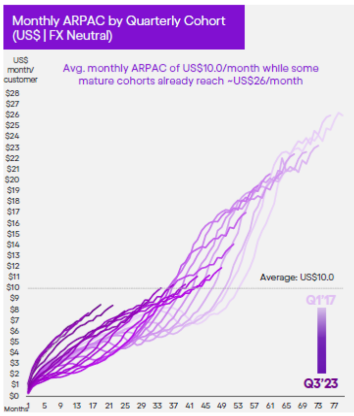
The potential increase in long-term U.S. interest rates has resulted in a global liquidity tightening and a strengthened dollar, contributing to inflationary pressures in emerging markets, including Brazil. The Central



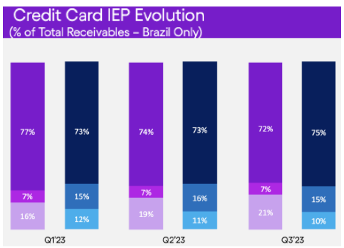
Source: Nu 3Q23 Results



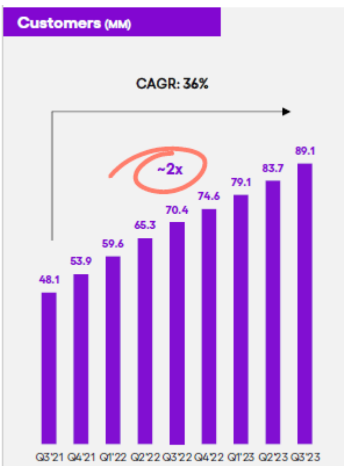
Source: Nu 3Q23 Results



Source: Nu 3Q23 Results



Source: Nu 3Q23 Results



Source: Nu 3Q23 Results

Bank emphasized the persistent elevation of core inflation in various countries, coupled with emerging geopolitical tensions following the Israel-Palestine conflict.

Policy makers emphasized that the overall extent of the rate-cutting cycle over time hinges on factors such as inflation dynamics and the output gap. They underscored the importance of maintaining a restrictive monetary policy until the disinflation process solidifies and inflation expectations align with targets.

Global uncertainties and concerns about President Luiz Ignacio Lula da Silva's commitment to fiscal discipline prompted economists polled by the Central Bank to adjust their rate-cutting cycle estimates. The forecasted rates are now expected to reach 9.25% by the end of 2024, up from the previous 9%. Lula's statement that his government does not need to eliminate its primary budget deficit next year, deviating from previously proposed fiscal rules, impacted local markets and reignited concerns about a larger-than-estimated increase in Brazil's public debt. The Central Bank, already highlighting market distrust of the government's fiscal targets as a reason for long-term inflation expectations not converging with the target, reaffirmed the importance of "firmly pursuing" fiscal goals in its statement.

Policy makers revised their inflation projections for this year to 4.7%, down from the previous 5.0%, now within the official target of 3.25%, with a tolerance margin of 1.5 percentage points in either direction. Meanwhile, inflation forecasts for 2024 and 2025 have been increased to 3.6% and 3.2%, from 3.5% and 3.1%, respectively. The inflation target for the upcoming year and beyond remains at 3%, with the same tolerance interval.

Yield Curve: Nubank's Response to Central Bank Policies

In response to the interest rate reduction cycle initiated by the Central Bank of Brazil since last August, a noteworthy development in the interest rate curve has emerged, characterized by a 'Flat' yield curve. This configuration is defined by shorter-term interest rates aligning closely with longer-term rates, indicative of a disinvestment trend. The consequence of such a scenario is a minimal rate spread, potentially culminating in a reduction of Nubank's Net Interest Margin (NIM) and, consequently, a decline in net interest income.

In a low spread-interest rate environment, the profitability of loans diminishes, prompting financial institutions, including Nubank, to exercise increased discernment and caution when extending new loans. However, it's crucial to note that a flattened yield curve, particularly following a period of inverted curves, typically proves transient. The dynamic nature of short-term interest rates, which often decrease more rapidly than their long-term counterparts, tends to lead to a subsequent steepening of the yield curve. In this scenario, banks, including Nubank, can leverage the opportunity to secure funds at lower rates and extend loans at higher rates, thereby bolstering profit margins.

As the Central Bank's interest rate policies continue to shape the financial landscape, Nubank remains attuned to the evolving yield curve dynamics, strategically positioning itself to navigate the challenges and capitalize on potential opportunities in the interest rate environment.

Bank Industry

The emergence of open banking has empowered consumers by granting them access to their financial data across various institutions. This newfound transparency has increasingly facilitated customers in refinancing their loans, switching accounts, and exploring new financial products and services. Consequently, competition is intensifying, and traditional banks are under pressure to adapt and innovate.

Nubank, in particular, is poised to capitalize on these industry changes. With its agile, technology-driven approach and customer-centric services, it has successfully carved out a space in the market and challenged the status quo. While traditional banks grapple with these [1]changes, they must also consider the potential impact of rising interest rates, increased regulatory scrutiny, and shifting customer expectations.

The banking sector is evolving, and Nubank serves as a clear example of a disruptor reshaping the industry landscape. Traditional banks must adapt to these changes, innovate their offerings, and enhance customer experiences to remain competitive in an increasingly crowded and dynamic market.

Bank Profitability

The results of the banking system are expected to remain under pressure in the medium term. Banks' net income reached BRL 139 billion in 2022, a 2% increase compared to the previous year. Return on Equity (ROE) stood at 14.7%, down from 15.7% at the end of 2021. During this period, banks incurring losses accounted for only 3% of the total system assets. The anticipated scenario for 2023 includes weaker economic activity, lower credit growth, and elevated levels of delinquency and inflation. Consequently, the profitability of the banking system is likely to continue facing challenges in the medium term.

Approximately 97% of the banking system's assets belong to banks with a positive ROE, with 95% of the assets exhibiting an ROE higher than 5%, and 76% boasting an ROE surpassing 10%.

Net Interest Margins (NIMs) showed signs of stabilization from 2022 onward. Regarding the credit margin (credit NIM), the gradual renewal of the loan portfolio at higher rates appeared to be offsetting the increase in financing costs. This phenomenon indicates a positive trend in adapting to changing financial landscapes, supporting the potential for sustained profitability, albeit amidst the challenging economic conditions expected in 2023.

51% of Brazilians currently have an account. From the main neo banks, Nubank has 62% of users, being the top from the main competitors, as for example PicPay, Mercado Pago and Inter.
One of the most comparable companies with Nubank is PagBank, a financial and digital payment company, which started in 2006.

COMPETITIVE POSITIONING

In the competitive landscape of digital banking, Nubank's dominance is propelled by its pioneering role in Latin America's native digital banking, establishing undisputed leadership in Brazil and expanding globally. The platform's success is fortified by a trusted global brand, strategic talent acquisition, and operational efficiency driven by a fully digital model.

Nubank's technological prowess is evident in its proprietary cloud-based core banking platform (NuCore), ensuring centralized control and facilitating rapid expansion. Operating with low costs, Nubank leverages advanced technology for efficient customer acquisition, creating a robust LTV/CAC ratio.

The company's commitment to customer satisfaction is reflected in continuous investments in technology and exceptional customer service, resulting in high engagement and low customer loss rates. Nubank's strategic data advantage, powered by proprietary data and advanced algorithms, enhances risk evaluation and product differentiation.

The self-reinforcing network effects of Nubank's business model contribute to compounded growth, expanding the ecosystem through positive customer experiences and referrals. These collective strengths position Nubank as a leader in the digital banking sector, marked by a highly defensible and innovative business model.

INVESTMENT SUMMARY

We issue a BUY recommendation for Nu Holdings Ltd (NU), and set a 12-month target price of $9.18, through a comprehensive analysis incorporating our residual income model (RIM), dividend discount model (DDM), free cash flow to the equity, relative valuation, and value maps. Our target price reflects a 13.75% upside from the closing price of $8.07 on November 17, 2023.
A scenario analysis was conducted, considering the **Base Case** target price projection and two alternative scenarios outlined in **exhibit inv sum 1**. **1) Bear Case**: this scenario anticipates a delay in new market expansion during the initial years. It foresees lower adoption rates of NU's products, resulting in reduced growth projections for Average Revenue Per Active Customer (ARPAC) and active clients. Additionally, macroeconomic factors are expected to elevate the cost of capital by up to 200 bps more in these new scenarios. **2) Bull Case**: In

contrast, this scenario predicts higher-than-expected adoption rates for NU products in new markets,

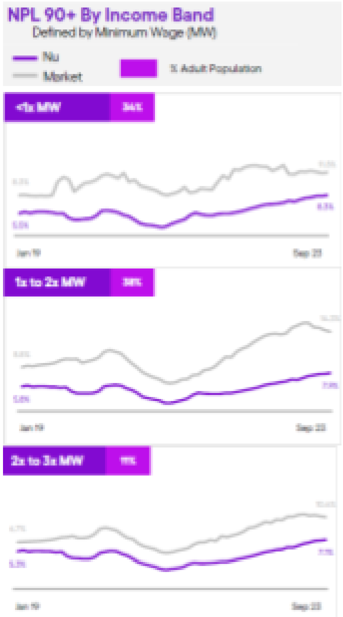
enhancing ARPAC and active customer growth beyond the base case projections. This rapid growth is also expected to elevate gross profits. Moreover, a favorable macroeconomic scenario is envisaged, wherein the cost of capital decreases by 50 bps.

Key Investment Drivers

Diverse Ecosystem of Financial Solutions: From credit and debit card transactions, QR code-based and Pix instant payments, to savings with NuAccounts, investing through NuInvest, and providing loans and insurance solutions, Nu Bank caters to the evolving needs of individuals and SMEs. This leads to a revenue diversity, through interest and non-interest channels.

Strategic Partnerships and Investments: Nu Bank has strategically positioned itself through key partnerships, including licensing with Mastercard for credit card creation, underwriting life insurance with Chubb, and acquiring easyinvest to offer investment products.

Market opportunity: There are meaningful pain points in the market due to the high concentration of the banking sector and historic lack of competition that involved less innovation. The incumbent banks have expansive and expensive branch distribution networks that lead to higher cost to serve, incentivizing to sell high-margin products while excluding a large segment of the population from the financial system (the unbanked population in these markets is 77.1 million adults in total).



Source: Nu 3Q23 Results

BRAZILIAN NEOBANK ECOSYSTEM

DIGITAL BANKS

will bank, iti, next, inter, nu, C6 BANK, neon

RETAIL

ame, banQi CASASBAHIA, magalupay

FINTECH

N26, PicPay, PagBank, mercado pago

Source: Americas MI / Random Walk

QR3 Customer Metrics

CUSTOMER METRICS	Q3'23	Q3'22	Q2'23
Number of Customers (in millions)	89.1	70.4	83.7
Number of Customers growth (%)	27%	46%	28%
Active Customers (in millions)	73.8	57.4	68.8
Activity Rate	83%	82%	82%
CUSTOMER ACTIVITY METRICS			
Purchase Volume (in $ billions)	29.0	21.2	26.3
Purchase Volume growth (%)	37%	75%	32%
Monthly Average Revenue per Active Customer (in $)	10.0	7.9	9.3
Monthly Average Cost to Serve per Active Customer (in $)	0.9	0.8	0.8

Growth Scenarios

		Scenario Analysis			
		NTM 1	2	3	Years 4 to 8
ARPAC Growth	Bear Case	7%	6%	5%	3%
	Base Case	12%	11%	10%	8%
	Bull Case	14%	13%	12%	10%
Customer Growth	Bear Case	10%	10%	10%	10%
	Base Case	25%	30%	20%	10%
	Bull Case	30%	35%	25%	15%
Gross Profit Ratio	Bear Case	42%	43%	44%	44%
	Base Case	42%	43%	44%	44%
	Bull Case	44%	45%	46%	46%
COE	Bear Case	14.53%			
	Base Case	12.53%			
	Bull Case	12.03%			

Source: Company data, team estimates

Market View: the market still sees uncertainty regarding the possibility of obtaining similar performance in new countries, but to support our buy recommendation, the actual base of customers in current markets and the rapid customer growth experiencing in the past will empower the cross-selling products and positioning in the market share, through growing with the particularly young customer base (with almost 70% of our customers under 40 years old) who are in the early stages of their financial journeys; and furthermore the competition in relative terms in the rest of the Latin American countries seems to be less than what it is currently facing with respect to the companies in Brazil and Mexico.

VALUATION

Our assessed target price of $9.18 has been computed through an integration of intrinsic and relative valuation methodologies. The breakdown involves a weighted average, with the excess return model contributing 20%, dividend discount model with a 10%, free cash flow to equity representing 30%, market multiples weighting a 20%, and another 20% assigned to the value maps valuation **(exhibit val 1)**. Recognizing the distinctive financial framework inherent in banking entities, necessitating specialized considerations for the treatment of debt, interest, and regulatory capital, our valuation approach leans heavily on equity-side methodologies and multiples. This strategic deployment ensures a comprehensive incorporation of the nuanced impact of financing directly.

Key Value Drivers

This valuation is based on NU's projected value drivers, most notably a PEG ratio of 0.9x, an estimated FY24 P/E of 36.5x, and a revenue growth of 40.8% for the next twelve months (mainly explained by the growth potential in Mexico and Colombia in the next few years). All of these metrics for NU are well above estimates for Brazil's largest comparable banks and other similar fintechs. Furthermore, the expected ROE for the fiscal year 20.4% is shown to outperform the Brazilian banking industry average (exhibit val 2).

Supplementing these considerations, the valuation assumptions for the forecast period of the Free Cash Flow to Equity (FCFE) method are meticulously detailed in appendix val 1. Similarly, the computation of the terminal growth rate, outlined in appendix val 2, draws from several factors such as long-term GDP growth, average inflation in each country, population growth, and long-term financial sector growth. These factors are weighed by the expected revenue contribution of each country at the conclusion of the forecasted period, enriching the comprehensive assessment of NU's valuation.

Cost of Equity

Assessing cash flows before debt payments or determining a weighted average cost of capital poses challenges, particularly in instances where debt and its repayments lack clear identification, being a common scenario within financial service firms like NU. While equity valuation can be directly undertaken by discounting cash flows to equity at the cost of equity, we advocate for this approach when analyzing financial service firms for the mentioned reason.

The estimation of the cost of equity involved two distinct periods: the forecast period and the terminal period. To derive its components, the risk-free rate drew upon the rate of a 10-year US sovereign bond. Anticipated convergence from the spot rate towards the average rate observed over the last 20 years is envisaged gradually during the forecast period, culminating in alignment with this average value throughout the terminal horizon. This assumption stems from projections outlined by the CME Group, forecasting an interest rate trajectory anticipated to remain below 3% within a minimum two-year timeframe (refer to appendix val 3).

Calculation of beta entailed leveraging comparable beta metrics from both fintech and banking sectors, alongside a monthly regression analysis of the 2-year NU beta. Additionally, the consideration of an equity risk premium factored in risks associated with LATAM and Brazil's specific equity risks in relation to the S&P 500. Finally, due to the score NU obtained in our ESG evaluation, it was decided not to make an additional adjustment to the beta for the result obtained.

Based on the outlined assumptions, the forecasted cost of equity stands at 12.53%, while the terminal cost of equity is projected at 13.05%. These figures are derived from the comprehensive analysis considering the growth prospects, industry benchmarks, and various valuation factors discussed earlier (exhibit val 3).

Valuation | Excess Return Model

Our Excess Return Model assessed NU at $8.53 per share (exhibit val 4), factoring in assumptions regarding forecasted and terminal cost of equity, along with a terminal growth rate of 3.85% (refer to appendix val 6). Due to the firm's low maturity and high anticipated growth, a six-year forecast was utilized, balancing reasonable projection periods to enhance estimate accuracy, mitigating inaccuracies within an extended horizon.

In essence, the value of a financial services firm can be delineated as the summation of present capital investment and the current value of anticipated future excess returns. The Excess Return Model concentrates on gauging a company's surplus returns beyond capital expenditures, deriving the company's value based on this surplus. The computation involves projecting cash earnings and subtracting capital charges by multiplying the cost of equity with the equity's book value for each period. Terminal value estimation follows the perpetuity growth formula, offering a comprehensive view of sustained capital value generation by the bank over the long term.

Exhibit val 1 - Valuation Matrix

Valuation Matrix		
Method	**Weightings**	**Share Price**
Excess Return Model	20%	$8.53
Dividend Discount Model	10%	$7.29
Free Cash Flow to Equity	30%	$11.30
Market Multiples	20%	$10.28
Value Mapping	20%	$6.50
Target Price		**$9.18**
Premium/(Discount) to last close		13.75%

Source: Company data, team estimates

Exhibit val 2 - Key Value Drivers

Key Value Drivers			
Key Value Driver	Nubank	Avg Brazilian Banks	Avg Fintech Peers
1. PEG Ratio (NTM)	0.9x	0.9x	-0.8x
2. Estimated P/E FY24	36.5x	7.6x	15.2x
3. Revenue Growth (NTM)	40.8%	15.9%	22.4%
4. ROE Growth FY24	20.1%	16.5%	12.3%

Source: Company data, team estimates

Exhibit val 3 - Cost of Equity

Valuation Assumptions		
Global Assumptions	**Forecast**	**Terminal**
Risk-free Rate	2.72%	2.91%
Beta	1.04	1.06
Market Risk Premium	9.44%	9.57%
Cost of Equity	**12.53%**	**13.05%**
Terminal Growth Rate		**3.85%**

Source: Company data, team estimates

Exhibit val 4 - Excess Return Model

Excess Return Model - Base Case	
Values in millions of USD, except the share price	
PV of Book Value of Equity Q3 2023	$ 5,981
PV of Equity Excess Return (next 6 years)	$ 10,061
PV of Terminal Excess Return	$ 24,508
Sum of PV Excess Return	$ 40,550
Shares Outstanding (in millions)	4,752
Implied Share Price	**$ 8.53**
Premium / (Discount) to last close	5.7%

Source: Company data, team estimates

Exhibit val 5 - Dividend Discount Model

Dividend Discount Model - Base Case	
PV of dividends - High-Growth Phase	$ 0.00
PV of dividends - Stable-Growth Phase	$ 2.11
PV of Terminal Price per Share	$ 5.17
Sum of PV Dividends/Price per share	$ 7.29
Implied Share Price	**$ 7.29**
Premium / (Discount) to last close	-9.7%

Source: Company data, team estimates

Exhibit val 6 - Free Cash Flow to Equity Model

Free Cash Flow To Equity - Base Case	
Values in millions of USD, except the share price	
PV of Net Income Forecasted	$ 22,169
PV of Reinvestment in Regulatory Capital	-$ 7,673
PV of Terminal Value of FCFE	$ 39,197
Sum of PV FCFE	$ 53,692
Shares Outstanding (in millions)	4,752
Implied Share Price	**$ 11.30**
Premium / (Discount) to last close	40.0%

Source: Company data, team estimates

Exhibit val 7 - Market Multiples Valuation

Market Multiples - Base Case				
Ticker	**P/E (NTM)**	**P/E (FY24)**	**P/BV**	**P/TBV**
NU	36.9x	36.5x	6.5x	7.4x
BBAS3.SA	3.7x	4.1x	0.9x	0.9x
SANB11.SA	12.5x	10.2x	2.1x	2.9x
ITUB4.SA	8.4x	7.8x	1.6x	1.8x
BBDC4.SA	8.8x	8.3x	1.0x	1.2x
COF	7.3x	8.2x	0.8x	1.1x
DFS	6.6x	7.1x	1.5x	1.5x
INTR	39.4x	30.3x	1.5x	1.8x
Median	**8.6x**	**8.2x**	**1.5x**	**1.7x**
Premium	325%	361%	490%	463%
Adjusted	27.9x	29.7x	7.4x	7.8x
Implied Price	$7.89	$10.26	$11.24	$10.42
Weightings	20%	30%	50%	0%
Price			**$10.28**	
Premium / (Discount) to last close			27.3%	

Source: Company data, team estimates

Return on equity (ROE): during the first six years of projected high growth, a 30% return on equity is expected based on NU's improved profits in FY23 and anticipated growth. Additionally, in line with the company's public intention, no dividends are anticipated during this period.

Excess Returns: capital charges were computed using a 12.53% cost of equity for the forecast period and 13.05% for the terminal period, applied to the average of current and previous year's ordinary shareholder's equity balance. Excess returns were derived by subtracting these charges from the adjusted cash Net Income. The terminal value of residual income was estimated based on a perpetuity growth formula, assuming a 3.85% terminal growth rate and a 20% ROE, slightly above the forecasted average for major banks in Brazil. After dividing the implied equity value by the 4.73 million basic shares outstanding at the end of Q3 FY23, the result yielded an equity valuation of $8.53 per share.

Valuation | Dividend Discount Model

Financial firms, particularly young and high-growth entities like NU, have increasingly opted to reinvest all earnings rather than paying dividends. Despite this divergence from dividend payments and the seeming incompatibility with the dividend discount model, this model remains adaptable to accommodate such firms. Presently with zero dividends and an anticipated continuation in the foreseeable future, it's crucial to recognize the potential for this scenario to evolve during periods of growth. As growth eventually moderates, the firm is likely to enhance its capacity to distribute dividends.

Our Dividend Discount Model valued NU at $7.29 per share (exhibit val 5), having the assumptions of a forecast and terminal cost of equity of 12.53% and 13.05% respectively, two forecasted phases of six years each one (high-growth and stable-growth phases), and a terminal growth rate of 3.85%. The terminal price per share at the end of the stable-growth phase was discounted using the cumulative cost of equity.

High-growth phase: in the high-growth phase, the forecast indicates a noteworthy surge in earnings per share, expected to escalate by 30% over the ensuing six years. During this robust growth period, the company is envisioned to maintain a dividend payout ratio of 0%, reflecting a strategic emphasis on reinvesting earnings to fuel continued expansion.

Stable-growth phase: during the stable growth phase, the earnings per share are projected to gradually decline over six years, reaching a final growth rate of 3.85% in the last year, which is considered the terminal growth rate. Over years 6 to 12, the payout ratio is anticipated to rise from 0% to 50% in a linear fashion as the growth rate diminishes. This adjustment mirrors the shift in financial strategy, moving from heavy reinvestment in high-growth phases to a balanced approach that involves distributing dividends to shareholders during the stable growth period.

Some digital banks or fintechs like MELI, DFS, and SQ have shifted dividend policies in subsequent years. However, considering the rarity of digital banks initially refraining from dividends and later altering this approach, the dividend discount valuation method carries less weight in calculating the target price. This deliberate decision aligns with a cautious evaluation of unique traits and historical trends within the digital banking and fintech sector.

Valuation | Free Cash Flow to Equity Model

Our approach adapts the free cashflow to equity measure to allow for the types of reinvestment that financial services firms make. For instance, given that banks operate under a regulatory capital ratio constraint, it can be argued that these firms have to increase regulatory capital in order to make more loans in the future.

Our Free Cash Flow to the Equity Model (FCFE) valued NU at $11.30 per share (exhibit val 6), having the assumptions of a forecast and terminal cost of equity of 12.53% and 13.05% respectively, and a terminal growth rate of 3.85%. An eight year forecast was used due to the low maturity of the business and the high growth potential expected. The estimation of terminal value of FCFE is accomplished through the application of the perpetuity growth formula. The valuation assumptions pertinent to the forecast period within the FCFE method have been comprehensively detailed in appendix val 1.

Net Income (net of debt charges): the expected net income over time, which will be a function not only of the profitability of the businesses that NU is involved in but will also be determined by the cash flow claims of lenders, preferred stockholders, and other noncommon claimholders. The net income for NU was forecasted based on a projection of active customers growth, the ARPAC evolution, the foreseen gross profit and the cost to serve a customer (operating expenses). It is assumed a decrease in the active customers growth from 49% during the fiscal year 2022 up to 10%at the end of the fiscal year 2026, continuing at this rate until the FY 2030. Similar estimation was applied to the ARPAC and gross profit, ending with an increase of 10% for the ARPAC and a stable gross profit over sales of 44% until the end of the forecasted period. In contrast, the cost to serve a customer (operational expenses) is anticipated to remain constant over the forecasted periods without significant fluctuations. These estimations collectively contribute to the projection of NU's net income by taking into account the anticipated dynamics in key performance indicators.

Reinvestment in Regulatory Capital: the reinvestment in regulatory capital will track the expected growth in risk adjusted assets over time. In order to estimate the required reinvestment in regulatory capital, it was necessary to project the growth of risk-weighted assets. Notably, RWA assets have exhibited substantial growth in the recent quarter, escalating from $8,005 million dollars in Q2 2023 to $19,294 million dollars in Q3 2023. Within the expected large expansion in Mexico and Colombia, a substantial uptick in RWA is anticipated, with annual growth rates projected at 35% and 30% over the next two years, eventually stabilizing to an annual growth rate of 20% starting from the third year. On the other hand, regarding the regulatory capital ratio, the Q3 2023 information highlighted a significant development: a targeted minimum capital adequacy ratio, starting at 6.5% effective from July 2023, escalating to 8.75% throughout the fiscal year 2024, and ultimately returning to the 10.5%. Considering the present trajectory, there is an expected upward trend in CET1 (Common Equity Tier 1) over the upcoming two years. It is projected to elevate from its current standing of 9.1% as of Q3 2023 to achieve the benchmark of 18% by Q2 2023, aligning with the typical historical trend. Additionally, the Tier 2 capital ratio is predicted to rise from 1.1% recorded in Q3 2023 to reach NU's historical ratio of 3% concerning Risk-Weighted Assets (RWA) by the third year within the projection period. Even when this ratio of 21% (18% CET1 + 3% Tier 2) is the double than what is required in Brazil for a financial services firm and Mexico for a SOFIPO (10.5% of the RWA required), in the absence of specific guidance from the management, the conservative approach of maintaining a ratio that is double the regulatory requirements form the third year forecasted serves as a prudent risk management strategy.

Valuation | Relative Valuation: Market Multiples

The multiple analysis conducted yielded a relative valuation of $10.28 per share (refer to exhibit val 7). This valuation was derived by examining Price-to-Earnings (P/E) and Price-to-Book Value (P/BV) multiples within two subsets of comparable companies. **1) Brazilian Major Banks:** the analysis focused on four listed retail banks chosen as comparables due to their similar operating models and regulatory-driven capital structures. These banks share comparable market capitalization and a similar number of active clients, making them relevant benchmarks. **2) Comparable Fintech Companies:** this subset includes two listed fintech companies with analogous capital structures. Additionally, a Brazilian digital bank with similar growth prospects was included in this category.

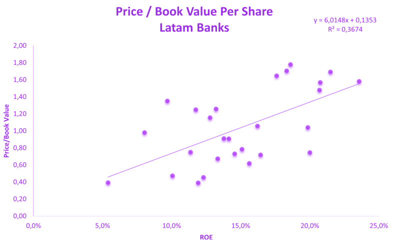
P/E: it was given a 50% weight, emphasizing the earnings importance for financial services firms´ value. Projection of cash earnings for the next 12 months (NTM) and fiscal year 2024 was used. Due to NU's shift from losses to earnings in 2022, LTM's P/E was less representative of the future. NU's forward P/E (NTM) is 36.9x, and P/E (FY24) is 36.5x, indicating premiums of 325% and 361% respectively compared to the comparable set median of 8.6x and 8.2x. This implies share prices of $7.89 and $10.26 for NTM and FY24 respectively.

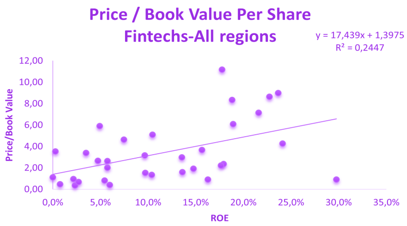
P/BV: the Price-to-Book Value (P/BV) multiple received a substantial 50% weighting, deemed suitable for valuing financial services firms, especially banks, where balance sheets strongly influence earnings. This metric is seen as more explanatory for financial firms due to the regular marking of assets and liabilities. The comparable set's median P/BV of 1.5x implies a share price of $11.24. However, NU's current trading multiple stands at 7.4x, indicating a significant 490% premium over its peers.

Premium: in evaluating Nubank's valuation metrics, it is evident that the digital bank is trading at a premium. This premium seems not to be arbitrary; it is a deliberate placement by the market. It signifies acknowledgment and valuation of Nubank's disruptive impact on the banking industry, notably its impressive growth trajectory and enhanced accessibility. We anticipate NU's P/E and trading premium to gradually narrow and align more with typical levels for an established fintech company. Therefore, applying an average P/E premium of 325% and 361% (NTM and FY24 respectively), and a P/BV premium of 490%, yields an implied share price of $10.28.

Exhibit val 8 – Value Maps

Value Maps	Latam Banks	Fintechs (all regions)	Nubank
Observations	27	33	
Price / Book Value (NTM) - Mean	1.04	3.40	5.55
ROE (NTM) - Mean	15.06%	11.47%	23.30%
R-squared	36.74%	24.47%	
ROE coefficient	6.0148	17.44	
			Current P/B
Estimated P/B	1.54	**5.46**	6.7





Valuation | Relative Valuation: Value Maps

The profitability is the major driver of the banks' market valorization; therefore a certain level of profitability should affect the Price to Book Value. The strength of the relationship between ROE and P/BV should be stronger for financial service firms, because the book value of equity is much more likely to track the market value of equity invested in existing assets. Similarly, the return on equity is less likely to be affected by accounting decisions. We ran a regression against two data sets, using expected values (NTM):

Commercial Banks - LATAM: We regressed the P/BV multiple against ROE for regional and commercial listed banks of Latin American; to determine the relative valuation of Nubank in the region's context. Our regression analysis of 27 banks yielded an R-squared of 36.74% and found NU to be significantly overvalued compared to Latam peers where its current P/BV of 6.07x is much greater than its predicted P/BV of 1.53x. (see Appendix 13)

Fintechs - All region: The regression of 33 listed fintechs yielded an R-squared of 24.5% and a predicted P/BV of **5,46x** being similar to the forward-looking NTM estimate of 5,55x. If we use the current book Value per share of $1,19, the resulting stock price is $6,5. While the relationship between price to book ratios and returns on equity is weaker for this sample than it is for commercial banks, higher price to book value ratios tend to go with higher returns on equity and we can assume that the impact of the ROE in the market value is best represented by the behavior of the fintechs rather than banks.

FINANCIAL ANALYSIS

For further details of this section, please refer to appendix 18.

Capital Adequacy

As of December 2022, Net Worth amounted to USD 4,891m. This was mainly due to share premium reserves given Its individual variation, mostly explained by shares issued on IPO over-allotment for USD 248.. In addition, accumulated gains,, weighed 43% in the whole equity variation from FY21 to FY22. These are explained by share-based compensations, which were partially offset by the net loss for the year.

We estimate that as of FY23, net worth would amount to USD 6,052m mainly as a consequence of an increase in the accumulated gains.

Table 1

Capitalization (USDk)	2021	2022	YoY (%)	YoY	2023 Est.
Total Net Worth	4.442.541	4.890.783	10,09%	448.242	6.051.595
Total Adjusted Net Worth	4.442.541	4.890.783	10,09%	448.242	6.051.595
Equity/Total Assets (%)	22,37%	16,34%	-26,97%	-6%	15,28%
Adjusted Equity/Total Assets (%)	22,37%	16,34%	-26,97%	-6%	15,28%
Equity/Total Loans (%)	371,82%	292,26%	-21,40%	-80%	191,97%

As of December 2022, Nubank's capital ratio stood at 16,34%. This decrease is not given by a reduction of equity but byN increase in total assets, mainly explained by positive variations of credit card receivables and compulsory and other deposits at central banks, financial assets at fair value through other comprehensive income and cash and cash equivalents. We expect a capital ratio of 15,28% as of FY23, given by an asset expansion higher than the increase in net worth. *More information in Table 1.*

Table 2

	2021				2022				2023 Est.			
	Up to 12 months	Over 12 months	Total	%	Up to 12 months	Over 12 months	Total	%	Up to 12 months	Over 12 months	Total	%
Deposits	$ 9.602.547	$ 64.753	$ 9.667.300	100,00%	$ 15.695.387	$ 113.154	$ 15.808.541	100,00%	$ 20.228.709	$ 154.996	$ 20.383.705	100,00%
Bank receipt of deposits (RDB)	$ 7.663.355	$ 64.753	$ 7.728.108	79,94%	$ 14.160.805	$ 113.154	$ 14.273.959	90,29%	$ 19.219.531	$ 154.996	$ 19.374.527	95,05%
Deposits in electronic money	$ 1.887.945	$ -	$ 1.887.945	19,53%	$ 1.534.582	$ -	$ 1.534.582	9,71%	$ 1.009.178	$ -	$ 1.009.178	4,95%
Bank receipt of deposits (RDB-V)	$ 31.557	$ -	$ 31.557	0,33%	$ -	$ -	$ -	0,00%	$ -	$ -	$ -	0,00%
Time deposit	$ 19.181	$ -	$ 19.181	0,20%	$ -	$ -	$ -	0,00%	$ -	$ -	$ -	0,00%
Other deposits	$ 509	$ -	$ 509	0,01%	$ -	$ -	$ -	0,00%	$ -	$ -	$ -	0,00%

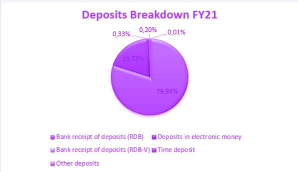
The bank's main funding source is through deposits. As of December 2022, they represented 74% of total funding sources and were as follows: 90% were bank receipt of deposits and 10% deposits in electronic money. Additionally, Equity represented 23% of funding sources. We expect deposits to remain stable as a weight of funding sources, but specifically increasing the participation of banks receipt of deposits (RBD) and decreasing deposits in electronic money. *More information in Table 3.*

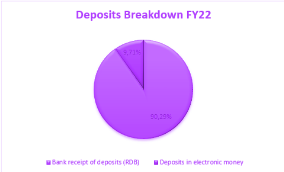
Table 3

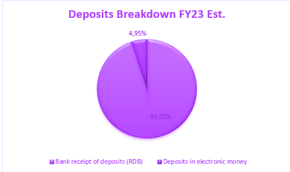
Funding sources (USDk)	2021	%	2022	(%)	YoY (%)	YoY	2023 Est.	% Est.
Deposits	**$ 9.667.300**	**67,81%**	**$ 15.808.541**	**74,27%**	**63,53%**	**$ 6.141.241**	**$ 20.383.705**	**73,39%**
Bank receipt of deposits (RDB)	$ 7.728.108	54,21%	$ 14.273.959	67,06%	84,70%	$ 6.545.851	$ 19.374.527	69,76%
Deposits in electronic money	$ 1.887.945	13,24%	$ 1.534.582	7,21%	-18,72%	-$ 353.363	$ 1.009.178	3,63%
Bank receipt of deposits (RDB-V)	$ 31.557	0,22%	$ -	0,00%	-100,00%	-$ 31.557	$ -	0,00%
Time deposit	$ 19.181	0,13%	$ -	0,00%	-100,00%	-$ 19.181	$ -	0,00%
Other deposits	$ 509	0,00%	$ -	0,00%	-100,00%	-$ 509	$ -	0,00%
Borrowings and financing	**$ 147.243**	**1,03%**	**$ 585.568**	**2,75%**	**297,69%**	**$ 438.325**	**$ 1.337.818**	**4,82%**
Term loan credit facility	$ 136.843	0,96%	$ 118.194	0,56%	-13,63%	-$ 18.649	$ 246.334	0,89%
Syndicated loan	$ -	0,00%	$ 467.374	2,20%	N/A	$ 467.374	$ 1.091.484	3,93%
Financial letter	$ 10.400	0,07%	$ -	0,00%	-100,00%	-$ 10.400	$ -	0,00%
Equity	**$ 4.442.541**	**31,16%**	**$ 4.890.783**	**22,98%**	**10,09%**	**$ 448.242**	**$ 6.051.595**	**21,79%**
Funding sources	**$ 14.257.084,00**	**100%**	**$ 21.284.892,00**	**100%**	**49,29%**	**$ 7.027.808**	**$ 27.773.118,26**	**100%**

Deposit base is highly concentrated in the short term. In terms of type of deposits, the bank showed that they mainly consisted of bank receipt of deposits (RDB), which represented 80% of total deposits in 2021 and 90% in 2022. *Info in Table 2.*

Table 4







Our estimations represent a deposits position in which bank receipts of deposits (RDB) constitute 95% of total deposits, which in turn are concentrated 99% in the short term, and deposits in electronic money amount to 5% of total deposits. *Pie Charts in Table 4.*

Asset Quality

As of December 2022, total assets increased 50.74%. This can be mainly explained by the expansion of financial assets at amortized cost, followed by higher financial assets at fair value through other comprehensive income and by an enlargement in cash and cash equivalents for USD 1,466,641k. Asset structure was composed as follows: a) 33% of securities at fair value through other comprehensive income, which in turn are broken down into 33% up to 12 months and 67% over 12 months; mainly composed of Brazilian government securities. 25% of Brazilian bonds, which are classified as level 1, are held by the subsidiaries due to regulations. It is worth mentioning that nearly 90% of all securities are based on Brazilian Reais. b) 45% in financial assets at amortized cost. 28% refer to credit card receivables, 10% to compulsory and other deposits at central banks and 6% to loans to customers. c) 14% in cash and cash equivalents, which consists mainly of voluntary deposits at central banks and bank balances.

Asset structure's composition as of FY23 is estimated as follows: a) 62% of financial assets at amortized cost, mainly composed of credit card receivables, compulsory and other deposits at central banks and loans to customers. b) 20% of securities at fair value through other comprehensive income. c) 8% of cash and cash equivalents.

Table 1

Credit card receivables

USD k	2021	%	2022	(%)	2023 (Est.)	% Est.
Current	$ 2.341.492,00	45,36%	$ 4.236.235,00	45,72%	$ 5.825.810,35	42,97%
Installments	$ 2.483.647,00	48,11%	$ 4.259.979,00	45,97%	$ 6.630.298,62	48,90%
Revolving	$ 337.014,00	6,53%	$ 770.011,00	8,31%	$ 1.102.596,69	8,13%
Total	**$ 5.162.153,00**	**100,00%**	**$ 9.266.225,00**	**100,00%**	**$ 13.558.705,67**	**100,00%**

More than 90% of credit card receivables are current or installments, which means that are due on the initial terms of each transaction. Less than 10% of credit card receivables are in a revolving situation, meaning that customers did not follow the payments according to the initial terms of the transaction. These can be converted into loans to be paid in installments. It is worth noting that after 2 months of being in a revolving situation, they are mandatorily converted into a type of installment loan to be paid through monthly credit card bills. In our estimations we forecast a quite similar breakdown of credit card receivables but putting some emphasis on installments. *More information in Table 1.*

Table 2

	2021				2022				2023 Est.			
	Less than 1 year	Between 1 and 5 years	Total	%	Less than 1 year	Between 1 and 5 years	Total	%	Less than 1 year	Between 1 and 5 years	Total	%
Loans to customers	$ 1.155.760	$ 189.051	$ 1.194.814	88,85%	$ 1.697.288	$ 198.533	$ 1.676.276	88,42%	$ 1.697.288	$ 198.533	$ 3.149.716	87,77%
Lending to individuals (Installments not overdue)	$ 1.155.760	$ 189.051	$ 1.344.811	100,00%	$ 1.697.288	$ 198.533	$ 1.895.821	100,00%	$ 1.697.288	$ 198.533	$ 3.588.443	100,00%
Loan ECL allowance	$ -	$ -	-$ 197.536	-14,69%	$ -		-$ 300.223	-15,84%	$ -		-$ 442.216	-12,32%
Installments overdue by	$ 47.539	$ -	$ 47.539	3,53%	$ 80.678	$ -	$ 80.678	4,26%	$ 3.489	$ -	$ 3.489	0,10%
less than 30 days	$ 13.423	$ -	$ 13.423	1,00%	$ 30.509	$ -	$ 30.509	1,61%	$ 1.152	$ -	$ 1.152	0,03%
30-60 days	$ 8.948	$ -	$ 8.948	0,67%	$ 18.191	$ -	$ 18.191	0,96%	$ 722	$ -	$ 722	0,02%
60-90 days	$ 5.757		$ 5.757	0,43%	$ 13.315		$ 13.315	0,70%	$ 499		$ 499	0,01%
more than 90 days	$ 19.411		$ 19.411	1,44%	$ 18.663		$ 18.663	0,98%	$ 1.116		$ 1.116	0,03%

Loans to customers amounted to USD 1,673,440k. This represents an increase of 40% YoY, but as a weight of total assets it decreased to 5,59%. Most of these loans have a maturity of less than 1 year, representing a loans to deposits for 1 year ratio of 0.10x.Total loans over total deposits ratio as of FY22 was 0.10x as well. We estimate loans to customers to increase as a proportion of assets to nearly 8%, meaning a total loans over total deposits ratio of 0.15x. *More information in table 2.*

It is worth mentioning that the ECL (Expected Credit Loss) allowance for credit cards receivables is enough to cover all the revolving situations. What is more, these cases can be converted into a loan to customers to be paid in installments. Also, it is important to take into account that only 8% of the receivables are under this condition. The ECL allowance for loans is enough to cover all the installments that have been overdue. In addition, only 4% of loans are considered as installments overdue. Our expectations about the fact that ECL allowance for loans is sufficient to cover installment overdue remains stable; in fact, we estimate a decrease of loans considered as installments overdue reaching less than 1%. It is worth mentioning, and it may be considered controversial, that we expect the mentioned decrease due to transfers from installments overdue to non-performing loans. For both credit loss allowances, it is worth noting that the coverage ratio's structure is built to have a higher coverage ratio for worse cases, and in both types of assets the distribution finds that most of these are in Stage 1, so we can understand that the exposures and loss reserves are well managed.

Considering non-performing loans as all stage 3 loans, the asset quality ratio of non-performing loans over total loans would be 0.5%. As of credit card receivables, the ratio would be 6.5%. We estimate the asset quality ratio of non-performing loans over total loans to amount to 5%, which would represent an asset quality ratio of non-performing loans over credit card receivables of 1.38%. Beyond the fact that an expansion of this ratio is considered as negative, we think that it is much more important to achieve a decrease in the ratio for credit card receivables, given that they represent a bigger part of total assets.

For additional breakdown of total loans and credit card receivables please refer to appendix 19 and 20, respectively.

Earnings Sufficiency

As of December 2022, total revenue amounted to USD 4,792,231k, representing a 182% increase YoY which can be mainly explained by an expansion on interest income and gain on financial instruments. They grew 242% to USD 3,555,213k representing 75% of total revenues. On the other hand, fees and commission income represented 25% of total revenues which is 1.000 bps lower when compared to FY21. As of FY23 we forecast a total revenue of USD 8,057,807k, which would be in turn broken down into 81% of interest income and gain on financial instruments and 19% in fees and commission income.

Table 1

	2023 Est.	%	2022	%	2021	%	2020	%
Credit card	$ 2.657.645	40,85%	$ 1.014.875	28,55%	$ 357.831	34,19%	$ 217.356	56,76%
Lending	$ 1.708.209	26,26%	$ 932.196	26,22%	$ 292.701	27,96%	$ 38.926	10,17%
Other assets at amortized cost	$ 907.130	13,94%	$ 388.736	10,93%	$ 66.202	6,32%	$ 37.833	9,88%
Other receivables	$ 404.218	6,21%	$ 161.004	4,53%	$ 17.236	1,65%	$ 149	0,04%
Financial assets at fair value	$ 828.037	12,73%	$ 1.058.402	29,77%	$ 312.776	29,88%	$ 88.658	23,15%
	$ 6.505.240	100,00%	$ 3.555.213	100,00%	$ 1.046.746	100,00%	$ 382.922	100,00%

	2023 Est.	%	2022	%	2021	%	2020	%
Interchange fees	$ 1.160.959	74,78%	$ 917.373	74,16%	$ 471.505	71,18%	$ 254.327	71,80%
Recharge fees	$ 180.016	11,59%	$ 77.469	6,26%	$ 48.378	7,30%	$ 15.287	4,32%
Rewards revenue	$ 25.588	1,65%	$ 22.438	1,81%	$ 26.857	4,05%	$ 23.524	6,64%
Late fees	$ 25.490	1,64%	$ 104.499	8,45%	$ 49.951	7,54%	$ 31.237	8,82%
Other fee and commission income	$ 160.514	10,34%	$ 115.239	9,32%	$ 65.766	9,93%	$ 29.836	8,42%
	$ 1.552.567	100,00%	$ 1.237.018	100,00%	$ 662.457	100,00%	$ 354.211	100,00%

Interest income continues to grow at a rate of nearly 3x per year. Although credit cards still grow at a good rate, their weight as a percentage of total interest income is decreasing. Lending and financial assets at fair value are becoming key participants in the interest income generation for Nubank. We believe that credit cards will continue to grow as a percentage of interest income and gain on financial assets up to 41%. *Info in Table 1.*

Fees and commission income still grows at a rate of nearly 2x per year. The weight of each kind of fee remains stable throughout the years, maintaining the interchange fees as the main fees income generator. We support the idea of the continuity of the proportions historically given in fees and commission income, but with higher recharge fees. *Info in Table 1.*

As of December 2022, gross profit amounted to USD 1,662,990k, meaning that gross margin was 35%. However, we estimate a gross profit 42% for 2023, given by a higher increase in total revenue over the increase in costs of financial and transactional services.

Concerning total operating expenses, the main players are other general and administrative expenses, which consist mainly of share-based compensation, salaries and associated benefits and infrastructure and data processing costs. Customer support and operations have been growing in absolute values but decreasing in relative terms when taken into account as a percentage of total operating expenses. It is worth mentioning that FY22 was the first year in which there was a contingent share award termination for USD 353,573k and we do not expect the same to take place in FY23.

All in all, loss before income taxes amounted to USD 308,901; despite the increase in absolute values, in relative terms of total revenue is a loss of 6.45%. This figure is much better than a negative 10% and a negative 26% of FY21 and FY20, respectively. Total income taxes amounted to USD 555,733k, mainly explained by a higher increase in current taxes than in deferred taxes. It is important to notice that current taxes have been growing at a higher pace than deferred taxes up to a point in which current taxes are higher than deferred taxes.

	2021	2022	2023 Est.
ROA	-0,83%	-1,22%	2,72%
ROE	-3,72%	-7,46%	17,81%
Operating Expenses / Assets	4,55%	6,59%	4,81%
Efficiency: Operating expenses / Total revenue	53,18%	41,15%	23,64%

Table 2

All things considered, as of December 2022, loss for the year amounted to USD 364,634k, representing a loss of 7,61%. Again, although it is a negative value, it shows an improving trend. For FY23, we expect Nubank to turn its net loss into a net profit of USD 1,077,632k, which means a net margin of 13%.

Regarding financial ratios, when compared to assets or equity, Nubank seems to have underperformed YoY. However, it is worth mentioning that the efficiency ratio for FY22 has improved when compared to FY21. Expecting a profit for FY23 automatically improves all financial ratios. *Table 2.* In table 3 theres are some other ratios which we consider are significant to consider when analyzing the whole performance:

	2021	2022	2023 Est.
Price (total market cap.)	$ 14.700.000	$ 18.146.000	$ 38.272.000
P/E	N/A	N/A	35,51
P/BV	3,31	3,71	6,32
Price/Deposits	1,52	1,15	6,23
Price/Revenues	8,66	3,79	4,75
Price/Operating Income	N/A	N/A	25,45

Table 3

Liquidity Position

Considering liquid assets as cash and cash equivalents and holding of public and private bonds with maturity up to 12 months, as of December 2022 liquid assets amounted to USD 7,320,181k from an estimation of USD 6,596,403k in FY21, which was calculated as a proportion of fair value for short term maturity. This increase was mainly due to a stronger position in cash due from banks. We estimate liquid assets to amount to USD 5,682,086k as of FY23 mainly due to a decrease in cash due from banks. *More information in Table 1.*

Table 1

Calculated as a proportion of fair value

Liquidity	2021	2022	2023 Est.
Liquid assets	$ 6.596.403	$ 7.320.181	$ 5.682.086
Cash due from banks	$ 174.142	$ 3.957.877	$ 2.863.749
Liquid assets/Total assets	33,22%	24,45%	14,35%
Total loans + fixed assets / Total Assets	6,09%	5,69%	8,06%
Total loans + fixed assets / Total Deposits	12,51%	10,78%	15,66%
Cash due from banks / Total Assets	0,88%	13,22%	7,23%
Cash due from banks / Total deposits	1,80%	25,04%	14,05%
Total Deposits/Total Liabilities	62,71%	63,12%	60,77%

	2021	2022	2023 Est.
LCR	2,61	1,91	1,09

Calculated as a proportion of fair value

Liquid Assets	2021	2022	2023 Est.
Cash and Cash Equivalents	$ 2.705.675	$ 4.172.316	$ 3.072.263
Securities	$ 3.890.728	$ 3.147.865	$ 2.609.823
	$ 6.596.403	$ 7.320.181	$ 5.682.086

Securities with maturity up to 12 months	2021	2022	2023 Est.
Profit & Loss	**$ 637.665**	**$ 3.291**	**$ 215.231**
Bonds	$ 571.753	$ 163	$ 191.828
Corporate Bonds	$ -	$ -	$ -
Bill of credit	$ 14	$ 138	$ 62
Certificate of bank deposits	$ 65.898	$ 2.990	$ 23.341
Other comprehensive Income	**$ 3.253.063**	**$ 3.144.574**	**$ 2.394.592**
Bonds	$ 2.133.258	$ 2.593.462	$ 1.790.563
Corporate Bonds	$ 124	$ 105.581	$ 43.809
Time deposits	$ 1.119.682	$ 445.531	$ 560.220

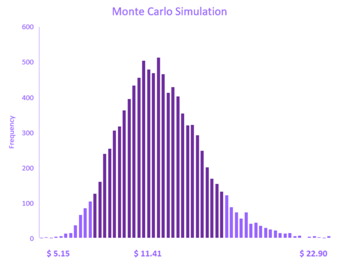
In the overall liquid position, figures show an improvement YoY. Beyond the fact that total loans to customers strengthened 40% from one year to the other, they did not grow at the same rate as total assets or total deposits. That is why when considering this component over total assets or total deposits, we can see a lower percentage. On the other hand, as liquid assets and cash due from banks values had a strong improvement, ratios over assets or total deposits show a significant growth when comparing FY21 and FY22. In our estimations, the proportion of liquid assets over total assets diminishes; however, we expect total loans over assets and over deposits to show a slight increase YoY.

Considering liquidity coverage ratio (LCR) as highly liquid assets, which are the ones that can be easily converted into cash, over expected cash outflows, which are the estimated 30-days liquidity needs, ratios would result as shown in table 1. Although the fact that a decreasing LCR is not necessarily a positive aspect, we estimate it will continue to be enough to cover liquidity needs in the very short term.

INVESTMENT RISKS

Valuation Risk

Exhibit inv risk 1 - Simulation Analysis

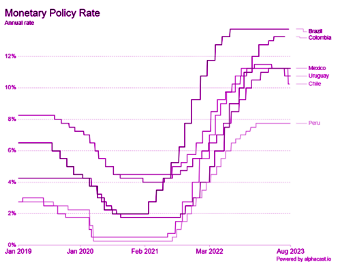


Source: Company data, team estimates

A sensitivity analysis was conducted to evaluate the influence of key value drivers on NU's share value. The findings indicated that a 100 basis points enhancement in the cost of equity resulted in a $1.46 upsurge in the share price, marking a 17% increment in the excess return valuation. Additionally, this enhancement translated to an uptick of $0.63 and $1.00 in the valuations for dividend discounts and free cash flow for equity, respectively, representing a 9% increase in each scenario.

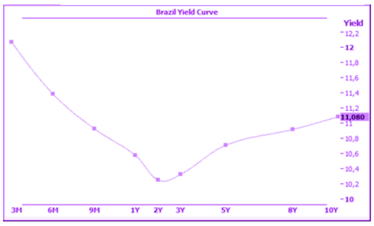
Furthermore, to incorporate probabilistic factors, a Monte Carlo simulation comprising 10,000 iterations were executed. This simulation involved adjustments in ARPAC Growth, Customer growth, Gross Profit Ratio, and the cost of equity to derive a free cash flow valuation ranging between $11.38 and $11.45, with a confidence level of 90%. Another critical observation is that the minimum expected value for the share or value at risk, considering the variations in the aforementioned variables, indicates a minimum price of $5.15 in the worst case.

Macro Risk

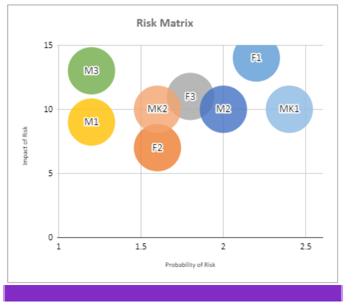


The risks associated with the countries in which the company operates are critical factors that need to be considered in any analysis. Currency and interest rate instability pose a significant risk. Fluctuations in exchange rates can have a substantial impact on the economies of the countries in which the company operates, which, in turn, can affect the value of its shares and BDRs. The company operates in Brazil, Colombia, and Mexico. Any disruption in global financial and credit markets can directly impact the financial and economic environment in these countries.

Exhibit Risk - Yield Curve



Source: Refinitiv



Yield Curve - Flatten: The decision by the Central Bank of Brazil to initiate an interest rate reduction cycle since last August has led to a disinvestment trend in the interest rate curve, resulting in a 'Flat' yield curve for Nubank. In this context, shorter-term interest rates closely align with longer-term rates. This type of yield curve minimizes the rate spread, presenting potential risks to Nubank's Net Interest Margin (NIM) and, consequently, a decrease in net interest income. The decline in loan profitability in a low spread-interest rate environment poses challenges for Nubank, as banks tend to become more discerning when granting new loans. Despite these challenges, it is crucial to note that the trend toward a flat yield curve after periods of inverted curves is typically temporary. Short-term interest rates often decrease more rapidly than long-term rates, which can lead to a steeper yield curve. In this scenario, Nubank and other banks can leverage the opportunity to secure funds at lower rates and lend at higher rates, potentially increasing profit margins.

Regulatory

Nubank faces substantial regulatory risks that can impact its stability and operations. As a digital banking platform and payment institution, the company is subject to extensive regulations, primarily overseen by the Central Bank of Brazil, the CVM, the CMN, and other Brazilian regulatory entities.
Applicable laws and regulations cover areas such as deposit-taking, money transmission, consumer protection, anti-money laundering, and other related norms. The dynamic nature of financial regulation in Brazil and internationally, coupled with changes in capital and prudential requirements, imposes additional burdens and operational restrictions.
Ongoing supervisory scrutiny by authorities like the Central Bank of Brazil can result in internal compliance costs and significant fines in case of regulatory non-compliance. Furthermore, changes in remittance restrictions and other exchange controls can adversely affect Nubank's operations.

Market risk

Navigating Geopolitical Uncertainty and Credit Crunch Implications: In the current landscape of heightened geopolitical tensions, specifically arising from armed conflicts, a surge in global uncertainty and financial market volatility is evident. This atmosphere can trigger an escalation in risk aversion, prompting investors to seek refuge in traditionally secure assets like government bonds from developed countries. This shift in capital allocation may divert investors from fintech entities, including Nubank, are often perceived as higher-risk investments compared to traditional financial institutions.

Firm Risk

Liquidity: It is crucial to acknowledge the inherent risks in Nubank's financial structure, particularly concerning liquidity and funding. The significant reliance on short-term deposits as the primary source of funds exposes the institution to considerable risks. The liquidity risk, outlined in the exposition, underscores the possibility that Nubank may encounter difficulties in meeting its financial obligations as they come due. The concentration on retail deposits, representing 95.5% of the total US$15.8 billion in deposits as of December 31, 2022, highlights vulnerability to mass withdrawals, especially given that 95.5% of these deposits are payable on demand. Insufficient diversification of funding sources, relying mainly on retail deposits, poses a significant risk. Any lack of confidence from retail depositors in the economy, in Nubank, or in the financial services industry could result in substantial deposit withdrawals in a short period.

Competitive Landscape: Latin American financial markets are witnessing increased competition. Traditional banks, neobanks, payment providers, and emerging fintech entities are formidable rivals, with competition anticipated to heighten due to technological advancements in consumer credit, investment, payments, and insurance segments. Key competitors in Brazil include Itaú Unibanco, Banco Bradesco, Banco Santander, Banco Caixa Econômica Federal, Banco do Brasil, Banco BTG Pactual, Banco Inter, XP Inc., MercadoPago, PicPay, PagSeguro Digital, and StoneCo, among others. Resource disparities, particularly with competitors affiliated with traditional banks, pose challenges. Adjusting pricing strategies may be necessary, with the reliance on low-touch customer acquisition methods potentially requiring increased marketing investments. Regulatory disparities further complicate the landscape. Some competitors may operate at lower costs due to non-identical regulatory requirements. Nubank's compliance, including authorization for payment transactions, sets it apart. Regulatory commitments, such as capital adequacy ratios, may impact cost structures, potentially affecting pricing strategies and profit margins.

Operations and reputation: Nubank encounters substantial cybersecurity risks that can impact its operations and reputation. As the company handles the collection, storage, and transmission of customers' personal data, it is exposed to threats such as unauthorized disclosures, improper access, destruction, or modification of data through cybersecurity breaches.The risks include sophisticated attacks, such as the one experienced in 2020, which compromised corporate accounts, and the constant evolution of techniques used to gain unauthorized access. The magnitude of the technological platform and the amount of data stored make Nubank an attractive target for cyberattacks, which could have a material adverse impact on its reputation, business operations, and financial results. Although security measures are implemented, none guarantees absolute protection, and cyberattacks could result in financial damages, regulatory investigations, litigation, sanctions, and loss of customer trust.

ENVIRONMENTAL, SOCIAL AND GOVERNANCE

Nubank publishes a comprehensive ESG report, which in itself is a positive point for our ESG score. Below we discuss the ESG pillars.

Environmental

Resource Use and Emissions: In alignment with its commitment to long-term carbon neutrality, Nubank underscores the significance of responsible resource use. The company conducts annual measurements of its greenhouse gas emissions, following the Brazilian Greenhouse Gas Protocol, with external verification. Despite a 42% increase in gross energy consumption in 2022, reaching 2,456.8 MWh, Nubank achieved a 12.1% reduction in direct emissions, totaling 159.7 tCO2e. These reductions were implemented through strategic initiatives such as adjustments in air conditioning operating hours and the optimization of LED lighting in offices. The company stands out for its dedication to transparency in resource use. However, indirect emissions experienced a 145.6% increase in 2022, primarily due to the inclusion of new emission sources. The 24% contribution of emissions from the cryptocurrency business, along with increases in mail deliveries and business travel, reflects changes associated with the adoption of the hybrid work model.

Innovation: Nubank demonstrates innovation not only in its financial services but also in addressing environmental challenges. The company's commitment to perpetual carbon neutrality sets it apart, exemplifying an innovative approach to tackling climate change. Furthermore, Nubank demonstrates a willingness to adapt and improve, as evidenced by the standardization process initiated in 2022 to enhance the granularity and accuracy of data. This innovative mindset positions Nubank as a visionary entity in the financial sector, prioritizing sustainability and environmental responsibility.

Social

Workforce and Diversity: Women now constitute 45.4% of the total workforce, experiencing a 3.7% increase in the last two years. Additionally, the representation of Black individuals has seen remarkable growth, rising from 18.3% in 2020 to the current 37%. In May 2022, Nubank launched a program called "Instituto Nu," aimed at social impact for Black women in favelas across seven priority states in Brazil. Through this initiative, Nubank has positively impacted over 8,000 individuals, emphasizing community development and inclusion. Furthermore, Nubank supports projects with internal resources and tax-incentivized funds, investing significantly in startups and initiatives focused on diversity, entrepreneurship, sustainability, and financial education. The strategic allocation of resources has resulted in a direct impact on over 190,000 individuals, especially in peripheral regions of the country.

Community: The company actively promotes donation campaigns for emergency situations, aligning its social responsibility with community needs. Noteworthy social programs, including "Esporte Educacional na Amazônia," "Sustenidos Musical," and "Taça das Favelas," exemplify Nubank's holistic approach to community development, fostering education and inclusion through sports and music.

Human Rights: Nubank's commitment to human rights is evident in its ongoing initiatives and policies with clear goals set for achieving gender and racial representation within its workforce by 2025. The establishment of a talent pool for marginalized groups underscores proactive approach to creating an equitable workplace. This commitment aligns with global human rights standards, emphasizing the importance of fair and inclusive employment practices.

Product Responsibility: As part of its IPO, Nubank has demonstrated a long-term commitment to social impact by establishing a R$18.4 million social impact fund. This fund is dedicated to initiatives aligned with financial education, technology, innovation, and leadership development in Latin America.

Governance

Management: The board comprises nine members who convene at least once a month and as needed for specific requirements. As of the latest available information, the board consists of nine members, with an impressive 88% being independent. This independence contributes to the development of an isolated strategy and forecast, both for the industry and the company. The board holds the authority to approve the annual budget and investment policies. Members are appointed for a one-year term with the possibility of being re-elected.

Main Shareholders: Regarding shareholders, the notable position of David Vélez Osorno as the majority owner with 88.6% of Class B shares, granting him 76.1% voting power, classifies Nubank as a "controlled company," allowing exemptions in certain governance standards. This exception is fundamental to Nubank's governance structure and may impact the protections offered to shareholders.

Dividends Policy: Although the company starts in the Nasdaq market in 2021, the historical information proves that they did not distribute dividends up to build a strong company accomplishing desirable values and expectations.

As part of Corporate Guidance, the Board defines a self-assessment evaluation in order to define their positions, scope, targets and results. In relation to compensation, they agreed not to retain profits in the last three fiscal years. Moreover, the Board will decide the frequency of dividends distribution and allocation must be aligned with shares proportion. Nevertheless, one of the principles confirmed that each member will be compensated in line with their tasks, responsibilities and time demands and not be aligned by short- term results.

ESG Controversies

Nubank faced controversy following comments from its co-founder, Cristina Junqueira, which sparked criticism on social media regarding discrimination. In response, Nubank launched the "Nubank Failed" initiative, committing to strengthen the presence of Black individuals in its leadership and establish racial inclusion goals. Junqueira's statements, implying the impossibility of "lowering standards" for inclusion, generated dissatisfaction among customers, some of whom announced the cancellation of their services.

ESG INTEGRATION INTO VALUATION

We will employ the SPICE rating system for ESG scoring, as recommended by the Principles of Responsible Investment (PRI) organization. To incorporate ESG considerations into the report, we have adhered to the Principles for Responsible Investment's guide on "A practical guide to ESG integration for equity investment," opting for the Beta approach. This approach is foundational, modifying the Beta used in valuation to account for ESG issues.The objective is to integrate opportunities and risks into the model, thoroughly assessing the value the company generates for all stakeholders, including suppliers, society, states, individuals, investors, clients, and the environment. This method is robust, offering a holistic perspective on the company's situation, grounded in fundamental principles, and aligns well with the scope of this report.

We assigned a B rating on Nubank, which indicates good ESG performance and moderate degree of transparency in reporting ESG data publicly. As a good result after our analysis, we decided to keep the Beta of our valuation without penalties (please refer to appendix 16).

ESG Laggards

SCORE RANGE	GRADE	DESCRIPTION
0.0<=score<=0.08333 0.08333<=score<=1.66666 1.66666<=score<=0.25000	D- D D+	"D" Score indicates por relative ESG performance and insufficient degree of transparency in reporting material ESG data publicly
0.25000<=score<=0.33333 0.33333<=score<=0.41666 0.41666<=score<=0.50000	C- C C+	"C" score indicates satisfactory relative ESG performance and moderate degree of transparency in reporting material ESG data publicly
0.50000<=score<=0.58333 0.58333<=score<=0.66666 0.66666<=score<=0.75000	B- B B+	"B" score indicates good relative ESG performance and above average degree of transparency in reporting material ESG data publicly
0.75000<=score<=0.83333 0.83000<=score<=0.91666 0.91666<=score<=1	A- A A+	"A" score indicates excellent relative ESG performance and high degree of transparency in reporting material ESG data publicly

ESG Leaders

SPICE RATING	BETA ADJUSTMENT
A+	-20%
A	-10%
B	0
C	10%
C-	20%

APPENDIX NETWORK

HISTORICAL PERFORMANCE AND FORECAST

APPENDIX 1: Income Statement

Income Statements - Actuals & Forecast

Income Statement (in US$ millions)	FY18A	FY19A	FY20A	FY21A	Q4 22A	FY22A	Q1 23A	Q2 23A	Q3 23A	LTM 23A	NTM 24E	YEARS AS THE NEXT 4Q						
										Q4 22-Q3 23 A	Q4 23-Q3 24 E	Q4 24-Q3 25 E	Q4 25-Q3 26 E	Q4 26-Q3 27 E	Q4 27-Q3 28 E	Q4 28-Q3 29 E	Q4 29-Q3 30 E	Q4 30-Q3 31 E
Interest income and on financial instruments	162	338	383	1,047	1,096	3,555	1,255	1,500	1,733	5,584	7,863	11,137	15,234	18,845	22,388	26,597	31,598	37,538
Fee and commission income	157	274	354	651	355	1,237	363	368	404	1,491	2,099	2,973	4,067	5,031	5,977	7,101	8,436	10,021
Total Revenue	**319**	**612**	**737**	**1,698**	**1,451**	**4,792**	**1,619**	**1,869**	**2,137**	**7,075**	**9,962**	**14,110**	**19,301**	**23,876**	**28,365**	**33,698**	**40,033**	**47,559**
Total cost of financial and transac. services	**(207)**	**(364)**	**(410)**	**(965)**	**(872)**	**(3,129)**	**(968)**	**(1,087)**	**(1,222)**	**(4,149)**	**(5,737)**	**(7,980)**	**(10,717)**	**(13,258)**	**(15,750)**	**(18,712)**	**(22,229)**	**(26,408)**
Gross profit	**112**	**248**	**327**	**733**	**578**	**1,663**	**651**	**782**	**915**	**2,926**	**4,225**	**6,130**	**8,583**	**10,619**	**12,615**	**14,986**	**17,804**	**21,151**
Customer support and operations	(47)	(116)	(124)	(191)	(106)	(335)	(108)	(113)	(127)	(454)	(571)	(729)	(906)	(1,038)	(1,142)	(1,256)	(1,382)	(1,520)
General and administrative expenses	(85)	(200)	(266)	(629)	(241)	(978)	(237)	(256)	(264)	(999)	(1,256)	(1,602)	(1,993)	(2,283)	(2,511)	(2,762)	(3,038)	(3,342)
Marketing expenses	(6)	(42)	(19)	(80)	(51)	(153)	(19)	(34)	(46)	(151)	(190)	(242)	(301)	(344)	(379)	(417)	(459)	(504)
Other income (expenses)	(7)	(20)	(10)	(4)	(46)	(150)	(43)	(54)	(65)	(209)	(263)	(336)	(417)	(478)	(526)	(578)	(636)	(700)
Total operating expenses	**(145)**	**(377)**	**(419)**	**(903)**	**(445)**	**(1,616)**	**(407)**	**(458)**	**(503)**	**(1,813)**	**(2,279)**	**(2,909)**	**(3,617)**	**(4,143)**	**(4,557)**	**(5,013)**	**(5,514)**	**(6,066)**
Profit (loss) before income taxes	(33)	(129)	(92)	(170)	134	47	244	324	412	1,113	1,945	3,221	4,967	6,475	8,057	9,973	12,289	15,085
Non-Operating Income/Expense - Total	0	0	(101)	0	(356)	(356)	0	0	0	0	0	0	0	0	0	0	0	0
Income/Loss before income taxes	(33)	(129)	(193)	(170)	(222)	(309)	244	324	412	1,113	1,945	3,221	4,967	6,475	8,057	9,973	12,289	15,085
Total income taxes	5	37	22	5	(76)	(56)	(102)	(99)	(109)	(385)	(681)	(1,128)	(1,738)	(2,266)	(2,820)	(3,491)	(4,301)	(5,280)
Reported Net Income	**(29)**	**(93)**	**(171)**	**(165)**	**(298)**	**(365)**	**142**	**225**	**303**	**728**	**1,264**	**2,094**	**3,228**	**4,209**	**5,237**	**6,483**	**7,988**	**9,805**
(+) Extraordinary items	0	0	101	0	356	356	0	0	0	0	0	0	0	0	0	0	0	0
(+) Share-based compensation	0	0	56	225	94	283	58	59	52	263	108	142	199	219	241	266	292	321
(-) Allocated Tax Effects on Share-Based comp.	0	0	(13)	(60)	(24)	(73)	(15)	(15)	(14)	(68)	(27)	(36)	(50)	(55)	(60)	(66)	(73)	(80)
Recurring Net Income	**(29)**	**(93)**	**(27)**	**0**	**128**	**200**	**185**	**269**	**342**	**922**	**1,345**	**2,201**	**3,378**	**4,374**	**5,418**	**6,682**	**8,207**	**10,046**
Revenue Growth Forecasted (CAGR)											*40.81%*	*41.23%*	*39.73%*	*35.54%*	*32.01%*	*29.71%*	*28.09%*	*26.89%*

Source: Company data, team estimates

APPENDIX 2: Capital

Capital - Actuals & Forecast

Capital (in US$ millions)	FY18A	FY19A	FY20A	FY21A	FY22A	Q3 23A	Q3 24E	Q3 25E	Q3 26E	Q3 27E	Q3 28E	Q3 29E	Q3 30E	Q3 31E
Total: shareholders'Equity	**297**	**612**	**438**	**4,443**	**4,891**	**5,889**	**7,191**	**9,488**	**13,298**	**14,628**	**16,091**	**17,700**	**19,470**	**21,417**
Less: preferred stock	0	0	328	0	0	0	0	0	0	0	0	0	0	0
Less: minority interests	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Less: Goodwill & Intangibles	1	1	13	474	580	675	0	0	0	0	0	0	0	0
Less: Other adjustments	277	585	(5)	3,500	3,542	3,449	0	0	0	0	0	0	0	0
Tangible Common Equity	**20**	**26**	**101**	**467**	**770**	**1,765**	**3,684**	**4,996**	**7,314**	**8,045**	**8,850**	**9,735**	**10,709**	**11,779**
Common Equity / Shareholders Equity	**6.6%**	**4.3%**	**23.1%**	**10.5%**	**15.7%**	**30.0%**	**49.3%**	**53.3%**	**55.0%**	**55.0%**	**55.0%**	**55.0%**	**55.0%**	**55.0%**
Regulatory Capital														
Tier 1	20	26	101	467	906	1,910	3,684	4,996	7,314	8,045	8,850	9,735	10,709	11,779
Common Equity	20	26	101	467	770	1,765	3,684	4,996	7,314	8,045	8,850	9,735	10,709	11,779
Additional	0	0	0	0	136	145	0	0	0	0	0	0	0	0
Tier II	0	20	17	18	186	220	614	576	1,219	1,341	1,475	1,623	1,785	1,963
TOTAL Regulatory Capital	**20**	**46**	**119**	**485**	**1,092**	**2,130**	**4,298**	**5,573**	**8,533**	**9,386**	**10,325**	**11,358**	**12,493**	**13,743**
Risk Weighted Assets														
Credit Risk (RWA CPAD)	0	112	373	1,891	3,959	11,847	21,218	27,583	33,100	36,410	40,050	44,056	48,461	53,307
Market Risk (RWA MPAD)	0	0	0	15	70	123	290	377	452	498	547	602	662	729
Operational Risk (RWA OPAD)	23	17	15	238	1,077	6,141	4,540	5,901	7,082	7,790	8,569	9,426	10,368	11,405
Payment services risk (RWA SP)	0	0	0	0	0	1,183	0	0	0	0	0	0	0	0
TOTAL Risk Weighted Assets	**23**	**129**	**388**	**2,144**	**5,106**	**19,294**	**26,047**	**33,861**	**40,634**	**44,697**	**49,167**	**54,083**	**59,492**	**65,441**
Capital Required	**2**	**14**	**41**	**225**	**536**	**1,302**	**2,149**	**3,407**	**4,267**	**4,693**	**5,163**	**5,679**	**6,247**	**6,871**
Margin	17	33	78	260	556	828	2,149	2,165	4,267	4,693	5,163	5,679	6,247	6,871
Cap req / RWA	10.5%	10.5%	10.5%	10.5%	10.5%	6.8%	8.3%	10.1%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%
Basel Ratio	**85.8%**	**35.9%**	**30.5%**	**22.6%**	**21.4%**	**11.0%**	**16.5%**	**16.5%**	**21.0%**	**21.0%**	**21.0%**	**21.0%**	**21.0%**	**21.0%**
Excess / (Deficit) Capital	17	33	78	260	556	828	2,149	2,165	4,267	4,693	5,163	5,679	6,247	6,871
CET1 Ratio	**85.8%**	**20.5%**	**26.1%**	**21.8%**	**15.1%**	**9.1%**	**14.1%**	**14.8%**	**18.0%**	**18.0%**	**18.0%**	**18.0%**	**18.0%**	**18.0%**
Tier 1 Ratio	**85.8%**	**20.5%**	**26.1%**	**21.8%**	**17.7%**	**9.9%**	**14.1%**	**14.8%**	**18.0%**	**18.0%**	**18.0%**	**18.0%**	**18.0%**	**18.0%**
Tier 2 Ratio	**0.0%**	**15.5%**	**4.5%**	**0.9%**	**3.6%**	**1.1%**	**2.4%**	**1.7%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**
Total capital Ratio	85.8%	35.9%	30.5%	22.6%	21.4%	11.0%	16.5%	16.5%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%

Source: Company data, team estimates

APPENDIX 3: Regulatory Capital Explanation

Under the Basel III framework, regulatory capital is concentrated on high-quality capital, primarily in the form of shares and retained earnings, designed to effectively absorb potential losses. Notably, Basel III introduces specific classification criteria for the components of regulatory capital. This framework also incorporates a delineated structure for going-concern and gone-concern scenarios, explicitly defining the roles of Tier 1 capital in the context of a going concern and Tier 2 capital for gone concern situations. **1)'Going-concern'** capital primarily comprises paid-up ordinary shares, retained earnings, and certain reserves. **2) 'Gone-concern' capital**, or Tier 2 capital, is primarily composed of long-dated subordinated debt. In contrast to going-concern capital, the value of gone-concern capital typically only comes into play when a bank is on the verge of insolvency and is undergoing resolution.

Tier 1 (going concern)	Common Equity Tier 1 (CET1)	Sum of common shares (equivalent for non-joint stock companies*) and stock surplus, retained earnings, other comprehensive income, qualifying minority interest and regulatory adjustments	CET1 >4.5%
	Additional Tier 1 (AT1)	Sum of capital instruments meeting the criteria for AT1 and related surplus, additional qualifying minority interest and regulatory adjustments	CET1 + AT1 >6%
Tier 2 (gone concern)		Sum of capital instruments meeting the criteria for Tier 2 and related surplus, additional qualifying minority interest, qualifying loan loss provisions and regulatory adjustments	CET1 + AT1 + Tier 2 >8%

* The standard requires instruments issued by non-joint stock companies to meet a set of criteria to be deemed equivalent to common shares and included in CET1.

APPENDIX 4: Regulatory capital requirement for Brazilian financial services firms

According to National Monetary Council of Brazil (CMN), in the resolution Nos. 4,955/21 and 4,958/21, the Total Capital, used to monitor the compliance with the operational limits imposed by the Central Bank of Brazil, is the sum of three items:

- Common Equity Tier 1: sum of social capital, reserves and retained earnings, less deductions and prudential adjustments.
- Additional Tier 1 Capital: consists of instruments of a perpetual nature that meet certain eligibility requirements. Together with Common Equity Tier I it makes up Tier I Capital.
- Tier 2 Capital: consists of subordinated debt instruments with defined maturity dates that meet certain eligibility requirements. Together with Common Equity Tier I and Additional Tier I Capital, it makes up Total Capital.

APPENDIX 5: Valuation Assumptions

1. Income Statements	
Line Item	**Assumptions**
Interest Income, Fee and Comission Income	The anticipated revenue surge within the initial three years of projection is attributed to the envisaged expansion into the burgeoning markets of Mexico and Colombia. This projection is rooted in the substantial growth potential identified within these markets, characterized by robust expected growth surpassing that of the Brazilian market. Additionally, higher population growth projections in Mexico further underpin this assumption. Leveraging NU's accumulated expertise in Brazil, the company is poised to replicate and extend its business footprint into these Latin American markets. This revenue surge will notably affect the increase in Average Revenue Per Active Customer (ARPAC), starting at a 12% Next Twelve Months (NTM) growth rate from the Last Twelve Months (LTM), which will taper down to 10% by the end of the third year. Subsequently, a sustained growth trajectory of 8% is projected, aligning with current trends. Complementing this projection is the rise in active customers, forecasted to experience an average growth rate of 25% over the initial three years, tapering to a 10% annual increase for the remainder of the projection period.
Gross Profit	The projected growth of the gross profit ratio as a percentage of revenue anticipates a 1-percentage-point increase during the initial three years of expansion, stabilizing thereafter at 44% for the remainder of the projected period. This early-stage growth is underpinned by NU's deeper understanding of new markets, their inherent opportunities, and consumer preferences toward its product offerings. A pivotal factor contributing to this aspect is the net interest income, a critical determinant impacting interest income (comprising at least 80% of the total revenue) and interest expenses, constituting no less than 50% of the total financial and transactional costs. This reliance underscores the significance of net interest income as a fundamental element influencing the gross profit ratio's evolution over the projected timeline.
Operating Expenses	Considering the consistent trend of the cost to serve per customer in recent periods, averaging between $0.8 to $0.9 dollars, the projection indicates a stability in this metric over the projected period. Despite an anticipated rise in operating expenses attributable to expansion efforts and market entry, justified by increased infrastructure, technology needs, and augmented marketing expenses, the cost to serve per customer is expected to maintain its stability throughout the projected period.
Corporate Tax Rate	The corporate tax rate of 35% is determined based on insights gleaned from consulted expert sources outlining tax regulations in Brazil, Mexico, and Colombia (Damodaram A., 2023). This rate aligns with the assessed tax protections across these respective jurisdictions.
Share-based compensation	As per NU's public disclosures, a share-settle awards program offers incentives to employees, allowing them to purchase common shares by exercising their options. This program necessitates an adjustment to reported net income to account for the expenses associated with these incentives, which are offset by the exercise of these options. Although the Q3 2023 results indicated that share-based compensation accounted for 4.5% of the total shareholders' equity, a conservative estimate of 1.5% of the total shareholders' equity is projected for the upcoming period. Additionally, for tax purposes, a deduction of 25% from this compensation is accounted for. The recurring net income is derived by combining the reported net income with the share-based compensation (net of taxes), reflecting the adjusted impact of these incentives on the company's financial performance.
Dividends	The outlined scenario is specifically relevant to the dividend discount valuation method. Within this approach, a model with two growth phases is envisaged: an initial phase of rapid growth followed by a subsequent stable phase. During this latter stable growth phase, the projection anticipates NU initiating dividend payments with a payout ratio gradually converging to 50% by the final year of this stable phase in the projection. For further elaboration and comprehensive insights, please refer to the section dedicated to dividend discount valuation.

2. Capital Assumptions	
Line Item	**Assumptions**
Risk Weighted Assets	The Risk-Weighted Assets (RWA) structure encompasses credit-risk weighted (CPAD) assets, market risk (MPAD), operational risk (OPAD), and payment services risk (SP). Notably, RWA assets have exhibited substantial growth in the recent quarter, escalating from $8,005 million dollars in Q2 2023 to $19,294 million dollars in Q3 2023. This significant surge is attributed to NU's business expansion into new markets, leading to the inclusion of a greater volume of risk assets within its portfolio. Within the context of this expansion, a substantial uptick in RWA is anticipated, with annual growth rates projected at 35% and 30% over the next two years, eventually stabilizing to an annual growth rate of 20% starting from the third year. This trajectory underscores the expected sustained expansion of NU's risk asset base in the coming years.
CET1 Capital	The Common Equity Tier 1 (CET1) capital comprises paid-in capital, reserves, and retained earnings, accounting for deductions and prudential adjustments. Notably, the Q3 2023 information highlighted a significant development: a targeted minimum capital adequacy ratio, starting at 6.5% effective from July 2023, escalating to 8.75% throughout the fiscal year 2024, and ultimately returning to the 10.5% ratio mandated by the monetary authorities of Brazil and Mexico by the year 2025. Based on this trajectory, the CET1 is anticipated to increase over the next two years, progressing from its current percentage of 9.1% as of Q3 2023 to attain the 18% benchmark typically maintained until Q2 of the same year 2023. This progression signals an intentional bolstering of the CET1 capital to meet targeted regulatory thresholds and align with the stipulated capital adequacy requirements over the specified timeline.
Tier 2 Capital	NU's Tier 2 capital comprises subordinated debt instruments possessing set maturity dates that fulfill eligibility requirements. Aligned with the earlier discussion regarding CET1, the Tier 2 capital ratio is forecasted to ascend from 1.1% as of Q3 2023 to NU's historical ratio of 3% over Risk-Weighted Assets (RWA) by the third year of the projection. Subsequently, it is anticipated to stabilize at this established ratio, indicating a sustained level of Tier 2 capital adequacy aligning with NU's historical benchmarks.

APPENDIX 6: Terminal Growth Rate and horizon

In order to determine the terminal value of dividends, excess return, and free cash flow in our Dividend Discount Model, Excess Return model, and Free Cash Flow to Equity Model respectively, a Terminal Growth Rate (TGR) was essential. Our estimation of the TGR stands at 3.85%, derived from a triangulation of four key growth metrics: **1) Long-term GDP growth rates**: We weighted the OECD's long-term GDP growth forecasts for Brazil, México, and Colombia based on their projected contribution to NU's average revenue, creating a geographically diversified growth estimate. This component holds a weight of 20%, acknowledging an elevated level of uncertainty in the broader global economic outlook. **2) Long-run average inflation rate**: Refinitiv's long-term inflation forecast of 3.6% is accorded a weight of 30%. **3) Country population growth forecast**: The forecasted population growth, weighted at 0.88%, is given a 20% weighting. This accounts for the premise that bank profitability cannot surpass the long-term population growth rate. **4) Long-term Banking and Fintech Sector growth**: Refinitiv's projections anticipate a 2.50% growth in the banking industry and an 11.50% growth in the fintech sector in the upcoming years. Each sector holds a weight of 15%, considering NU's robust standing as a competitor in both the banking and fintech sectors.

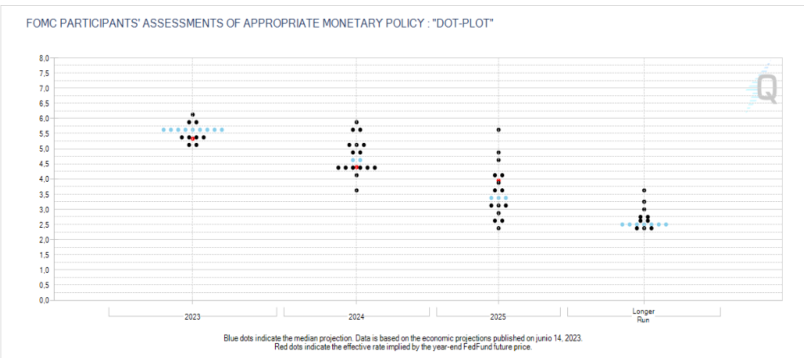
Terminal Growth Rate Calculation				
Region	**LT GDP Growth**	**LT Average Inflation**	**LT Average Population Growth**	**Revenue Contribution**
Brasil	2.30%	3.60%	0.60%	78.8%
México	3.08%	3.50%	2.40%	15.5%
Colombia	2.72%	3.90%	0.53%	5.7%
TOTAL	**2.45%**	**3.60%**	**0.88%**	**100.00%**
Total TGR Proxy			**Weightings**	
Weighted Average GDP Growth Rate		2.45%	20.00%	Source: OECD
Long Run Average Inflation		3.60%	30.00%	Source: Refinitiv
Average Population Growth Forecast		0.88%	20.00%	Source: Univ. Of Denver
Long -Term Banking Sector Growth		2.50%	15.00%	Source: Refinitiv
Long -Term Fintech Sector Growth		11.50%	15.00%	Source: Refinitiv
Weighted TGR		**3.85%**	**100.00%**	

Revenue by Geography (mill USD)	2020	2021	2022	Q1-Q3 2023
Brazil	609.23	1285.85	3121.13	3932.23
Mexico	1.41	29.55	201.20	260.66
Colombia	0.00	0.81	20.37	51.65
Other	0.00	2.85	2.40	0.93
TOTAL	610.64	1319.05	3345.09	4245.47

Revenue by Geography (%)	2020	2021	2022	Q1-Q3 2023	2023	2024
Brazil	99.8%	97.5%	93.3%	92.6%	89.3%	87.8%
Mexico	0.2%	2.2%	6.0%	6.1%	8.5%	9.5%
Colombia	0.0%	0.1%	0.6%	1.2%	2.2%	2.7%
Other	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%

Revenue by Geography (%)	2025	2026	2027	2028	2029	2030
Brazil	86.3%	84.8%	83.3%	81.8%	80.3%	78.8%
Mexico	10.5%	11.5%	12.5%	13.5%	14.5%	15.5%
Colombia	3.2%	3.7%	4.2%	4.7%	5.2%	5.7%
Other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

APPENDIX 7: Expectations regarding the evolution of the risk-free rate



Source: CME group

APPENDIX 8: Valuation - Cost of Equity

Cost of Equity

Forecast Horizon Cost of Equity		
Risk Free Rate	**Proxy**	**Weight**
US 10-Year Treasury (27/08/2023)	4.85%	5%
US 10-Year Treasury (5 Year Avg)	2.23%	10%
US 10-Year Treasury (10 Year Avg)	2.29%	35%
US 10-Year Treasury (20 Year Avg)	2.91%	50%
Weighted Average	**2.72%**	**100%**
Adjusted Beta	**Proxy**	**Weight**
Comparable Beta Fintechs	1.16	60%
Comparable Beta Banks	0.66	20%
NU CAPM Regression (2Y Monthly)	1.06	20%
Weighted Average	**1.04**	**100%**
Equity Market Risk Premium (EMRP)	**Proxy**	**Weight**
Survey (Fernandez et al., 2023)	9.30%	50%
Equity Risk Premium (Jul-23, Damodaran)	9.57%	50%
Weighted Average	**9.44%**	**50%**
Capital Asset Pricing Model	**Proxy**	
Risk-Free Rate	2.72%	
Beta	1.04	
EMRP	9.44%	
CAPM Cost of Equity	**12.53%**	

Terminal Horizon Cost of Equity		
Risk Free Rate	**Proxy**	**Weight**
US 10-Year Treasury (27/08/2023)	4.85%	0%
US 10-Year Treasury (5 Year Avg)	2.23%	0%
US 10-Year Treasury (10 Year Avg)	2.29%	0%
US 10-Year Treasury (20 Year Avg)	2.91%	100%
Weighted Average	**2.91%**	**100%**
Adjusted Beta	**Proxy**	**Weight**
Comparable Beta Fintechs	1.16	80%
Comparable Beta Banks	0.66	20%
NU CAPM Regression (2Y Monthly)	1.06	0%
Weighted Average	**1.06**	**100%**
Equity Market Risk Premium (EMRP)	**Proxy**	**Weight**
Survey (Fernandez et al., 2023)	9.30%	0%
Equity Risk Premium (Jul-23, Damodaran)	9.57%	100%
Weighted Average	**9.57%**	**100%**
Capital Asset Pricing Model	**Proxy**	
Risk-Free Rate	2.91%	
Beta	1.06	
EMRP	9.57%	
CAPM Cost of Equity	**13.05%**	

APPENDIX 9: Valuation - Excess Return Model

Two-stage valuation model - Excess Return Model

In US$ millions

1st stage (excess return 6 years - years as the next 4Q)	2024	2025	2026	2027	2028	2029
Net Income	**2,157**	**2,804**	**3,646**	**4,739**	**6,161**	**8,009**
- Equity Cost (see below)	(901)	(1,171)	(1,522)	(1,979)	(2,572)	(3,344)
Excess Equity Return	**1,256**	**1,633**	**2,123**	**2,760**	**3,589**	**4,665**
Cumulated Cost of Equity - since Nov-17-2023	1.11	1.25	1.40	1.58	1.78	2.00
Present Value	**1,134**	**1,310**	**1,514**	**1,749**	**2,020**	**2,334**
Estimating Equity Cost Each year						
Beginning BV of Equity	7,191	9,348	12,152	15,798	20,537	26,698
Cost of Equity	12.53%	12.53%	12.53%	12.53%	12.53%	12.53%
Equity Cost	**901**	**1,171**	**1,522**	**1,979**	**2,572**	**3,344**
Estimating Book Value of Equity						
Return on Equity	30%	30%	30%	30%	30%	30%
Net Income	2,157	2,804	3,646	4,739	6,161	8,009
Dividend Payout Ratio	-	-	-	-	-	-
Dividends paid	-	-	-	-	-	-
Retained Earnings	2,157	2,804	3,646	4,739	6,161	8,009

2nd stage (terminal growth - perpetuity)	
Cost of equity in stable growth period	13.05%
Net income growth	3.85%
Return on equity	20%
Net income in perpetuity	**6,398**
Book Value of equity at the beginning of the year 6	31,990
Terminal value of excess returns	**24,508**

PV of equity/excess return each stage	
PV of Book Value of Equity Q3 2023	5,981
PV of Equity Excess Return (next 6 years)	10,061
PV of Terminal Excess Return	24,508
Sum of PV Excess Return	40,550
Shares Outstanding (in thousands)	4,752
Implied Share Price	**8.53**

APPENDIX 10: Valuation - Dividend Discount Model

Three-stage valuation model - Dividend Discount Model

In US$ millions

1st stage (high-growth phase 6 years - years as the next 4Q)	2024	2025	2026	2027	2028	2029
Expected Growth Rate	30%	30%	30%	30%	30%	30%
Earnings per share	**0.46**	**0.60**	**0.78**	**1.02**	**1.32**	**1.72**
Payout ratio	0%	0%	0%	0%	0%	0%
Dividends per share	**0**	**0**	**0**	**0**	**0**	**0**
Cost of Equity	12.33%	12.53%	12.53%	12.53%	12.53%	12.53%
Cumulated Cost of Equity - since Nov-17-2023	1.12	1.26	1.42	1.60	1.80	2.03
Present Value	**0**	**0**	**0**	**0**	**0**	**0**

2nd stage (stable-growth phase years 6 to 12 - years as the next 4Q)						
Estimating Book Value of Equity	2030	2031	2032	2033	2034	2035
Expected Growth Rate	30%	21%	14%	9%	6%	5%
Earnings per share	**2.24**	**2.70**	**3.08**	**3.35**	**3.55**	**3.72**
Payout ratio	15%	25%	35%	40%	45%	50%
Dividends per share	**0.34**	**0.68**	**1.08**	**1.34**	**1.60**	**1.86**
Cost of Equity	12.53%	12.53%	12.53%	12.53%	12.53%	12.53%
Cumulated Cost of Equity - since Nov-17-2023	2.25	2.53	2.85	3.20	3.61	4.06
Present Value	**0.15**	**0.27**	**0.38**	**0.42**	**0.44**	**0.46**

3rd stage (terminal growth - perpetuity)	
Earnings per share 12th	3.72
Stable growth - terminal	3.85%
Payout ratio 13th	50%
Cost of equity 13th	13.05%
Terminal price per share	20.99
Cumulative Cost of Equity 13	405.8%
PV of terminal price per share	**5.17**

PV of dividends each stage	
PV of dividends - High-Growth Phase	0.00
PV of dividends - Stable-Growth Phase	2.11
PV of Terminal Price per Share	5.17
Sum of PV Dividends/Price per share	7.29
Implied Share Price	**7.29**

APPENDIX 11: Valuation - Free Cash Flow To Equity Model

Two-stage valuation model - Free Cash Flow To Equity

In US$ millions

1st stage (8 years forecast - years as the next 4Q)	LTM Q3 2023	NTM Q3 2024	Q3 2025	Q3 2026	Q3 2027	Q3 2028	Q3 2029	Q3 2030	Q3 2031
Risk Weighted Assets (RWA)	19,294	26,047	33,861	40,634	44,697	49,167	54,083	59,492	65,441
Total Capital Ratio	11.04%	16.50%	16.46%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%
Regulatory Capital	2,130	4,298	5,573	8,533	9,386	10,325	11,358	12,493	13,743
Change in Regulatory Capital	**-**	**2,168**	**1,275**	**2,960**	**853**	**939**	**1,033**	**1,136**	**1,249**
Shareholder's Equity		7,191	9,488	13,298	14,628	16,091	17,700	19,470	21,417
ROE		18.71%	23.19%	25.40%	29.90%	33.67%	37.75%	42.15%	46.91%
Net Income		**1,345**	**2,201**	**3,378**	**4,374**	**5,418**	**6,682**	**8,207**	**10,046**
FCFE		**(823)**	**926**	**418**	**3,520**	**4,480**	**5,649**	**7,071**	**8,797**
Cumulative Cost of Equity		0.11	0.25	0.40	0.58	0.78	1.00	1.25	1.53
PV FCFE		**(742)**	**743**	**298**	**2,230**	**2,522**	**2,826**	**3,144**	**3,476**

2nd stage (terminal growth - perpetuity)	
Change in Regulatory Capital	1,297
Net Income	10,433
FCFE in perpetuity	9,135
PV Terminal Value of FCFE	**39,197**

APPENDIX 12: Valuation - Market Multiples

Relative valuation - Market Multiples

Company	P/E (LTM)	PEG Ratio	P/E (NTM)	P/E (FY24)	P/BV (T)	P/TBV (T)	ROE (LTM)	ROTE (LTM)	ROE (FY24)
Target									
NUBANK	41.6x	0.9x	36.9x	36.5x	6.5x	7.4x	15.7%	17.7%	20.1%
Brazilian Majors (Banking Services)									
BANCO DO BRASIL	3.6x	(0.6x)	3.7x	4.1x	0.9x	0.9x	24.1%	25.7%	21.1%
BANCO SANTANDER BRASIL SA	22.2x	0.5x	12.5x	10.2x	2.1x	2.9x	9.4%	13.1%	12.3%
ITAU UNIBANCO HOLDING SA	9.7x	1.4x	8.4x	7.8x	1.6x	1.8x	16.4%	18.7%	20.6%
BANCO BRADESCO SA	11.3x	0.8x	8.8x	8.3x	1.0x	1.2x	9.2%	10.3%	12.0%
Comparable Fintech (Financial Services Companies)									
CAPITAL ONE FINANCIAL CORPORATION	7.6x	(1.8x)	7.3x	8.2x	0.8x	1.1x	10.1%	14.3%	10.5%
DISCOVER FINANCIAL SERVICES	6.0x	(0.8x)	6.6x	7.1x	1.5x	1.5x	25.2%	25.7%	22.3%
INTER & CO, INC.	66.5x	0.2x	39.4x	30.3x	1.5x	1.8x	2.3%	2.8%	4.2%
Min	3.6x	(0.6x)	3.7x	4.1x	0.9x	0.9x	9.20%	10.25%	13.24%
Q1	7.2x	(0.7x)	7.1x	7.6x	1.0x	1.1x	9.33%	12.35%	13.17%
Median	**10.5x**	**0.3x**	**8.6x**	**8.2x**	**1.5x**	**1.7x**	**12.87%**	**15.99%**	**15.93%**
Mean	21.1x	0.1x	15.4x	14.1x	2.0x	2.3x	14.04%	16.02%	16.59%
Q3	27.0x	0.8x	18.6x	15.2x	1.7x	2.1x	18.35%	20.47%	20.20%
Max	66.5x	1.4x	39.4x	36.5x	6.5x	7.4x	25.24%	25.70%	31.65%
NU premium over BRL Banks	*355%*	*182%*	*443%*	*482%*	*466%*	*432%*	*106%*	*104%*	*22%*
NU premium over Fintechs	*156%*	*-111%*	*208%*	*240%*	*514%*	*493%*	*125%*	*124%*	*163%*

Share Price (without premium)	P/E (NTM)	P/E (FY24)	P/BV (T)	P/TBV (T)
Q1	$2.02	$2.64	$1.51	$1.53
Median	$2.43	$2.84	$2.29	$2.25
Q3	$5.27	$5.26	$2.60	$2.82
Share Price (inc premium)	**P/E (NTM)**	**P/E (FY24)**	**P/BV (T)**	**P/TBV (T)**
Q1	$6.57	$9.52	$7.40	$7.07
Median	$7.89	$10.26	$11.24	$10.42
Q3	$17.14	$19.00	$12.74	$13.07
Adjusted Share Price (inc premium)	**P/E (NTM)**	**P/E (FY24)**	**P/BV (T)**	**P/TBV (T)**
Premium applied	325%	361%	490%	463%
Adjusted multiple	27.9x	29.7x	7.4x	7.8x
Adjusted Share Price	$7.89	$10.26	$11.24	$10.42
Weightings	20%	30%	50%	0%
Relative Valuation Output				
Low				$ 7.87
Implied Share Price				**$ 10.28**
High				$ 15.50

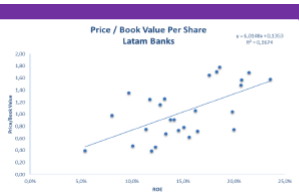
APPENDIX 13: Valuation - Value Maps

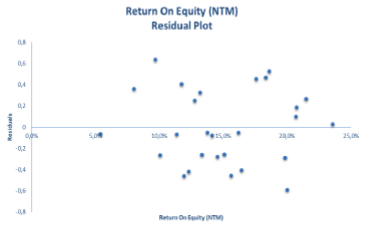
We conducted a linear regression analysis on the P/BV multiples (independent variable) against its corresponding profitability metric, ROE, using two different samples to analyze Nubank valuation : (1) Comparable commercial Latam Banks, and (2) Listed fintechs.

Commercial Banks - Latam:

Comparable Set 1: Commercial Banks - Latam

Identifier (RIC)	Company Name	Price / Book Value Per Share (NTM)	Return On Equity (NTM)
FBP.N	First Bancorp	1.71	18.30%
BPOP.OQ	Popular Inc	0.98	8.00%
OFG.N	OFG Bancorp	1.25	11.80%
BAP.N	Credicorp Ltd	1.06	16.20%
IFS.N	Intercorp Financial Services Inc	0.72	16.40%
BIC.CN	Bancolombia SA	0.73	14.60%
DVI_p.CN	Banco Davivienda SA	0.39	11.90%
BBDC4.SA	Banco Bradesco SA	0.91	14.10%
ITUB4.SA	Itau Unibanco Holding SA	1.48	20.70%
BBAS3.SA	Banco do Brasil SA	0.75	20.00%
ABCB4.SA	Banco ABC Brasil SA	0.79	15.10%
BRSR6.SA	Banco do Estado do Rio Grande do Sul SA	0.45	12.30%
BPAN4.SA	Banco Pan SA	1.26	13.20%
BMGB4.SA	Banco BMG SA	0.39	5.40%
INTR.OQ	Inter & Co Inc	1.35	9.70%
BMA.BA	Banco Macro SA	0.62	15.60%
GGAL.BA	Grupo Financiero Galicia SA	0.91	13.80%
BLX.N	Foreign Trade Bank of Latin America Inc	0.67	13.30%
GFNORTEO.MX	Grupo Financiero Banorte SAB de CV	1.69	21.50%
GFINBURO.MX	Grupo Financiero Inbursa SAB de CV	1.16	12.80%
GENTERA.MX	Gentera SAB de CV	1.04	19.90%
RA.MX	Regional SAB de CV	1.57	20.80%
BBAJIOO.MX	Banco del Bajio SA Institucion de Banca Mul	1.58	23.60%
BCI.SN	Banco de Credito e Inversiones	0.75	11.40%
ITAUCL.SN	Banco Itau Chile	0.47	10.10%
BSANTANDER.SN	Banco Santander-Chile	1.65	17.60%
CHILE.SN	Banco de Chile	1.78	18.60%





Regression Statics	
Multiple R	0.606116373
R Square	0.367377058
Adjusted R Square	0.342072140
Standard Error	0.357106222
Observations	27

ANOVA

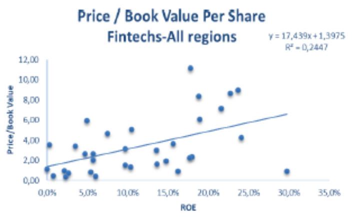
	df	SS	MS	F	Significance F
Regression	1	1.851407149	1.851407149	14.51801038	0.00080524
Residual	25	3.188121341	0.127524854		
Total	26	5.03952849			

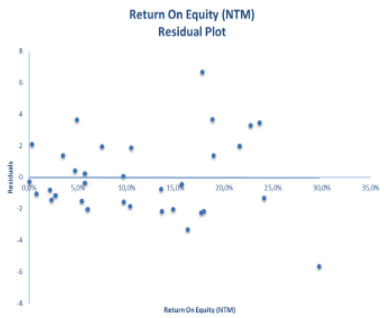
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	0.135253922	0.247429931	0.546635249	0.589475498	-0.37433756	0.644845404	-0.37433756	0.644845404
Return On Equity (NTM)	6.014754725	1.578571911	3.810250698	0.00080524	2.763625016	9.265884434	2.763625016	9.265884434

Listed Fintechs - All Region:

Comparable Set 2: Listed Fintechs - All region

Identifier (RIC)	Company Name	Price / Book Value Per Share (NTM)	Return On Equity (NTM)
INTU.OQ	Intuit Inc	7.16	21.60%
FIS.N	Fidelity National Information Services Inc	1.61	13.60%
COIN.OQ	Coinbase Global Inc	3.54	0.30%
PAY.N	Paymentus Holdings Inc	4.65	7.50%
MLNK.N	MeridianLink Inc	2.66	4.70%
HOOD.OQ	Robinhood Markets Inc	1.12	0.00%
000997.SZ	Newland Digital Technology Co Ltd	2.36	17.90%
300033.SZ	Hithink RoyalFlush Information Network Co	8.99	23.60%
688318.SS	Shenzhen Fortune Trend Technology Co Ltd	5.1	10.50%
603383.SS	Fujian Apex Software Co Ltd	6.09	18.90%
300803.SZ	Beijing Compass Technology Development C	11.18	17.80%
FUTU.OQ	Futu Holdings Ltd	2.22	17.70%
300872.SZ	Tansun Technology Co Ltd	2.02	5.70%
9959.HK	Linklogis Inc	0.37	2.30%
SLVX.SI	Silverlake Axis Ltd	1.94	14.80%
IHPI.L	IntegraFin Holdings plc	4.27	24.10%
PSFE.N	Paysafe Ltd	0.91	16.30%
ALLFG.AS	Allfunds Group PLC	1.53	9.70%
CABP.L	Cab Payments Holdings PLC	0.93	29.70%
CLXN.S	Crealogix Holding AG	3.16	9.70%
LEON.S	Leonteq AG	0.82	5.40%
PBFI.NS	PB Fintech Ltd	5.91	4.90%
377300.KS	KakaoPay Corp	3.4	3.50%
HYQGn.DE	Hypoport SE	2.63	5.70%
NIIGn.DE	Niiio Finance Group AG	0.96	2.20%
N4G.DE	Naga Group AG	0.48	0.80%
IRE.AX	Iress Ltd	3.67	15.60%
PPS.AX	Praemium Ltd	3	13.50%
IREN.OQ	Iris Energy Ltd	0.7	2.70%
WLN.PA	Worldline SA	0.42	6.00%
IFAS.SI	IFAST Corporation Ltd	8.35	18.80%
ADYEN.AS	Adyen NV	8.66	22.70%
STNE.OQ	StoneCo Ltd	1.35	10.40%





Regression Statics	
Multiple R	0.494688839
R Square	0.244717047
Adjusted R Square	0.220353081
Standard Error	2.515479534
Observations	33

ANOVA

	df	SS	MS	F	Significance F
Regression	1	63.55618373	63.5561837	10.0442204	0.00342754
Residual	31	196.1567559	6.32763729		
Total	32	259.7129396			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	1.397504914	0.768111226	1.81940436	0.07852037	-0.16906826	2.96407809	-0.16906826	2.96407809
Return On Equity (NTM)	17.43922836	5.502615245	3.16926181	0.00342754	6.21657058	28.6618861	6.21657058	28.6618861

APPENDIX 14: Investment Risks - Sensitivity Analysis

Sensitivity Analysis: Terminal COE vs Terminal Growth Rate

Sensitivity - TCOE vs TGR (Excess Return Income Model)

Terminal Cost of Equity \ Terminal Growth Rate	2.85%	3.35%	3.85%	3.90%	3.95%
11.05%	$ 10.76	$ 11.27	$ 11.86	$ 11.92	$ 11.99
12.05%	$ 9.22	$ 9.58	$ 9.99	$ 10.04	$ 10.08
13.05%	$ 7.98	$ 8.24	$ 8.53	$ 8.56	$ 8.59
14.05%	$ 6.97	$ 7.15	$ 7.36	$ 7.38	$ 7.40
15.05%	$ 6.12	$ 6.25	$ 6.39	$ 6.41	$ 6.42

Sensitivity - TCOE vs TGR (Dividend Discount Model)

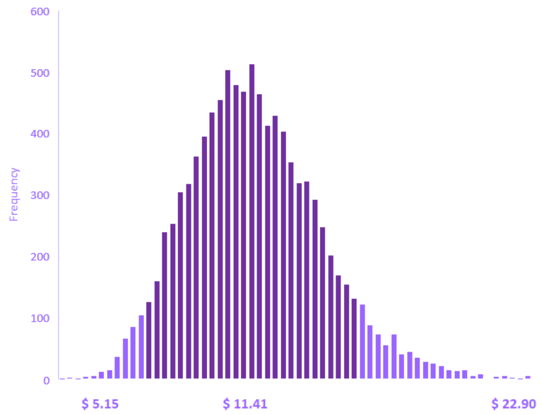
Terminal Cost of Equity \ Terminal Growth Rate	2.85%	3.35%	3.85%	3.90%	3.95%
11.05%	$ 7.86	$ 8.26	$ 8.72	$ 8.77	$ 8.82
12.05%	$ 7.24	$ 7.56	$ 7.92	$ 7.96	$ 8.00
13.05%	$ 6.74	$ 7.00	$ 7.29	$ 7.32	$ 7.35
14.05%	$ 6.32	$ 6.54	$ 6.78	$ 6.81	$ 6.83
15.05%	$ 5.98	$ 6.16	$ 6.36	$ 6.39	$ 6.41

Sensitivity - TCOE vs TGR (Free Cash Flow To Equity Model)

Terminal Cost of Equity \ Terminal Growth Rate	2.85%	3.35%	3.85%	3.90%	3.95%
11.05%	$ 12.21	$ 12.86	$ 13.59	$ 13.67	$ 13.75
12.05%	$ 11.22	$ 11.73	$ 12.30	$ 12.36	$ 12.43
13.05%	$ 10.42	$ 10.84	$ 11.30	$ 11.35	$ 11.40
14.05%	$ 9.76	$ 10.11	$ 10.49	$ 10.53	$ 10.57
15.05%	$ 9.21	$ 9.51	$ 9.83	$ 9.86	$ 9.89

APPENDIX 15: Investment Risks - Simulation Analysis

Simulation Analysis: Monte Carlo Simulation



Source: Company data, team estimates

Summary Statistics			Percentile	Output Price	
Minimum	$	5.15	5%	$	8.22
Maximum	$	22.90	10%	$	8.81
Mean	$	11.41	15%	$	9.22
Std Deviation	$	2.14	20%	$	9.61
Variance		4.562170198	25%	$	9.92
Skewness		0.511956556	30%	$	10.21
Kurtosis		0.514776764	35%	$	10.48
Errors		0.0	40%	$	10.73
Mode	$	11.26	45%	$	10.99
Trials		10000	50%	$	11.26
			55%	$	11.50
Min 90% conf	$	11.38	60%	$	11.79
Max 90% conf	$	11.45	65%	$	12.09
			70%	$	12.38
			75%	$	12.73
			80%	$	13.11
			85%	$	13.56
			90%	$	14.19
			95%	$	15.18

Variable	Distribution	Std. Dev.
ARPAC Growth	Normal	300bps
Customers Growth	Normal	500bps
Gross Profit Ratio	Normal	100bps
COE Ratio	Normal	200bps

APPENDIX 16: ESG Scoring Methodology

For Nubank, the following scores and grades were applied:

Pillar	Category	Category Weights	Category Scores	Sum Of Category Weights
Enviromental	Emissions and Resources	9%	0.423	
	Innovation	5%	0.333	0.05472
Social	Community	15%	0.793	
	Human rights	5%	0.652	
	Product responsability	10%	0.723	
	Workforce	20%	0.845	0.39285
Corporate Governance	Shareholders	7%	0.532	
	Dividends policy	4%	0.493	
	Management	20%	0.883	0.23356
SubTotal Score				0.68113
ESG Preliminary Score				B+

Controversies	5%	0.4415	C+
ESG Score			B

It was applied Beta Adjustment based on the SPICE´s Rating:

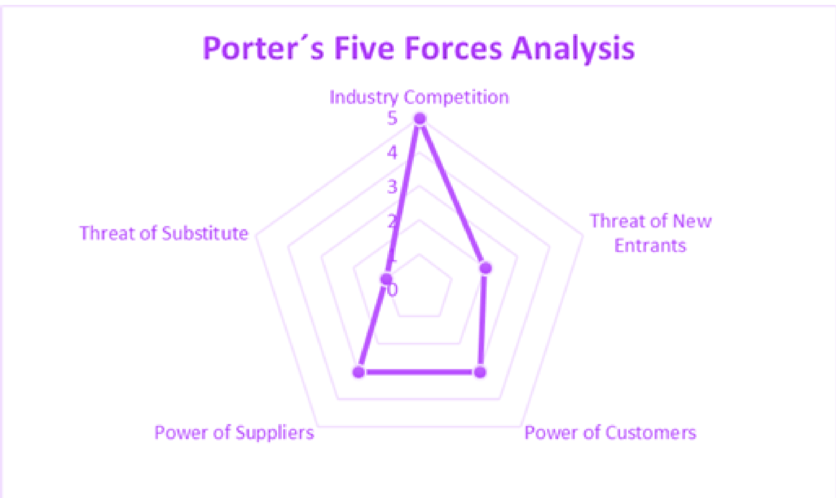
SPICE RATING	BETA ADJUSTMENT
A+	-20%
A	-10%
B	0
C	10%
C-	20%

SCORE RANGE	GRADE	DESCRIPTION
0.0<=score<=0.08333 0.08333<=score<=1.66666 1.66666<=score<=0.25000	D- D D+	"D" Score indicates por relative ESG performance and insufficient degree of transparency in reporting material ESG data publicly
0.25000<=score<=0.33333 0.33333<=score<=0.41666 0.41666<=score<=0.50000	C- C C+	"C" score indicates satisfactory relative ESG performance and moderate degree of transparency in reporting material ESG data publicly
0.50000<=score<=0.58333 0.58333<=score<=0.66666 0.66666<=score<=0.75000	B- B B+	"B" score indicates good relative ESG performance and above average degree of transparency in reporting material ESG data publicly
0.75000<=score<=0.83333 0.83000<=score<=0.91666 0.91666<=score<=1	A- A A+	"A" score indicates excellent relative ESG performance and high degree of transparency in reporting material ESG data publicly

ESG Laggards

ESG Leaders

APPENDIX 17: PORTER FIVE FORCES



Porter Five Forces:		
1	Industry Competition	5
2	Threat of New Entrants	2
3	Power of Customers	3
4	Power of Suppliers	3
5	Threat of Substitute	1

Legends:

0 No threat to the business
1 Insignificant threat to the business
2 Low threat to the business
3 Moderate threat to the business
4 Significant threat to the business
5 High threat to the business

Threat of New Entrants: Low

Nubank entered a highly regulated financial industry, which may act as a barrier to entry.The need for significant capital, regulatory approvals, and established customer trust can deter new entrants. Nubank's early-mover advantage and focus on technology may create a barrier for new entrants to compete effectively.

Power of Customers: Moderate

Nubank's customers have moderate to high bargaining power due to low switching costs in the financial industry. However, if Nubank provides unique and valuable services, customer loyalty and the threat of switching may be reduced. Nubank's commitment to customer service and innovative offerings can influence customer loyalty.

Power of Suppliers: Moderate

Suppliers in the financial industry, such as technology providers and regulatory bodies, may have moderate power. Nubank's reliance on technology may give technology suppliers some bargaining power. Regulatory bodies can influence the industry significantly, affecting the operations and policies of Nubank.

Threat of Substitute Products or Services: Insignificant

Traditional banks and other fintech companies offering similar services pose a threat to Nubank. Notwithstanding, this could be a challenge for industry. Talking about products, all banking products such as bank accounts offer liquidity for retail transactions. Nubank's focus on customer experience and technological innovation can help mitigate the threat of substitutes.

Intensity of Competitive Rivalry: High

In the fintech industry, competition is intense, with numerous companies vying for market share.Nubank faces competition from traditional banks as well as other fintech startups.Innovation, customer service, and brand recognition play key roles in differentiating Nubank from its competitors.

After analyzing each force, you can assess the overall attractiveness of the industry and Nubank's position within it. If the forces are generally weak, it suggests a favorable environment for the company. Conversely, if the forces are strong, it indicates a more challenging environment that may require strategic adjustments. Keep in mind that the competitive landscape can evolve, so periodic reviews of the analysis are valuable.

APPENDIX 18: FINANCIAL ANALYSIS

NUBANK — **Balance Sheet**

Assets

In thousands of U.S. Dollars	2021	2022	2023 (Est.)
Cash and cash equivalents	2.705.675	4.172.316	3.072.263
Financial assets at fair value through profit or loss	**918.332**	**133.643**	**124.350**
Securities	815.962	91.853	111.351
Derivative financial instruments	101.318	41.485	12.679
Collateral for credit card operations	1.052	305	320
Financial assets at fair value through other comprehensive income	**8.163.428**	**9.947.138**	**8.246.944**
Securities	8.163.428	9.947.138	8.246.944
Financial assets at amortized cost	**6.982.835**	**13.684.484**	**24.830.833**
Credit card receivables	4.780.520	8.233.072	11.387.438
Loans to customers	1.194.814	1.673.440	3.152.404
Compulsory and other deposits at central banks	938.659	2.778.019	7.735.124
Other receivables	50.349	521.670	2.364.487
Other financial assets	18.493	478.283	141.707
Securities	-	-	49.673
Customer crypto safeguarding asset	-	18.313	-
Other assets	232.915	541.903	929.485
Deferred tax assets	360.752	811.050	1.604.827
Right-of-use assets	6.426	18.982	29.413
Property, plant and Equipment	14.109	27.482	39.322
Intangible assets	72.337	182.164	320.050
Goodwill	401.872	397.397	397.541
Total assets	**19.858.681**	**29.934.872**	**39.595.027**

Total Assets	**19.858.681**	**29.934.872**	**39.595.027**

Liabilities & Equity

In thousands of U.S. Dollars	2021	2022	2023 (Est.)
Financial liabilities at fair value through profit or loss	**102.380**	**218.174**	**254.087**
Derivative financial instruments	87.278	9.425	103.111
Instruments elegible as capital	12.056	11.507	2.839
Repurchase agreements	3.046	197.242	148.138
Financial liabilities at amortized cost	**14.706.713**	**23.448.892**	**31.479.230**
Deposits	9.667.300	15.808.541	20.383.705
Payable to network	4.882.159	7.054.783	9.757.707
Borrowings and financing	147.243	585.568	1.337.818
Securitized borrowings	10.011	-	-
Salaries, allowances and social security contributions	97.909	90.587	200.699
Tax liabilities	241.197	511.017	1.094.559
Lease liabilities	7.621	20.353	37.934
Provision for lawsuits and administrative proceedings	18.082	17.947	4.018
Deferred income	30.657	41.688	69.610
Deferred tax liabilities	29.334	41.118	93.940
Customer crypto safeguarding liability	-	18.313	-
Other liabilities	182.247	636.000	309.355
Total Liabilities	**15.416.140**	**25.044.089**	**33.543.431**

In thousands of U.S. Dollars	2021	2022	2023 (Est.)
Share capital	83	83	83
Share premium reserve	4.678.585	4.963.774	4.974.497
Accumulated gain (losses)	- 128.409	64.577	1.160.438
Other comprehensive income (loss)	- 109.227	- 137.651	- 83.422
Equity attributable to shareholders of the parent company	**4.441.032**	**4.890.783**	**6.051.595**
Equity attributable to non-controlling interests	1.509	-	-
Total Equity	**4.442.541,00**	**4.890.783,00**	**6.051.595,26**

Total Liabilities & Equity	**19.858.681**	**29.934.872**	**39.595.027**

INCOME STATEMENT

Revenue	2020	%	2021	%	2022	%	2023 (E)	%
Interest income and gain (losses) on financial instruments	382.922	51,95%	1.046.746	61,64%	3.555.213	74,19%	6.505.240	80,73%
Fee and commission income	354.211	48,05%	651.277	38,36%	1.237.018	25,81%	1.552.567	19,27%
Total revenue	**737.133**	100,00%	**1.698.023**	100,00%	**4.792.231**	100,00%	**8.057.807**	100,00%
Interest and other financial expenses	(113.924)	-15,46%	(367.344)	-21,63%	(1.547.903)	-32,30%	(2.021.986)	-25,09%
Transactional expenses	(126.815)	-17,20%	(117.119)	-6,90%	(176.427)	-3,68%	(212.991)	-2,64%
Credit loss allowance expenses	(169.485)	-22,99%	(480.643)	-28,31%	(1.404.911)	-29,32%	(2.414.328)	-29,96%
Total cost of financial and transactional servi	**(410.224)**	-55,65%	**(965.106)**	-56,84%	**(3.129.241)**	-65,30%	**(4.649.305)**	-57,70%
Gross profit	**326.909**	44,35%	**732.917**	43,16%	**1.662.990**	34,70%	**3.408.502**	42,30%

Operating expenses	2020	%	2021	%	2022	%	2023 (E)	%
Customer support and operations	(123.950)	29,59%	(190.509)	21,10%	(335.363)	17,01%	(483.905)	25,41%
General and administrative expenses (G&A)	(266.024)	63,50%	(628.901)	69,64%	(1.333.267)	67,61%	(978.649)	51,38%
G&A - Contingent share award (CSA) termination	-	0,00%	-	0,00%	(355.573)	18,03%	-	0,00%
G&A - Other	(266.024)	63,50%	(628.901)	69,64%	(977.694)	49,58%	(1.030.163)	54,08%
Marketing expenses	(19.426)	4,64%	(79.574)	8,81%	(152.997)	7,76%	(154.029)	8,09%
Other income (expenses)	(9.535)	2,28%	(4.097)	0,45%	(150.264)	7,62%	(236.643)	12,42%
Total operating expenses	**(418.935)**	**-56,83%**	**(903.081)**	**-53,18%**	**(1.971.891)**	**-41,15%**	**(1.904.741)**	**-23,64%**

Results with convertible instruments	(101.152)		-		-		-	
Profit (loss) before income taxes	**(193.178)**	**-26,21%**	**(170.164)**	**-10,02%**	**(308.901)**	**-6,45%**	**1.503.762**	**18,66%**

Income taxes	2020	%	2021	%	2022	%	2023 (E)	%
Current taxes	(22.338)	-103,00%	(219.824)	-4551,22%	(473.345)	849,31%	(1.149.808)	269,83%
Deferred taxes	44.025	203,00%	224.654	4651,22%	417.612	-749,31%	723.678	-169,83%
Total income taxes	**21.687**	**2,94%**	**4.830**	**0,28%**	**(55.733)**	**-1,16%**	**(426.130)**	**-5,29%**

Profit (loss) for the year	**(171.491)**	**-23,26%**	**(165.334)**	**-9,74%**	**(364.634)**	**-7,61%**	**1.077.632**	**13,37%**
Profit (loss) attributable to shareholders of the parent company	(171.491)	100,00%	(164.993)	99,79%	(364.578)	99,98%	1.077.632	100,00%
Profit (loss) attributable to non-controlling interests	-	0,00%	(341)	0,21%	(56)	0,02%	-	0,00%

Profit (loss) per share - Basic and Diluted	**(0,1304)**	**0,00%**	**(0,1030)**	**0,00%**	**(0,0780)**	**0,00%**	**0,1895**	**0,00%**
Weighted average number of outstanding shares - Basic and Diluted (in thousands of	1.315.578		1.602.126		4.676.977		5.685.564	

APPENDIX 19: LOANS TO CUSTOMERS

	2022				
	Gross Exposures	%	Credit Loss Allowance	%	Coverage Ratio
Strong (PD < 5%)	**832,448**	**42.1%**	**9,344**	**3.1%**	**1.1%**
Stage 1	819,605	98.5%	9,093	97.3%	1.1%
Stage 2	12,843	1.5%	251	2.7%	2.0%
Satisfactory (5% <= PD <= 20%)	**642,099**	**32.5%**	**40,852**	**13.6%**	**6.4%**
Stage 1	583,925	90.9%	36,228	88.7%	6.2%
Stage 2	58,174	9.1%	4,624	11.3%	7.9%
Higher Risk (PD > 20%)	**501,952**	**25.4%**	**250,027**	**83.3%**	**49.8%**
Stage 1	117,510	23.4%	31,133	10.4%	26.5%
Stage 2	280,149	55.8%	143,358	47.8%	51.2%
Stage 3	104,293	20.8%	75,536	25.2%	72.4%
Total	**1,976,499**	**100.0%**	**300,223**	**100.0%**	**15.2%**

APPENDIX 20: CREDIT CARD RECEIVABLES

	2022				
	Gross Exposures	%	Credit Loss Allowance	%	Coverage Ratio (%)
Strong (PD < 5%)	**6,097,909**	**65.8%**	**113,780**	**10.8%**	**1.9%**
Stage 1	6,081,551	99.7%	113,525	99.8%	1.9%
Stage 2	16,358	0.3%	255	0.2%	1.6%
Satisfactory (5% <= PD <= 20%)	**1,477,414**	**15.9%**	**118,825**	**11.2%**	**8.0%**
Stage 1	1,227,610	83.1%	100,190	84.3%	8.2%
Stage 2	249,804	16.9%	18,635	15.7%	7.5%
Higher Risk (PD > 20%)	**1,690,902**	**18.3%**	**818,063**	**78.0%**	**48.4%**
Stage 1	441,109	26.1%	109,255	13.4%	24.8%
Stage 2	651,016	38.5%	235,291	28.8%	36.1%
Stage 3	598,777	35.4%	473,517	57.9%	79.1%
Total	**9,266,225**	**100.0%**	**1,050,668**	**100.0%**	**11.3%**

APPENDIX: CITATIONS

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